CHINHOYI UNIVERSITY OF TECHNOLOGY

MODELING ENTREPRENEURIAL COMPETENCE AREAS AS A STRATEGY TO INDUCE BETTER AGRICULTURAL PERFORMANCE IN ZIMBABWE

BY

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APPROVAL FORM

The undersigned certify that they have read and recommended to the Graduate Business School, Chinhoyi University of Technology, for acceptance a dissertation entitled, "

MODELING ENTREPRENEURIAL COMPETENCE AREAS AS A STRATEGY TO INDUCE BETTER AGRICULTURAL PERFORMANCE IN ZIMBABWE.",

Submitted by JABEZ MOYO, in fulfilment of the requirements for the Doctor Of Philosophy Degree in Entrepreneurial Studies.

Name of Supervisor: Professor Desderio Chavunduka

Signature 

Date: 14 / 06 / 2024

DECLARATIONS

I, Jabez Moyo, declare that this Doctor of Philosophy study is my own effort and is a true reflection of research executed by me. This research in full or part thereof has not been submitted for examination for any degree at any other university/institution.

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CHINHOYI UNIVERSITY OF TECHNOLOGY

PERMISSION LETTER

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Approved research topic

MODELING ENTREPRENEURIAL COMPETENCE AREAS AS A STRATEGY TO INDUCE BETTER AGRICULTURAL PERFORMANCE IN ZIMBABWE.

TO WHOM IT MAY CONCERN

I hereby confirm that the above-mentioned student is registered at Chinhoyi University of Technology for the programme indicated. The proposed study met all the requirements as stipulated in Chinhoyi University of Technology policies and guidelines and has been approved by the Graduate Business School.

The proposal adheres to ethical principles as outlined by the Research Ethics Committee of the University. Permission is hereby granted to carry out the research as described in the approved proposal. May you please assist the student in any way possible?

The main objective of the study is to Model the entrepreneurial strategy for improvement of agricultural performance in Zimbabwe

Best Regards

Signature and Date Stamp

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DEDICATION

This thesis is dedicated to the Almighty God for giving me strength and to all members of my family.

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ABSTRACT

Though Zimbabwe is an agro-based economy, there has been a continued decrease in the sectorial contribution of agriculture to the gross domestic product (GDP). The reliance on government inputs support has stifled innovativeness and creativity by downplaying entrepreneurial competency as a necessity in favour of inputs emphasis resulting in a skills gap. The rationale is based on a simplistic view that inputs support leads to high output yet there are other factors which this study seeks to explore and provide a model to plug knowledge gaps in this area. This study employed a positivist philosophy and its intent was to determine the effect of entrepreneurial competences on Agricultural Performance. The study used a sample of 384 farmers as respondents. A Spearman's rank order correlation was run to determine the relationship between entrepreneurial competencies and agricultural performance and there was a strong, positive correlation, $r_s = 0.946$, $p < 0.05$. On the ANOVA (Analysis of Variance), the polynomial model of action significantly predicted agricultural performance, $F(2, 381) = 1542.612$, $p < 0.05$. The positive beta weights showed that the increase of entrepreneurial competences also increases the agricultural performance of farmers. The study recommends that the Government of Zimbabwe implements an 'agro-entrepreneurial framework' which entails the training of farmers in entrepreneurial competences. Government needs also to identify a pool of farmers who will be trained in entrepreneurial competences and be supported with capital and be monitored. The Education 5.0 policy can be roped in and Universities can train and incubate farmers in their localities on entrepreneurial competences. The industrial hubs existing under education 5.0 can be adapted to be the commercial hubs for the agricultural business activities in Zimbabwe.

Key Words: Entrepreneurial Competences, Agricultural Performance, agricultural training, agro-entrepreneurial framework, Education 5.0

LIST OF ABBREVIATIONS

ATA	Agricultural Transformation Agenda
APP	Agricultural Promotion Policy
ESAP	Economic Structural Adjustment Programme
EntreComp	Entrepreneurship Competence Framework
FAO	Food and Agriculture Organisation
FTLR	Fast Track Land Reform Programme
GDP	Gross Domestic Product
GEM	Global Entrepreneurship Monitor
GMB	Grain Marketing Board
GOZ	Government of Zimbabwe
LRRP1	Land Reform and Resettlement Program First Phase
RBZ	Reserve Bank of Zimbabwe
SME	Small and Medium Scale Enterprises
TCAP	Targeted Command Agriculture Program
USAID	United States Agency for International Development.
USD	United States Dollar
WHO	World Health Organisation
ZIMSTAT	Zimbabwe National Statistics Agency
ZIMVAC	Zimbabwe Vulnerability Assessment Committee

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CHAPTER 1

INTRODUCTION AND OVERVIEW

1.1 Background to the Study

Zimbabwe is a landlocked country in the southern part of Africa. It covers an area of over 39 million hectares in extent. Of this hectarage, 33.3 million hectares is used for agricultural activities (FAO, 2016). The agricultural land is spread across five natural regions classified according to rainfall patterns, pedological factors as well as climatic factors. The rest of the land is for residential purposes, tourism and mining. Thus, Matandare (2017) views agriculture as the largest industry comprising 75% employment capacity in the country. Muir-Leresche (2006) notes that the manufacturing sector depends on agriculture to some significant extent on raw materials. Thus any volatile or erratic agricultural output or performance has negative implications on the economy. Maiyaki (2010) in concurrence noted that for the Zimbabwean economy, there was need to revive the industry though such a task hinges on a strong agricultural base so that the agro-allied industries can be established.

The World Bank (2019) notes that the agricultural sector accounted for 8.3% of Zimbabwe's GDP from both subsistence and commercial farmers from 19.02% in 2008. This value of the GDP share in 2018 for Zimbabwe of 8.3% is against a global average of 10.43%. The maximum ever attained in Zimbabwe was 21.86% in 1967 and the lowest was 6.75% in 1992 (World Bank, 2019). Thus, the agricultural contribution has a significant part to play in Zimbabwe.

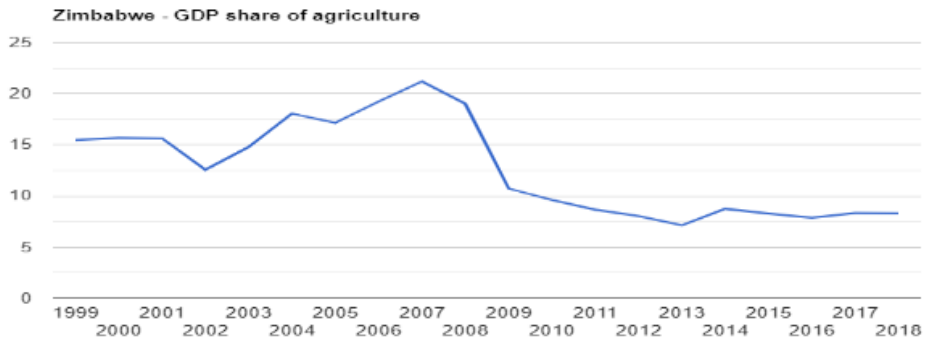


Figure 1.1. Zimbabwe GDP share of Agriculture 1999-2018

Source- The World Bank (as cited in The Global Economy.com. 2020)

The World Bank (2019) notes that Zimbabwe has losses in agricultural productivity which could have been avoided. The report emphasizes the need to capacitate the resilience of small-scale farmers. There is no entrepreneurial approach towards farming as an agricultural enterprise with a capacity for productivity and optimum farm utilization. This exposes the farm dwellers and the nation to food insecurity due to low productivity. De Lauwere, Carolien, Vermeulen and Verhaar, (2002) in earlier writings describe some government initiatives to promote entrepreneurial culture in the farming business. A case in point being the Dutch government who have fostered radical measures to stimulate agricultural entrepreneurship. In concurrence Fatemi (2020) emphasises the need for entrepreneurial approach to stem a decline in agricultural development in Iran. The United States Agency for International Development (USAID, 2019) notes that in sub–Saharan Africa, agricultural production is comparatively lower than other global regions and that despite stagnation in production, consumption has increased against a backdrop of population and income growth. The Food and Agriculture Organization (FAO, 2016) reveals that there is a net deficit between food consumption and food production. The demand deficits are mitigated through imports which are financially crippling to the Sub-Saharan economies due to the prevailing high commodity prices. There has been an emphasis on agricultural funding through both government and private initiatives such as bank loans, command agriculture (contract farming) and the Presidential input scheme. However, there is no significant change in farm productivity.

The first phase of the land reform and resettlement program (LRRP1) commenced at independence and ran for almost two decades (1980-1997). However, this program did not have any impact on agricultural productivity and the rural economy. This was attributed to lack of government support to the resettled farmers, financial constraints among other ills (Chiremba and Masters, 2003). The land redistribution from the year 1999 onwards saw the resettlement of mostly the indigenous peoples onto farmland. The resettlement exercise meant that both skilled, semi-skilled and unskilled indigenous peoples became farmers. Despite an increase of ‘farmers’ there is a decrease in productivity which was previously at 10% maize production in Africa in 1985 to negligible levels which left the country in need of food aid. Though the agricultural sector faces challenges it remains resilient and has minimal prospects of collapsing (Scoones et al, 2010).

Mkodzongi and Lawrence (2019) note that the previous hectarage of communal farms remained static under the land reform programme at 16.4 million hectares. These farms were previously a product of the colonial bi-modal land redistribution which placed blacks on one hand in certain

communal areas and the whites on the other hand were placed in the choicest areas. Moyo (2011) notes that from 2000, in terms of hectarage, there has been an increase in the allocation of new farm models namely the A1, predominantly for crops and animal rearing for low end black farmers and the A2 for new black commercial farmers. The A1 model is now at 4.1 million hectares from zero before the land reform (Kasiyano, 2017). There was a drop in the previously commercial farmers' hectarage due to the redistribution of land mainly to black farmers and state farms. In earlier observations Pazvakavambwa (2007) notes that 230,000 households were allocated land and the Government of Zimbabwe (ZIMSTAT, 2019) concurs by publicizing that 68% of the land was transferred to ordinary citizens.

Table 1.1 Land Holdings Before and After the Introduction of Fast Track Land Reform, Zimbabwe (Kasiyano, 2017).

Area (million ha)			
Land category	1980	2000	2009
Communal area	16.4	16.4	16.4
Old resettlement	0.0	3.5	3.5
New resettlement A1	0.0	0.0	4.1
New resettlement A2	0.0	0.0	3.5
Small-scale commercial farms	1.4	1.4	1.4
Large-scale commercial farms	15.5	11.7	3.4
State farms	0.5	0.7	0.7
Urban land	0.2	0.3	0.3
National parks and forest land	5.1	5.1	5.1
Unallocated land	0.0	0.0	0.7

(Source: Kasiyano, 2017)

There has been overall decline in production of food security crops from the pre- land form era to date. Sakadzo and Kugedera (2020) corroborate earlier assessments by Maiyaki (2010) who noted that the decline from 1996 for maize was due to low production by the commercial farming sector and the escalation of input costs. Other researchers have attributed the low productivity to a variety of factors such as insecurity of land tenure, financial issues and climatic conditions such as drought (Chavunduka, Dipura and Vudzijena, 2020). They also note that there is need for a robust agricultural sector as this may increase employment, disposable incomes and has

the potential to eliminate absolute poverty. Earlier research by Hazell and Haggblade (1993) asserts that encouraging agricultural growth at government policy level has more benefits besides farm incomes and it can kick start linkages with non-farm economies, leading to economic revival and an accelerated poverty reduction. Chavunduka et al (2020) whilst acknowledging this assertion point out that, they are wary on the capacity of the farmers to make the resettled land productive.

The resettled farmers are still active on the farms but the land productivity is still low. They are mostly into subsistence farming and rarely treat their farms as an enterprise. There is need for skills transfer and training in that regard. However, the low productivity is not peculiar to Zimbabwe as Sheahan and Barret (2017) observes that the agricultural industry in Africa is a perennial underperformer and productivity is sluggish with limited uptake of entrepreneurial activities. This view is shared by Sancho (2010), who notes that in Latin America the indices for entrepreneurship uptake in agriculture and rural communities is low compared to Asia. Entrepreneurship is a likely key to stimulate rural and agricultural development through exploitation of business opportunities. Most farms in Africa are household operated utilizing family labour with minimal paid workers and there is limited entrepreneurial and business focus (Eastwood, Lipton, Newell, 2010). Lachaud, Bravo-Ureta, Fiala and Gonzalez (2018) further point out that in smallholder farming some of the obstacles to agricultural productivity and performance include lack of skills or competences and lack of training. They contend that agricultural practices can be improved through training and skills development. They note that managerial and vocational training skills increase agricultural performance and income of trainees.

The World Bank (2007) notes that African countries are now more concerned with moving the agricultural activities away from subsistence farming towards higher productivity to reduce dependence on imports. This then brings to the fore the concept of Agricultural Entrepreneurship. Ahmed, Hasan, Haneef (2011) describes agricultural entrepreneurship as a viable merger of agriculture and entrepreneurship existing to find means to create and develop profitable farm businesses. Earlier researchers such as DeTienne and Chandler (2004) earlier view the core of agricultural entrepreneurship as a focus on the identification and pursuit of opportunities emphasizing the creative, alertness pro-activeness and networking components of an entrepreneurial undertaking. Recent studies in Kwara State, Nigeria show that agricultural entrepreneurship is low and significantly influenced by socio-economic characteristics of the farmers (Omotesho, Adesji, Akanbi, Anoyemi and Ekwemuka, 2019).

Warren (2004) in earlier studies asserts that in the broader research context, agricultural entrepreneurship has not been explored in detail compared to 'entrepreneurship or classic entrepreneurship. Farming in the United Kingdom, though accepted as a small to medium enterprise rarely features on discussions of small business development and entrepreneurship. In other disciplines such as agricultural economics, Knudson, Wysocki, Champagne and Peterson (2004), note that there is little emphasis on agricultural entrepreneurship and innovation. The agricultural sector lags behind in development due to lack of entrepreneurial orientation and investment, reluctance by private sector for partnerships, human erosion, poor development of agriculture value chains, among others as observed by Far and Rezaei-Maghaddan (2019). They further note that the agricultural sector must undergo remedial processes so as to adapt and cope with the existing challenges. Agricultural entrepreneurial skills develop entrepreneurs and the workforce to exhibit a better performance in the farming industry. Deekor (2019), advocates for policies that will include training of current and prospective farmers in agricultural entrepreneurship. The recommendation is based on the cognitive approach to entrepreneurial competences based on empirical research which shows that there is a positive relationship to farm performance when entrepreneurial competences and skills are evident.

Deekor (2019), citing De Wolf and Schoorlemmer, 2008) notes that production skills are a basic requirement for success in the farming business. There is emphasis on farmers to become businesspersons due to various input combinations and the growing complexity of farming as a business. The presence of entrepreneurial competences in agriculture is a precursor towards the development of a sustainable rural economy (Esiobu, Onubuogu, and Ibe, 2015). Agricultural entrepreneurship has transformed from core farm activities and has branched to food processing, farm stores and agricultural tourism among others (Fitz-Koch, Nordqvist, Carter and Hunter, 2018). Thus, agricultural entrepreneurship competences can be defined as a combination of farm production skills and business management. In consideration, Zimbabwe Gross Domestic Product is anchored on agriculture thus entrepreneurial competences become a focal point towards an agrarian economic turnaround.

1.2 Statement of the Problem

Despite the fact that Zimbabwe is an agro-based economy, there has been a marked and continued decrease in the sectorial contribution of agriculture to the gross domestic product (GDP) (World Bank, 2022). In 2008 the agricultural contribution to the GDP was 19.02% and it continued to decline to 8.3% in 2018 and 8.85% in 2022. The country still remains as a net food importer. The reliance on government inputs support, though well-meaning, seems to have stifled

innovativeness and creativity by downplaying entrepreneurial competency as a necessity in favour of inputs emphasis resulting in a skills gap. The rationale is based on a simplistic view that inputs support leads to high output yet there are other factors which this study seeks to explore and provide a model to plug knowledge gaps in this area. In concurrence, Mutambara (2016b) notes that free inputs have not been beneficially and they somewhat created an unhealthy dependency syndrome among farmers. There is a high farm failure rate and a generally poor performance and food security remains elusive. This study intent was to contribute to the body of knowledge by modelling entrepreneurial competences as a strategy to induce better agricultural performance in Zimbabwe. The practice of treating farming as a subsistence and part time activity rather than as a business is of a disturbing view indeed that affects agricultural performance thus this warrants research of this magnitude. The study models the capacity of entrepreneurial competences as a strategy to induce better agricultural performance and also proffers solutions to government and other stakeholders on improving agricultural performance through entrepreneurial competences evaluation.

1.3 Research Objectives

1. To determine the effect of Ideas and Opportunities Competences areas on Agricultural Performance.
2. To assess the effect of Resources Competences areas on Agricultural Performance.
3. To ascertain the effect of Into Action Competences areas on Agricultural Performance.
4. To ascertain the impact of the combined effect of entrepreneurial competence areas on Agricultural Performance.
5. To establish whether there is any direct or indirect effect of entrepreneurial competence areas on Agricultural Performance.

1.4 Research Questions

1. Do Ideas and Opportunities Competences areas have an effect on Agricultural Performance?
2. Do Resources Competences areas have an effect on Agricultural Performance?
3. Do Action Competences areas have an effect on Agricultural Performance?
4. To what extent does the combined effect of entrepreneurial competence areas have on Agricultural Performance?

5. Is there any direct or indirect effect of entrepreneurial competence areas on Agricultural Performance?

1.5 Research Hypothesis

The research hypothesis which were derived from the conceptual framework and the research objectives are hereby outlined below:

H_1 There is a significant effect of Ideas and Opportunities Competences Area on Agricultural Performance.

H_2 There is a significant effect of Resources Competences Area on Agricultural Performance.

H_3 There is a significant effect of Into Action Competences Area on Agricultural Performance.

H_4 There is a significant impact of the combined effect of entrepreneurial competence areas on Agricultural Performance.

H_5 There is a direct or indirect effect of entrepreneurial competence areas on Agricultural Performance.

1.6 Significance of the Study

Significance to Policy

In Zimbabwe, agriculture is the pillar of the economy. In the current environment where farming is regarded as a chore rather than a business or an enterprise the returns from the same will continue being negligible. Thus, this can be solved by assessing the performance of farms for agricultural activities. The findings will assist in proffering solutions to the government to improve the Gross Domestic Product through agricultural activities thus this has significance to policy and practice.

Significance to Practice

This study is capable of influencing farmers to adopt entrepreneurial competences in the pursuance of their farming and agricultural activities. This has the potential to induce a better agricultural performance.

Academic Significance

Agricultural entrepreneurship with focus on entrepreneurial competences is an emerging field thus this study will contribute to the body of knowledge as a whole. Thus, the study has academic

significance as it will also further the body of knowledge in agricultural entrepreneurship and agribusiness

Significance to Theory

Furthermore, Zimbabwe was chosen for this study in that the country embarked on a historic land redistribution ostensibly to address economic inequality and to buttress agricultural performance. There is limited research in entrepreneurial competences and agriculture thus presenting an opportunity to fill this research gap. Thus, it is highly probable that the research is original and has both an academic, theoretical and political impact. Thus this research has significance to theories which underpin the study.

1.7 Scope of the study/ Limitations of the Study

Geographical Boundaries

The study was initially poised to involve all the 10 provinces of Zimbabwe. However, on embarking on field work it became apparent that the two metropolitan provinces of Bulawayo and Harare were not ideal as samples for agricultural activities as they are mostly residential and commerce hubs. To minimize bias and remoteness of some areas, the respondents were accessed through provincial agricultural shows, field days and random questionnaire distribution at shopping centres or growth points of farming communities. Agricultural shows and field days are normally publicized prior to the commencement of the events.

Time Limitation

The research study had a time frame due to academic requirements and had a set time for completion.

Target Population

The study population comprised of farmers of various capacities and capabilities picked at random from the 8 provinces of Zimbabwe exclusive of the metropolitan provinces of Bulawayo and Harare.

Field Of Study

The study sought to model entrepreneurial competence areas as a strategy to induce better agricultural performance in Zimbabwe.

1.8 Structure of the Thesis

The research study was organized into 6 chapters where:

Chapter 1

This chapter looked at the background information of the study where the country of interest (Zimbabwe) was described and an appraisal of the sectorial contribution of agriculture to the Gross Domestic Product was undertaken. The Chapter also covered the Statement of the problem, research question, objectives, purpose of the study, the significance of the study, assumptions, limitations, delimitations and definition of terms.

Chapter 2 focused on the review of related literature on agriculture in the Zimbabwean context. It also looked at entrepreneurship relevance in agriculture drawing insights from the colonial era to the current agricultural activities. This chapter also covered an overview of key agricultural activities and their agricultural performance relevance to the Gross Domestic Product. It also covered the provincial overview of agricultural activities drawing out the potential scope of entrepreneurial adoption of the inherent farming patterns. There is also a section which covered challenges facing farmers in their adoption of entrepreneurial competences.

Chapter 3 The chapter sought to link key theories to the constructs of entrepreneurial competences in the conceptual framework. Theories help to understand research phenomena and to predict research outcomes. They also entail viewpoints by other researchers and their scholarly thrust or opinion. The discussion looked at empirical studies which relate to the focus area of the study.

Chapter 4 focussed on research philosophy, research strategy, research design, population and sampling, research instruments, data collection procedures, data analysis and presentation methods, reliability, validity and the procedure

Chapter 5 This chapter comes up with findings pertaining to the set research objectives and hypothesis of the study. The data was analysed through quantitative methods.

Chapter 6 summarized, concluded the research and gave recommendations based on the findings of the whole study.

1.9 CHAPTER SUMMARY

This chapter gave the introduction and the background of the study. It then gave the statement of the problem, research objectives, research questions, significance of the study, scope of the study, ethical considerations and the structure of the thesis. The next Chapter is the literature review

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The previous chapter gave the introduction and the background of the study, the statement of the problem, research objectives, research questions, significance of the study, scope of the study, ethical considerations and the structure of the thesis. This chapter reviewed literature on entrepreneurial competences and agricultural performance focussing on farms as a business unit. It also looked at entrepreneurship relevance in agriculture drawing insights from the colonial era to the current agricultural activities. This chapter also covered an overview of key agricultural activities and their agricultural performance relevance to the Gross Domestic Product. It also covered the provincial overview of agricultural activities drawing out the potential scope of entrepreneurial adoption of the inherent farming patterns. There is also a section which covered challenges facing farmers in their adoption of entrepreneurial competences.

2.1.1 Who is a farmer? A Zimbabwean Context and Beyond

A farmer is an individual engaged in agricultural activity such as raising livestock and growing crops. Munoz (2010) sees a farmer as a business person who may own infrastructure, equipment and land being a superintendent to employees called 'farm workers' and engaged in the activity of raising livestock and crop production. McElwee (2006a) posits that farmers are those individuals who expend their energy either part-time or full time in a range of activities that hinge on the farm and agricultural practices of tilling the ground for crop production and rearing livestock as their core income generation source.

The role of the farmer is changing globally as farmers adapt and become competitive embracing a culture of being entrepreneurs. There is indeed a growing trend of farmers who now focus on management and business capability. Farmers as entrepreneurs are being recognised by policy makers with emphasis on the advantages of value-added agriculture to the GDP. Farmers have become key decision makers in the political, social and the economic spheres (McElwee, 2006). Kange'te and Serima (2014), note that in Africa, the agricultural sector shapes the economic development of most countries contributing a significant portion of the GDP. They also note that the main driver of the agricultural economic activity is the small scale farmer contributing 90% in Africa as a whole. As part of changing roles, Alene and Hassan (2003) from an Ethiopian study noted that farmers have been adopting new production technology thus improving their livelihoods. Faria and Mixon Jar (2016) concur through the observation that farmers have

become more attentive to new technologies, embracing assistance from extension services, cognisant of price volatilities, availability of finance facilities and are more inclined towards risk taking. They now look at efficiency, profitability and are more receptive to innovation and integration with external partners.

Turning to the subject country, Zimbabwe has three farmer categories namely small-scale, medium scale and large-scale farmers. The small-scale farmers are further subdivided into communal farmers and smallholder farmers. The Government of Zimbabwe recognises smallholder farmers as subdivided into sectors namely communal lands, small scale commercial farming, Old resettlement area farmers and A1 farmers (ZIMSTAT, 2019). Muchesa, Nkosi, Zwane and Van Niekerk (2019) citing Classens (2008) defines communal farmers as those carrying out farming activities in areas classified according to the Communal Land Act [Chapter 20:04]. These areas were once designated as Tribal Trust Lands in the colonial era. This sector constitutes 50% of the farmer category in Zimbabwe. Communal farmers have common characteristics such as mixed farming of both crops and livestock. They have low specialisation and food crops are always grown alongside cash crops especially in the high rainfall areas. They depend largely on their own food production and rarely sell any surplus (Marongwe, Kwazira, Jenrich, Thierfelder, Kassam and Friedrich 2011).

Small holder farmers under the Fast Track Land Reform resettlement scheme (FTLR) between 2000 and 2009 were allocated between 3-6 ha of arable land and the rest of the land was set aside for commercial grazing. These small holder farmers were designated as A1 farmers (Obi and Chisango, 2011). The other group on the farmer categories, under the FTLR, is the medium scale whereby some farmers were allocated larger plots of land above 6 ha and they were distinguished by their farming capacity, capability and the ability to repay the cost of the farm. These were designated as A2 farmers (Obi and Chisango, 2011). Shonhe (2021) points out that these are neither small scale nor large scale farms mostly defined by the Model A2 scheme. The agricultural activities are mostly commercial. The applicants for allocation had to produce sound business plans, proof of aptitude in farming, adequate capital among other specific requirements. However, others were allocated the farms through a political process notwithstanding that the initial idea was to allocate the farms on a technocratic basis.

Lastly there are the large scale commercial farmers who are characterised by large swathes of land normally above 1,000 hectares, high capital set-ups, skilled workforce and labour intensive crops. There are mostly into cash crops such as sugar, forestry, ranching, coffee, tea, cotton, wheat and horticultural activities (Muir- Leresche, 2006).

2.1.2 The History and Development of Agriculture in Zimbabwe

Prior to independence, agriculture for the indigenous peoples was characterized by communal farming. In this set up an individual has rights to a dwelling place (home), garden and fields with a perpetual occupation by the family. These were categorized as tribal trust lands by the colonial government. The production pattern is peculiar to consumptive interests with maize and millets constituting the most common and the staple food. The cropping season is linked to the prevailing rainfall pattern commencing in November/ December with the harvest expected between January and April (Agriculture Marketing Authority, 1990). There have been several land redistribution activities in Zimbabwe from 1980. Masiyandima, Chigumira and Bara (2011) note that between 1980-1990 land redistribution was carried out on a willing buyer willing seller arrangement. This system was superseded by the Land Acquisition Act which was in operation between 1990-1997. These programs were aligned in favour of large scale white commercial farmers who were 1% of the total population and they owned 49% of the arable land. In comparison the indigenous farmers owned 51% of the arable land and constituting 99% of the country's population. Thus, the slow pace of the land redistribution and agitation among the indigenous peoples saw the introduction of the Fast Track land Reform Program (FTLR) in 2000.

Moyo (2011), notes that the land issue was a contentious matter well before the land reform programmes leading to a protracted war then independence. The government adopted a willing buyer-willing seller approach ostensibly as per Lancaster House (1979) negotiations which brought ceasefire and independence. The Government of Zimbabwe notes that 6,000 settler farmers occupied 51% of farmland and over 700,000 indigenes occupied 42% of tribal trust lands. The Lancaster House Constitution expired in 1991 coming on the backdrop of an Economic Structural Adjustment Program (ESAP). Whilst this had a macro-economic trajectory, it also had agricultural implications in its implementation. The Government embarked on a program to resettle 100,000 families on 5,000,000 hectares. The criteria for resettlement was towards trained agricultural graduates, competent farmers so as to maximise productivity. However, ESAP had a negative effect on business and agriculture was not spared either. The period also saw the impact of the macro-economic policy on agricultural discrepancies in the exchange rate which was overvalued by between 50%-80% leading to a low product domestic value. This led to economic issues such as a dissatisfied populace creating a political problem. In retaliation to malcontents at that time, the government in November 1997, gazette 1,471 farms for compulsorily acquisition.

In previous research Weiner (1998) notes that post-independence in 1980, redressing historical imbalances became a priority for development. This entailed the adoption of a land redistribution program. The approach in 1980 was conservative cognizant of the fear to disturb the prevailing production patterns and the need not to rock the economy. A limited indigenous contingent of farmers mostly from the middle class coexisted with the historical endowed white farmers. The results were slow and the political pressure to redistribute the land kept on increasing.

On one hand the results were astounding as the maize and cotton production more than doubled and greatly made in impact on the GDP by 1987. This strategy improved the economic growth and food security. Moyo (2011), concurs on the effectiveness of the 1980s redistribution which brought the indigenous people into mainstream farming. The research then showed that there was an upward trend in agricultural production in both commercial and communal farming. On the other hand, empirical evidence showed a below expected performance by newly resettled farmers in the 80s in other non-cropping agricultural activities. There seemed to be negative returns for the newly resettled farmers in Natural region IV and V. Succinctly put, the new farmers had very low herds to warrant resettlement. Thus, the output betrayed the political rhetoric. Funding was also a constraint for the resettled farmer. However, through re-investments of profits, many farmers have been able to build sizeable herds and to get equipment.

The government on noticing the capacity inadequacies of the resettled farmers embarked on extension services. Empirical evidence showed that this led to an adoption of new and effective farming methods and technologies as evidenced by uptake of hybrid maize varieties. Other researchers have bemoaned the extension services focus on production rather than marketing (Moyo 2011). Mazwi, Chemura, Mudimu and Chambati (2019) note that in 2016 the government set up the special maize import substitution program to stimulate domestic maize production and to reduce the food import bill. The program involved a contract farming scheme targeting all types of farmers. This innovative program was an attempt by government to ensure food security through contract farming.

The government then launched the Fast Track Land Reform Program, (FTLRP) that saw the replacement of over 4,500 large scale white commercial farmers with more than 130,000 indigenous households (Mazwi et al, 2019). Notably this action though a redistribution for land which historically had been obtained from displacing the indigenous peoples, created a backlash of economic and political magnitude. This was manifested by strains in bilateral relations with global financiers and other ‘western’ countries (Moyo, 2011). The government had no option but to come up with intervention policies to prop up the under siege FTLRP. There was a huge risk

of political dissatisfaction and an unprecedented meltdown of the economy. As observed by Chinsinga (2010) food security is intricately linked to politics and any deviation results in political instability and unpopularity of the government of the day.

Capital was needed and it had to be obtained fast. Thus, in order to attract the international capital, the government adopted the 'Look East Policy' in 2009. This saw an interest by the Chinese in the tobacco farming sector leading to a 'tobacco boom' and the re-emergence of cotton contract farming (Sachikonye, 2016). The same revival occurred in sugarcane where contract farming commenced (Moyo, 2011). This then created an adverse and unintended effect as farmers opted to 'follow the money'. Production of staple foods such as cereals dropped due to lack of private capital. Moyo (2011) gives empirical evidence showing that the maize production was down by 65.8% in the 2007-2008 agricultural season.

This decline in maize production was further compounded by challenges such as drought, erratic inputs availability among others. Thus, faced with a food security challenge and political instability, the government embarked on contract farming initially financed by the Reserve Bank of Zimbabwe. Pazvakavambwa (2009) sadly notes that this program was quickly abandoned in 2008 at the height of hyperinflation and side marketing by farmers. The Reserve Bank of Zimbabwe further intervened through a farm mechanization and inputs scheme in 2010 to capacitate the resettled farmers and the program was also discarded.

In 2016, the Targeted Command Agriculture Program (TCAP) was launched led by a partnership between government and a fuel supplier called Sakunda Holdings and other Agro-companies. Despite TCAP implementation and operational challenges Mazwi et al (2019) notes that maize yields increased and surpassed the national requirement for human consumption by 139%. Thus, the TCAP seems to have had a positive impact on productivity. The main challenge to higher yields was due to late input supply, unsuitable varieties for certain agro ecological regions among other ills. This program is still ongoing as at the period of this research.

2.1.3 Agriculture Revolution in Zimbabwe beyond 2000

From the year 2000 onwards, the Zimbabwean agrarian structure had a radical change. Scoones, Marongwe, Mavedzenge, Murimbarimba, Mahenehene and Sukume (2010) notes that in 1980, 15 million hectares were exclusive to large scale commercial farmers and the FTLR reduced these by 7.6 million hectares. This created small scale farms focusing on mixed farmers with low levels of capital. This radical allocation of land brought some challenges attributed mostly to 'teething' issues. Scoones et al (2010) further observed that any radical change entails a

transitional phase, as the production, markets all readjust to the new set up. As such the agrarian revolution is no exception. Chavunduka et al (2020), point out that the key objectives of the land policy were to address equity and social justice matters through attending to historical inequalities which distributed land on the basis of race, gender and social considerations. The other objective was to promote land efficiency by encouraging the productive use of land. Redistributive land reform broke down the territorial and social segregation of communal farmers allowing a free movement of people, goods, services and livestock. It also altered the social relations of production by decimating the cheap labour system entrenched in the colonial compulsory recruitments often exploitative to the now better working conditions (Moyo, 2011).

In this transition stage, crops such as wheat, tobacco, coffee all declined in production whilst small grains normally associated with subsistence farmers such as sorghum and millet increased (Mazwi et al, 2019). These findings indeed are a sharp contrast to negative perceptions in the media where the decline in commercial crops is equated to the failure of the land reform. On the contrary, empirical evidence points to an improvement on some crops such as 163% for sorghum and millet. In fact Runganga and Mhaka (2021) point out that agricultural production seems to be having a positive effect on the national economic growth in the short run. This view is also shared by Mapfumo (2013) who attests that specific crops such as tobacco, maize and cotton have had a positive impact on the Zimbabwe economic growth in the period 1980-2010 despite land reformation downside issues.

Table 2.1: Production of food security crops (in "000" tonnes)

Crop/Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Maize	2065	1 552	1 195	1 606	1 545	1 476	605	1059	1 400	750	1 485	953	575	1 240	1 328	1452
Wheat	263	255	242	261	230	198	195	122	247	229	241	149	34	48	41	53
Soybean	97	97	116	121	99	175	84	41	85	50	70	102	48	115	70	84
Sorghum	90	64	39	56	84	60	22	71	129	162	101	75	75	181	132	95
Sunflower	28	19	142	123	18	32	5	17	20	14	21	26	5	39	14	12
Groundnuts	68	124	46	80	114	172	59	141	150	150	83	125	131	216	186	231

Source: Adapted from Comprehensive Agricultural Policy Framework (2012-2032). Government of Zimbabwe

Table 2.2: Production levels for cash crops (in "000" tonnes)

Crop/Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Tobacco	177	178	171	226	197	198	208	173	94	68	74	55	80	56	59	123
Cotton	56	229	273	274	303	304	282	190	228	333	198	260	235	226	211	260
Sugar					541	514	580	502	422	429	429	447	349	298	259	334
Horticulture	34	41	46	54	63	64	78	82	75	57	60	64	66	60	35	43

Source: Adapted from Comprehensive Agricultural Policy Framework (2012-2032). Government of Zimbabwe)

Moyo (2011), tackles the FTLR from a non-political perspective when he argues that the outcome has been progressive and the dominant objective of resettling landless locals has been achieved. The food and export production base has been broadened though plagued by inequalities on access to inputs. The main challenge has been the practical aspect due to the difference between policy and implementation. Mazwi et al (2019) notes that the targets remain elusive. However, the various government interventions have created an assurance on the availability of a market. The major buyer for agricultural products such as maize is now the government as they stem food imports through capacitation of farmers. This has a downside in that the government prices are lower than private buyers. This pricing challenge then triggers labour shortages as farmers cannot pay the 'asking' wages due to the depressed revenues.

Mkodzongi and Lawrence (2019) notes that the agricultural revolution through the FTLR is ongoing with farmers resorting to self-finance from sales of produce, personal savings. Mazwi et al (2019) pointed out that contrary to media perceptions there is no empirical evidence of a chaotic FTLR, rather occupiers deployed legal bureaucratic means to formalize their stay on the land. Thus, in essence, the agrarian revolution has been an opportunity for the communal and peasant farmer to diversify their livelihood and be part of a competitive market (Mkodzongi and Lawrence, 2019). In order to bolster confidence in agricultural investments, the government offered 99-year leases. As observed by Chavunduka et al, (2020), this is a positive move in the agrarian revolution in that it assures investors that eviction risks are minimal. The duration of the lease has the capability to enable an investor to recoup their capital outlay. This should stem the decline in the agricultural contribution to the GDP due to lack of surplus and further leading to a contagion effect whereby the manufacturing sectors have also been in decline.

2.2.0 Overview of key agricultural sectors

2.2.1 Maize production

In Africa, the most popular and common grain is maize and it is also the staple food in Zimbabwe. It is a strategic commodity and is a core pillar of food security with an impact on the staple diet and also economic aspects as in stock feeds. Though maize production is affected by recurrent droughts, pests and diseases, post-harvest losses, farmers continue to prioritize maize production (AUDA-NEPAD, 2022). The contribution of small holder farmers has been of critical importance to meet government targets in food security interventions. With maize a yield of 5tonnes/hectare is regarded as economic. However, smallholder farmers cannot match that though Moyo (2011) pointed out that with the necessary support, both technical and financially, their capability is a certainty. Despite such an optimistic or positive trajectory in terms of policy, agricultural productivity has been negatively affected by drought. The 2015/16 seasons had a massive agricultural output fall due to El Nino Southern Oscillation natural catastrophe. As such rain fed maize is increasingly difficult to produce in areas such as the southern and western Zimbabwe. The smallholder farmer is more vulnerable to drought risks due to a lower capacity to mitigate the effects (World Bank, 2019).

To be food secure, Zimbabwe needs 2.1 million metric tonnes of maize. Chikobvu, Chiputwa, Langyintuo, La Rovere and Mwangi (2010), note that the production remains rain fed predominantly thus there have been efforts to grow drought tolerant varieties to mitigate the production challenges. Thus there is a noticeable shift in technology towards the adoption of drought tolerant maize varieties. Adoption of drought tolerant varieties in the Chiredzi area has seen an improvement in harvests. This has impacted positively on food security and also promoted better household incomes through savings from the opportunity cost of buying food during drought or crop failure periods (Lunduka, Mateva, Magorokosho and Manjeru, 2019).

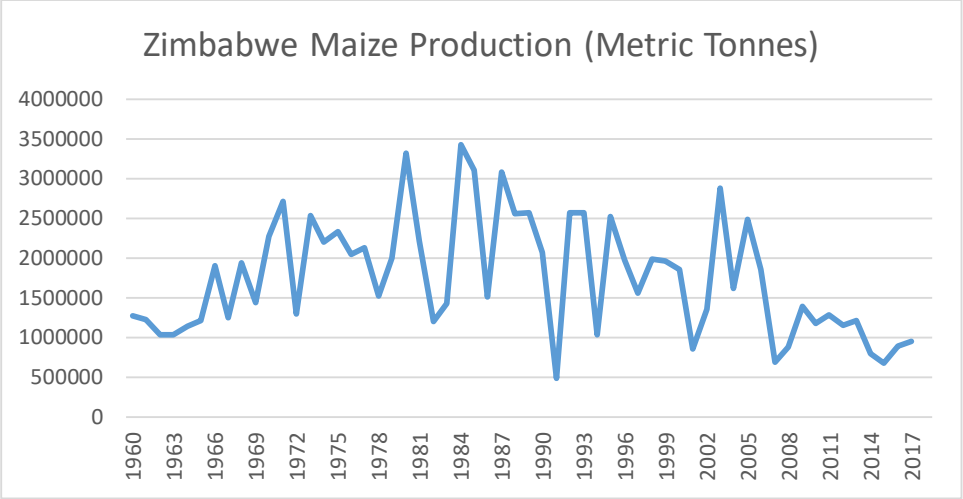


Figure 2.1 Zimbabwe Maize Production

(Adapted from World Bank Global Cereal Production, 2022)

The issue of low producer prices for maize has created a parallel market from 2000 also called side marketing. In order to counter that, government introduced statutory instrument 235A of 2001 which declared maize, maize products, wheat and wheat products as controlled commodities in Zimbabwe and established the Grain Marketing Board as the sole buyer of such products (Scoones et al, 2010). The GMB had challenges paying on time and hence from then to date and it thus not been effective. Due to resistance by farmers the government banned the holding of grain by farmers in 2002 and any grain on private farms was seized.

2.2.2 Dairy Sector

Dairy products contribute 0.3% of the total GDP. Chirinda, Murungweni, Waniwa, Nyamangara, Tangi, Peters, Notenbaert and Burkat (2021) note that small holder farmers practice dairying for household consumption and sell the excess production as an agriculturally entrepreneurial activity informally. Thus their production contribution to the national milk pool is very negligible. They also note that large scale farmers contribute more than 95% of the national dairy pool using mostly high yield exotic cattle breeds such as Holstein-Friesian breeds, Red Dane, Jersey and Gurnsey breeds. From the onset of the land reform programme, milk production fared better as DZL was able to export to Malawi and Kenya in 2000. Phiri (2014) notes that sadly the rural dairy industry has not been able to get established due to capital costs and viability challenges. Research by Chari and Ngcamu (2017) noted that the dairy sector has lagged behind in the agricultural revolution. Between 2000 and 2010 there was no clear national policy to promote dairy farming. As such there are significant shortfalls in national requirements. Chamboko and

Mwakiwa (2016), noted that the national requirement for raw milk in Zimbabwe is estimated at 10 million litres per month as from 2011 giving a shortfall of 5 million litres per month.

The FTLR precipitated a decline on milk production and the capital intensive nature of the industry saw dairy cows being sent off for slaughter (Chamboko and Mwakiwa 2016). However, Mpofu and Sauti (2014) took note that in 2009, the dairy sector began to resuscitate largely on the backdrop of dollarization of the currency. The year saw 233 registered dairy operators holding a herd of 26,000 livestock with 12,000 in milk. Further research by Washaya and Chifamba (2018) attribute the low milk production among small holder farmers to low extension support by government, non-participation of farmers in production planning. Zimbabwe Farmers Union (ZFU 2022) reports that dairy companies such as Dairiboard Holdings, Nestle Zimbabwe and Dendairy have introduced farmer capacitation programs such as heifer importation and distribution networks. From June 2015 to October 2020, USAID started the Feed the Future Zimbabwe Livestock development programme in support of smallholder dairy programme. Due to these interventions, production has risen from 54 million litres in 2014 to 77 million litres in 2020 though still at 50% of national target (ZFU, 2022). Chirinda et al (2021), notes that the private sector interventions have contributed to a slow increase in milk output. They recommend that the milk deficit challenge can be mitigated by supporting value chain interventions through shifting focus to the small and medium scale dairy farmers.

2.2.3. Beef Sector

In Zimbabwe beef is produced under three farming systems and Bennet, Chakura, Figue, Vigne and Katic (2019) describe them as fully communal, partially communal/ commercial and fully commercially. These farming systems hold an estimated herd of 5, 5 million cattle. Beef is produced across all the classes of agricultural activities in Zimbabwe. The national beef herd is in excess of 5.5 million with mostly the communal farmers topping the production chart. Research has shown that beef production is a major economic activity. Due to its role as a component of the diet its demand despite increasing prices is never in doubt. Mashoko, Muchenje, Ndlovu, Mapiye, Chimonyo and Musemwa (2007) note that beef has both an economic benefit and food security role. In this regard beef cattle has nutritional and social value in addition of financial security an observation noted by Garwi (2022). Bennet et al (2019) note that most of the cattle are slaughtered for local consumption. They also note that beef production constitutes 27% of the agricultural value chain.

The beef export industry experienced a decline due to depressed orders from the European Union bloc. In essence, traditionally cattle are an integral part of Zimbabwe agriculture. The cattle

population is 89% in favour of communal areas relative to commercial farmers (Assan, 2012). However, the communal farmer's monetary benefit is rarely explored due to the emphasis on non-monetary standards and no entrepreneurial focus. Chimonyo, Kusina, Hamudikuwada, Nyoni and Ncube (2000) note that the communal farmers consider the value of cattle on factors or standards such as manure production, draught power and milk. Cattle also have a socio-cultural role for dowry (lobola) and can be exchanged or loaned to neighbours to strengthen kinship (Mavedzenge, Mahenehene, Murimbarimba, Scoones and Wolmer, 2006). Maburutse, Mutibvu, Mbiriri and Kashangura (2012) points out that cattle are also a source of food and are a status symbol and a store of wealth. Whilst one would expect communal areas who constitute the bulk of cattle in Zimbabwe to thrive in the agricultural revolution, Tavirimirwa et al, (2013) observed that productivity is still limited though not dismal by constraints such as high disease prevalence, poor reproductive technology, feed challenges and adverse marketing. Bennet et al (2019), further note that the quality of the herds has deteriorated as reflected by a fallen average animal size, decreased average carcass weight (from 200kg/ animal to 167 kg/ animal) mainly due to holding the animals longer and an increase in traditional breeds and lastly the decline in weaning rates.

Bidi, Dube, Khombe and Assan (2015) observed that the communal cattle herd has a small contribution in the formal beef market despite holding a significant segment of the national herd. They further observed that post 2000, there emerged improved breeds of the communal herd due to cross breeding with studs from commercial farms. This has seen an increase in herd size and quality in communal areas. They also recommended the need for technical support to maintain the genetic improvement programs. This has the potential to boost the cattle market. The Food and Agricultural Organization (FAO, 2016) concurs with this observation noting that communal farmers who are empowered to grow more food are capable of earning higher incomes and improved livelihoods.

The Government of Zimbabwe came up with a four-point plan in 2004 to better manage cattle production. Firstly, they advocated for the small holder farmers to become commercialized to focus on livestock production and sales rather than keeping. Secondly government recommended that the Cold Storage Commission be resuscitated as a meat processor through utilization of existing infrastructure. Thirdly the government recommended product beneficiation and value addition of livestock products such as hides for exports to regional markets and beyond. Lastly the government imposed high standards of on-farm management, livestock health controls and veterinary measures so as to match import countries requirements (GOZ, 2004).

The core thrust of the policy is to support integration of small scale farmers so that they participate in the formal market chain. In essence this policy encourages a business approach into cattle management and this is of interest in this study. Further research by Sibanda, Khombe and Sisito (2014) showed that production in A1 and A2 farms was dependent on good cattle management, genetics, tenure and training. This resonates with the earlier expectations of the National Livestock Policy Document, October, (2004). Their research showed that A2 farms had higher birth rates and lower mortality rates due to impact of extension services and grazing area expanse.

2.2.4 Tobacco Sector

Harold (1983), observes that tobacco growing predates British colonisation as the locals cultivated it for recreational purposes. Holder- Wiliams (1983) further notes that the early colonial settlers then commercialised tobacco growing modelling it on the already successful and established American production methods. Tobacco now contributes 11% of the national GDP and is a major employer and foreign currency earner in Zimbabwe. Tobacco production has become a wealth creator for small scale farmers in Zimbabwe. This has been made possible through contract farming by farmers and organized sales through auction floors and direct sales. It has been a foreign currency earner post 2000 reaching 22.54% of exports in 2011 becoming a strategic crop. Scoones et al (2018) notes that pre 2000, tobacco production was at 200 million kilograms per annum. However, by 2008 it had dropped to 48.7 million kilograms. Fast forward to 2014, tobacco production made a dramatic rebound to 216 million kilograms. Due to politically induced sanctions, from 2000, Western buyers began to pull back but Chinese companies such as Tian Ze took advantage of the gap and entered the market quickly cementing their position through contract farming to all classes of farmers.

Zimbabwe Tobacco Revenue

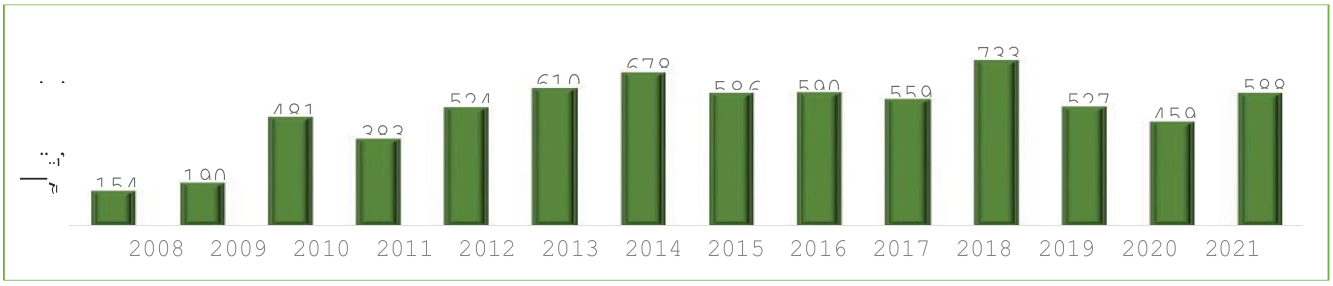


Figure 2.2 Tobacco Revenue USD millions (2008-2021)
Source: Zimbabwe Tobacco Research Board (2022)

The sector has remained resilient despite a spirited campaign against cigarettes by the WHO. The demand has also been affected by quality demands by Chinese buyers who had previously been non -specific on quality (TMA, 2015). Studies carried out in Mvurwi area by Scoones et al (2018), though the research may not exactly be extrapolated to a national outlook, however show a resurgence of tobacco production with evident change in livelihoods through accumulation of assets such as farm equipment, building homes, cattle buying, employment creation and growth of towns. As a result of contract farming, tobacco growing has been actively taken up by communal farmers a digression from the pre land reform era where it was the preserve of a few commercial farmers. Tobacco growing has spread to other provinces such as Matebeleland North and South which has not been the norm before and it is practised under irrigation. TIMB (2018) further notes that traditional tobacco areas have been Mashonaland Central, East and West provinces and Manicaland who have also experienced a massive uptake on tobacco growing.

Tobacco Production and Price Trends

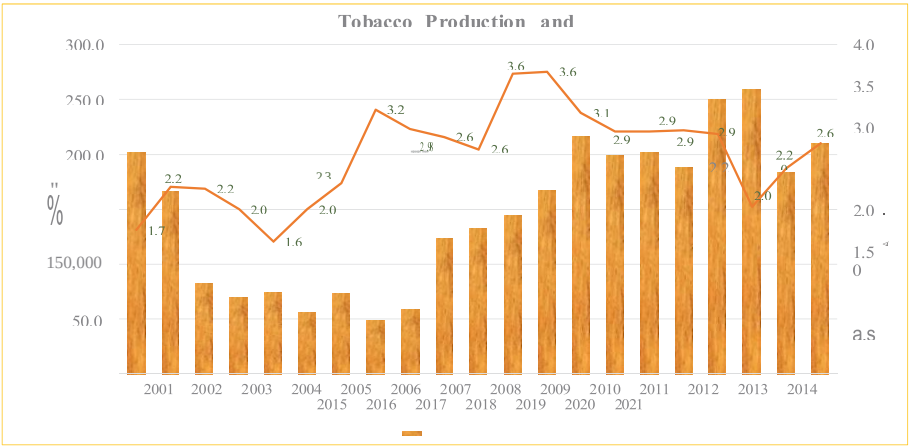


Figure 2.3: Tobacco Production and Price Trends
Source: Zimbabwe Tobacco Research Board (2022)

Scoones et al (2018) notes that the major incentive for farmers taking up tobacco production rather than maize is the 'cash on delivery' set up whilst for maize the payments from the GMB are delayed. They further view tobacco production as an agrarian reform (FTLR) success story despite vilification of the land reform policy. The empirical evidence is still hard to find due to the limitations of present research. In terms of increasing the number the number of players from about 2,000 settler farmers to more smallholder participation estimated at 90,000 currently from

64,000 in 2011, (TIMB,2011), Scoones et al (2018), Ngarava (2020) see the tobacco sector as a success and central to the land reform. Chingosho, Dare and Van Walbeek (2021) noted that between 2016 and 2018 the number of smallholder tobacco farmers increased by 42% culminating in a 29% increase in tobacco leaf production. This increase was arguably on the backdrop of the Chinese market involvement. However, on the financial side, Chingosho et al (2021) showed that 60% of the tobacco smallholder farmers were unhappy with earnings from contract farming as they are heavily in debt. Their study was centred in Manicaland Province in Eastern Zimbabwe. Thus, they implore the government to intervene over the economic considerations of the farmers so as to maintain the prevailing upward trend momentum.

2.2.5 Challenges in agricultural entrepreneurship in Zimbabwe

There is vast literature covering challenges in agricultural entrepreneurship both global and in Zimbabwe. This section specifically looked at the Zimbabwean setting and circumstances. The researcher found out some prominent challenges though not exhaustive such as finance constraints or challenges, inadequate training, marketing and competition challenges, land tenure, equipment and infrastructure challenges. There is need for interventions by government and the private sector to mitigate against the challenges. This study focus is on modeling entrepreneurial competence areas as a strategy to improve agricultural performance. Pursuant to this objective, the researcher contends that the highlighted challenges need to be addressed strategically as they have an impact on the entrepreneurial process. Mtisi, Dube and Dube (2017), posit that challenges have a similar meaning to problems, obstacles and constraints faced by the interest group, in this case farmers.

2.2.5.1 Financial Challenges

Mazwi et al (2019), noted that before the land reform exercise, agriculture in Zimbabwe was financed by the government through the Agriculture Finance of Zimbabwe which catered for communal and small scale farmers whilst private commercial banks and the state dealt with commercial farmers. On commencing of the land reform, the private capital stakeholders withdrew their support. Agriculture by its nature is a complex undertaking with various materials and production demand which then discourages financial institutions to provide credit and insurance facilities in a sustainable manner. Thus, there is a latent challenge in managing the costs and risks. Also, farmers despite the need for financial backup may be reluctant to take loans due to prohibitive interest rates which renders such loans unsustainable as observed by Meyer (2013). Saghir (2014) notes that some financial institutions feel risk can be managed through insurance and collateral arrangements. Citing the World Bank (2013), Saghir (2014)

sees the private sector as a vital cog in facilitating agricultural financing and that they have the capacity to develop a package that can be of mutual benefit as the farmers will be treated as clients rather than borrowers.

Research by Mujuru (2014), in Dotito (Zimbabwe) showed that respondents were facing lack of finance to improve roads so as to transport their produce to markets. The lack of finance also hampered productivity during the dry season as they could not acquire enough pipes to cover their irrigable areas. Derera (2015) citing Hadebe and Mpofu (2013) further concurred that women in urban agriculture had a challenge of financial resources to procure inputs. Earlier studies by Nani (2011) showed that entrepreneurs in Zimbabwe faced a challenge in accessing loans due to lack of collateral. Though the study focused on women entrepreneurs, the findings resonate with agricultural entrepreneurs as concurred through research by Mtisi et al (2017) in Matabeleland North, Zimbabwe. Mtisi et al (2017) pointed out that financial resources could be there but there are barriers to access the capital due to stringent collateral requirements. Guta, Vhudzi and Chazovachii (2017) conducted studies in Zaka and the findings showed that farmers ended up 'devouring' whatever capital they had leading to sustainability problems. There is undercapitalization and the socio-economic challenges overrun the farm activities such that even if produce is sold, they cannot devolve on consumption of interest or profit. Munyoro and Chimbari (2019) also noted that agricultural entrepreneurs lack a clear understanding on how loans work especially on interest obligations. They advocate for a saving culture though the macro-economic environment may lead to consumption of the savings as found out by Guta et al (2017) due to inflationary pressures and general economic instability.

Lack of finance can demotivate entrepreneurs especially due to the demands of financiers which seem to be in favour of the affluent (Parmar, Ahmed, Streinikiene and Streimikis, 2022). Mutami (2015) also notes from a Zimbabwean context, the offer letters are not acceptable by financiers as collateral. The farmers need finance for sustainable production and it becomes a challenge to be progressive against a weak balance sheet. Studies done in Chiredzi by Unganai and Murwira (2010), show that lack of credit or finance facilities impact negatively on ability to source inputs timely resulting in farmers adopting traditional varieties instead of hybrid seeds. This leads poor yields especially on drought years. Other studies by Mutambara (2016a) concur noting that 57% of respondents cited finance as the major stumbling block in accessing agricultural inputs in smallholder irrigation schemes in Zimbabwe. Masiyandima, Chigumira and Bara (2011) note that the financiers are reluctant due to a perception of immeasurable losses due to natural catastrophes. There is a challenge to obtain adequate insurance against such perceptions and

to determine a premium against the same. Ordinarily land would be sufficient as collateral, but the land belongs to the state thus banks are hamstrung on how to extend credit on land collateral due to ownership and transferability issues. Lack of money to obtain agricultural input continues to be a major setback in small scale farming (Kang'ethe and Serima, 2014). The financial challenge also affects at government level in that developing countries may have the appropriate policies in place but may fail to finance initiatives to promote agricultural entrepreneurship at country level (Saghir, 2014). On further observation financing should be primarily a private sector function and there should be a buy in on the potential benefits of agricultural financing. The private sector needs to view agriculture as a pathway to reduce poverty and to boost macro-economic prosperity (Saghir, 2014). Mtisi et al (2017) argue in that there is no lack of finance rather there is an access to finance challenge. There are barriers to access to finance such as stringent collateral and the reluctance of financiers to venture towards rural and agricultural sectors.

2.2.5.2 Inadequate Training Challenge

Nani (2011) identifies lack of training as a challenge for entrepreneurs. Training is critical for success in management competences. Munyoro and Chimbari (2019) citing Kahan (2012) concur that a healthy farming sector must be supported by adequate training of farmers. The training should balance technical skills and knowledge. Earlier research by Charney and Libecap (2000), emphasized that entrepreneurial training increased the estimated probability of a trainee succeeding in a business venture by 25% and such training became an important determinant for one to be consistent in a business venture. Zerssa, Feyssa, Kim and Eichler-Lobermann (2021) noted that lack of knowledge among farmers is a hindrance to agricultural performance. Due to various agro ecological zones, skills applicable to one area of the country may be irrelevant in the other part for the same agricultural activity. They further note that farmers are reluctant to adopt new technologies before they see their efficacy and they also need clear assurances of the benefits and risks. In 2010, 60% of Zimbabwean farmers were growing crops they had not been trained to produce. The knowledge came from self-study and peer learning. By inference, this poses a challenge in that the farmers are not exposed to new research or new curriculum developed from specific training (Maiyaki, 2010). However, Unganai and Murwira, (2010) proffer a solution to mitigate this challenge by recommending that the authorities can train 'mother' farmers so that they can extend their training and knowledge to their 'babies' thereby setting up field schools.

Derera (2015) asserts that training on better agricultural practices has the capacity to increase productivity. Mtisi et al (2017) citing several African Studies note that enterprises run by individuals with vocational training outperformed operated by non -trained. Mutambara and Munodawafa (2014) in studies conducted in Chiredzi noted that low literacy levels resulted in many farmers not participating in training programs being conducted to help improve production. Comparatively studies done in Mtandahwe area, which has a significant higher level of education, showed 99% horticultural production improvement after training. These studies also showed that farmers had very little knowledge on the operation and basic maintenance of water pumps. They argue that training in equipment maintenance is critical for instilling institutional memory on such skills rather than relying on external technicians. Therefore, training is a capacity building tool where knowledge can be passed on to the farmers towards an improved Agricultural Performance. Training has to start with extension services personnel who will then adopt the technologies before dissemination to farmers. They are critical as a bridge between researchers, innovators and farmers (Agyei and Stringer, 2021).

Thus Mutambara (2016b) emphasizes on studies conducted in irrigation farms, that farmers must be trained to approach the activity as a business (entrepreneurial approach) and to develop a business mentality in their operations. This view resonates with earlier assertions by Mutema (2012) who implored the government to embark on farmer training so that the beneficiaries of the FTLR would perform profitable. Carlisle et al (2019) emphasizes the need for the farmers to undergo training so that their skills are bolstered and there is sustainability in the farming industry. Retraining is also necessary for established farmers so that they can adapt to new technologies such as renewable energy and access to agro ecological education. This ensures that farmers will utilize what they have learnt for the long term. Pawlak and Kolodziejczak (2020) concur that extension and training programs have the capacity to improve Agricultural Performance and thereby improving food security. Trukhachev, Bobrishev, Khokhlova, Vashova and Fedisko (2019) sees training as critical for farmers to adopt new technology such as the digital economy which is fast evolving such that innovations become redundant in no time as new products take over. However the education capacity of farmers often remains static thus farmers fail to adapt. This view was posited earlier by Masvongo, Mutamabara and Zvinavashe (2013) who noted that training induces better decision making, adoption of production and appropriate technology and the following of general acceptable practices. For highly specialised crops such as tobacco whose yield and quality are maintained with precision, training has an unparalleled influence. This is the view also shared by Kang'ette and Serima (2014) who note that training mechanisms

equip farmers with requisite skills and knowledge that enable the maximisation of production that is sustainable giving them a chance to adopt technological methods that aid production.

Training is indeed a necessity and Sancho (2010) points out that it should be based on less structured courses and be more inclined to practical solutions adaptable to the communal farmer who comprise the bulk of farmers making it possible for them to interact with the business world. Moyo (2010) further concurs and supports the training of farmers in better marketing strategies so that they appreciate the value of their efforts and products so as to enable a deserved return in terms of prices, thus protecting them from predator buyers. Msipah, Chavunduka, Jengeta, Mufudza and Nhemachena (2013) on Zimbabwean studies in the mining sector, concurs by advocating for sustainable entrepreneurship whereby there is promotion of sustainable livelihood through development that meets present needs without compromising the capacity of future generations to meet their attendant needs. They further emphasise continuous training in the skills gap which will in turn promote the viability and survival of the business. They further elaborate by pointing out that training in entrepreneurship ensures the business owners and managers acquire the requisite skills for developing the change demands encountered in their businesses.

Whilst training is of paramount importance, research by Wallace and Nilsson (1997) showed that training programmes in existence then seemed to sideline women despite their responsibilities in farming. They posit that the curriculum for farmer training programs must be gender- sensitised to reach more women farmers. The researcher concurs with this view with special emphasis on the communal farmer where most households are managed by women and the elderly.

2.2.5.3 Marketing Challenge

Farming has risks which must be managed as the implications can have a compounded effect. One of the risks is in the markets and marketing. Ching, Tingna, Yu, Ting-Huei and Yin-Lin (2022) note that downplaying marketing influence can be an obstacle for a business survival. Managing the agricultural risks may provide opportunities for sustainability in farming. Komarek, De Pinto and Smith (2020), note that market risks involve uncertainty on prices, costs and access to markets. The volatility in production costs can be due to climatic shocks, fuel costs and lack of information. There is also challenge whereby farmers scramble for the same customers in the same locality. Nani (2011) attributes that to lack of understanding of the marketing mix, information and lack of appropriate training in marketing. Mtisi et al (2017) also observed that the market for produce may have seasonal incomes and at times low disposable incomes leading to cash flow and liquidity constraints on farmers. Derera (2015) notes that monopoly buyers such

as GMB for maize despite being a sure market for such produce, they have not created meaningful growth for the farming business. Farmers are not paid on time despite supplying the GMB with maize in good faith. Munyoro and Chimbari (2019) point out that access to markets is also hampered by poor communication, infrastructure, lack of timely market information and attitude of buyers. Interestingly, studies by Pandey, Dhungana and Sharma (2020) though done in Nepal, they resonate with the Zimbabwean context and they showed that rubber farmers faced marketing challenges in grading their products, price fluctuations, low contract farming prices, delayed payments and inadequate storage facilities.

Studies conducted by Mutema (2012) on resettled farmers showed that access to markets is being hindered by poor road network, lack of bridges when rivers or streams are in flood. This setback leaves farmers vulnerable to exploitation by middlemen who buy the farm produce at low and exploitative prices which hammer income generation capacity and livelihood quality. This view is also shared by Makhura, Kirsten and Delgado (2001) who observed that small holder or emerging farmers experience higher transactional costs to access markets. The major overhead being transport costs. In concurrence, Mutambara and Munodawafa (2014) observed that farmers have to hire means of transport at a cost thereby reducing their profit margins.

Muziri (2009) highlights another marketing challenge due to government policy. The government issued Statutory Instrument 235A of 2001 in July of that year with a view to compel farmers to sell grains to the Grain Marketing Board (GMB). This meant that prices became fixed and controlled regardless of market forces and inflationary pressures. This effectively cut out lucrative offers from private millers. This price control regimen coupled with poor payment time frames by the GMB also reduced the income generation capacity of the farmers. The delayed payments also rendered farmers illiquid leading to reduced viability of farming as an entrepreneurial venture. Also on government policy effect, some products such as tobacco are priced in the United States Dollar though the actual payment is in the Zimbabwe Dollar equivalent at the prevalent interbank rate. The official interbank rate erodes the growers income due to the exchange rate losses and the instability of the local currency. This has brought in side -marketing as ‘dealers’ or unauthorised buyers offer hard currency (USD) payments to farmers which will still be lower than approved rates but with the benefit of ready cash (Shonhe and Scoones, 2021).

Emerging entrepreneurs such as farmers have a challenge in showcasing their products on platforms such as trade fairs or agricultural shows. Thus, there is need for government and other organisations to generate supportive marketing initiatives that can stimulate a positive mindset towards entrepreneurship (Svotwa, Jaiyeoba, Roberts-Lombard and Makanyeza, 2022). The

smallholder farmers are rarely linked to market agencies and they sell mostly to acquaintances, family and the informal market. There is a need for other marketing channels to be explored so that their farm produce can be marketed properly (Pelser, Pelser and Van Schalkwyk, 2020). This marketing challenge is exacerbated by high transport costs, limited knowledge in marketing, poor road infrastructure, poor market infrastructure and poor prices for the produce (Muchesa et al, 2019). Inadequate or limited knowledge is especially critical in post-harvest technology. This involves the handling, grading, storage and transportation, marketing, management of farm products from harvest up to the final consumption. Farm products such as vegetables or poultry (meat products) are highly perishable thus the consumer needs the product at a certain acceptable quality. Lack of adequate knowledge and or facilities can render a farmer bankrupt due to losses from decay, pests, poor handling and delays in reaching markets (Mukarumbwa, Mushunje, Taruvinga, Akinyemi and Ngarava, 2017).

2.2.5.4 Land Tenure Challenge

Agricultural development in Sub Saharan Africa is constrained on sustainability and productivity due to low investment exacerbated by land tenure systems deemed unfavourably by owners of capital (Dabara et al, 2019). Derera (2015) points out that there is high insecurity for resettled farmers due to uncertainty in the land tenure. As such farmers are not sure of their property rights. In most cases the land cannot be used as collateral for one to access loans or finance. Land tenure insecurity is not peculiar to Zimbabwe but is a global challenge. Thus, there is an inherent worry that the land may be disposed. Murken and Gornott (2022) note that this uncertainty demotivates farmers from making long term investments and this is partly to account for the low adoption of better technological induced farming practices. The insecurity of the land tenure renders it useless as collateral which is much needed to canvass for finance. Any tenure strengthening interventions such as Zimbabwe's 99 year leases have a positive effect on agricultural productivity. Munyoro and Chimbari (2019 recommend that government must view agricultural entrepreneurship in a positive way by addressing land tenure, banking laws so as to limit barriers to successful farm businesses. Mutambara (2016a) in earlier research corroborates these findings noting that in irrigation schemes, the farming plots cannot be used as collateral for credit access for operating expenses. Maguranyanga and Moyo (2006) view land tenure as a complex, emotive issue which has implications in both a historical context and a political dimension. The FTLR changed land rights, disposing former landowners and capacitating landless indigenous peoples. The government came up with offer letters and 99 year leases ostensibly to give confidence to the new farmers on land tenure. However, Maguranyanga and Moyo (2006) note that the political aspect of the leases breeds uncertainty. Technically, the

agricultural land in Zimbabwe has zero value as the current legislation does not permit the transfer of ownership thus it is not regarded as a commercial entity, thus banks cannot give credit on a zero value collateral (Masiyandima, Chigumira and Bara, 2011). Other researchers have concluded that in all practicality, for Zimbabwe, the land in essence has more political value than commercial value (Muziri, 2009).

This then leads others to contend that the security of tenure is still an issue as there are still conflicts over the land and court contests over occupancy (Matondi and Dekker, 2011). They note that contests are mainly on boundaries which were affected by the hastily process of land redistribution. This process also ushered in a challenge of counter claims due to offer letters overlapping, multiple farm ownership and irregular plot sizes. Matondi and Dekker (2011), thus advocate for a new land policy that would balance interests of various stakeholders and a Land Act to deal with land tenure challenges and other aspects of the land reform. The current Land Acquisition Act is focused on 'acquiring' land thus there are deadlocks due to lack of legal back up in adjudication of disputes or redressing contentious issues. Insecure land tenure can hinder adoption of new innovative technologies and increase risk and vulnerability of farmers (Murken and Gornott, 2022). Under the FTLR, there is a challenge of the slow pace of formalisation of resettled farmers tenure. The government of Zimbabwe has introduced 99 year leases which are touted as bankable collateral. However banks seem reluctant to buy in (Mkodzongi and Lawrence, 2019). Some still do not have offer letters and the 99 year leases thus creating further insecurity concerns for the farmers (Maguranyanga and Moyo, 2006). The slow granting of the 99 year leases has also fuelled suspicion as they are deemed as a preserve of the elite. This has seen farmers mortgaging their urban homes and where they have defaulted on loan payments, the homes have been lost. Furthermore Calo (2020) posits that formalization of land ownership integrates with capital and productive agriculture, thus the land tenure challenge cannot be downplayed. Murken and Gornott (2022) further posit that tenure security has behavioural incentives apart from the legal aspects as it promotes a sense of cultural and ancestral belonging leading to consistency in traditional land use practices.

Arguably on one hand, Maguranyanga and Moyo (2006) point out that the FTLR has indeed sought to confer land rights to the formerly marginalised black population. However, on the other hand, it has exacerbated insecurities over land tenure due to court or legal contestations of land ownership, land rights and tenure pitting the former land owners on one side and the FTLR beneficiaries on the other. Thus, the FTLR tenure reforms have brought to the fore new tenure systems such as the 99 year lease agreements. However, these have a challenge in that they

do not have economic benefits for now on surrendering to the state. They also have a challenge of restrictions on subletting, cession and partnerships further incapacitating struggling farmers from maximising on their occupancy.

Besides the highly researched land tenure, finance and collateral nexus, there is the issue of climate change and smart agriculture. Insecure land tenure will discourage adoption of climate change technologies due to being vulnerable to tenure uncertainties. There is no incentive for the farmer to adopt climate change technologies as there are no perceived benefits of a long term nature as they are not certain on how long they will be on the land thus there is no generational focus (Murken and Gornott, 2022). Calo (2020), further asserts that agricultural land tenure is a prime driver of farming decision making. Land tenure affects adoption of resilient farming in view of climate change. Decision making is affected by various interests whether imagined, existing or future ones. Henceforth farmers will indeed be receptive to climate change realities but without land tenure security, they will not be decisive enough to adopt changes. Chavunduka et al (2020), asserts that secure and transferable property rights consequently encourage the formation of credit markets thus availing financial resources needed to run the farms as viable businesses. The current status of land being vested in the state debases any opportunity for it to be regarded as a marketable commodity making it akin to lifeless capital.

2.2.5.5 Lack of Equipment Challenge

Equipment is critical in the farm management processes. It provides technological means on the accurate and cost effective application of inputs (Relf-Eckstein, Ballantyne and Phillips, 2019). They further note that equipment empowers farmers to practice sustainable agriculture through mitigation against adverse risks such as labour inconsistencies and shortages. Nani (2011) found out that 53% of women farmers cited lack of equipment as the reason for low agricultural production. The farmers pointed out that the financial resources were limiting their capacity to acquire equipment. Among smallholder irrigation schemes, Mutambara (2016b) notes that farmers failed to utilize their plots to optimal levels due to lack of draught power and limited access to tillage equipment. Sheahan and Barret (2017) give a comparative analysis when they note that in 2000, Zimbabwe had 24,000 functioning tractors yet by 2013 less than 9,000 tractors were in service. Research done by Muziri (2009) pointed out that financial problems such as inflation, inadequate foreign currency has led to shortages of spare parts and equipment breakdowns. Findings by Mutema (2012) show that obtaining, servicing equipment and machinery continues to be a major challenge under the FTLR. Thus, equipment acquisition is a

capital expense and this poses a challenge to emerging farmers due to limited financial resources. This also creates a dilemma in that on one hand farmers are sceptical of new technologies and on the other hand they cannot ignore the promise of smart farming. However large scale farmers are better placed as they possess equipment leading to a higher utilisation of land (Atanassova-Kalaydzhieva, 2019).

Besides the cost of equipment, the other challenge is the operation of the same. Some of the equipment comes with 'digital' controls and may need technical training on the operability. This then entails hiring of skilled technical minded personnel further increasing operating costs (Bolfe et al, 2020). They further note in their study that the complex technologies inherent in machines and equipment promise a high return but farmers are reluctant to take up the technology amidst, costs (cost-benefit analysis), and operability and sustainability concerns. Nair and Landani (2020) point out that the efficient use of equipment can sustain or improve a business or farm performance. Perishable products like in the dairy sector, need specialised equipment throughout the value chain and although it is expensive, it is of importance to improve production.

Poor equipment, lack of inputs is a barrier to production and this prevents smallholder farmers from shifting or improving to higher levels of production (Zerssa et al, 2021). Basic equipment such as tractors and irrigation related units is in a state of disrepair as observed by Shonhe, Scoones and Murimbarimba (2020). In other countries such as in Indonesia, smallholder farmers resort to hiring equipment such as tractors. This though helpful, it increases the production costs by between 5-15% (Umar, Nugroho, Darmadji and Suwatra, 2020). The researcher contends that this situation is not peculiar to Indonesia, as from observation, Zimbabwean smallholder farmers do rent equipment with a related outcome of increased production costs and due to scarcity of equipment it is available late (Sheahan and Barret, 2020) leading to delayed preparations and subsequently low production due to season mismatch.

Equipment affects agricultural infrastructure as part of the components thereof. Munyanyi (2013) views agriculture infrastructure as epitomised by three types namely road networks, irrigation technology and post-harvest storage technology. Equipment as a component infrastructure has an impact on agricultural performance. Lack of capital has not helped the state of agricultural infrastructure which is now saddled with challenges such as inadequate irrigation equipment, post-harvest losses culminating in increased poverty levels. The solution may lie in embracing cheap technology so as to enhance agricultural productivity and performance.

2.2.6 The Key players in Agricultural entrepreneurship in Zimbabwe

The researcher identified three key players in agricultural entrepreneurship namely the smallholder farmer, the commercial farmer and corporate entities (contract farming). The small holder farming sector is dominated mostly by women farmers. The males are in most cases resident in urban areas due to the lure of employment opportunities as observed by Svotwa, Manyanhaire and Makombe (2008). The commercial farmers on one part comprise mostly of the unacquired farms under the FTLR and the A2 resettlement farmers. Moyo and Chambati (2013) note that the A2 farms are larger than the communal farms and they created a new type of medium-sized commercial farms and also became a reserve of professionals with a desire for farming. The last part for the corporate players involved in agricultural entrepreneurship are mostly into contract farming. An example is tobacco farming which aptly describes the role. The buyers supply the farmers with the necessary inputs for production and they guarantee to purchase all produce at prevailing or better market prices (Dube and Mugwagwa, 2017).

2.2.6.1 Smallholder Farmers and Agricultural Entrepreneurship in Zimbabwe

The following are examples of smallholder farms found around Zimbabwe given by Chawatama, Mutisi and Mupawaenda (2015): in Chikomba district there is the Nharira smallholder farming area that is located in natural region 3 and is located 190km south-east of Harare, in the Chikomba district of Mashonaland East province. Land is communally owned and smallholder farmers do not have exclusive rights to the land. In the natural region 4 is Matopo district with the Kezi and Gulati smallholder farmers. These are located in Matabeleland South province where land is communally owned as well and no one has rights over the land as well. It is a dry area and smallholder farmers in the area mainly practice cattle rearing and grow drought resistant crops. Lastly is the Sanyati resettlement area in the district of Kadoma located almost 260 km west of Harare in the Mashonaland West province with smallholder farmers with almost 5 hectares each with the grazing land being communally owned.

Smallholder farming is defined by Mutami (2015), as farmers who are in communal areas, resettled small scale areas like Makoni District, and small scale commercial areas like Mazowe who own less than 35 hectares of land. Scoones, (2017), notes that all smallholder farmers in Zimbabwe have livestock. Out of 1, 5 million smallholder farmers, 65% of them keep goats, sheep and chicken as livestock. Mutami, (2015), notes that out of the 65%, 45% have both small and large livestock like cattle and donkeys. Smallholder farmers have numerous use for the livestock they keep like the small livestock for example chickens are used for selling and income generating purposes. The small livestock is also used for dietary and nutritional purposes seeing

how hard it is to purchase groceries from the stores in Zimbabwe due to inflation and sky-rocketing prices. The large livestock like cattle is the one noted by numerous scholars as being the most preferred by the smallholder farmers. As alluded to Mujeyi, Mudhara and Mutenje (2021), livestock such as cattle and donkeys can also be used for labour around the farm. For smallholder farmers, who are characterised by limited resources in terms of money, using cattle for labour for ploughing and cultivating assist in saving and allocating the money that could have been for paying labourers to other farm activities like buying fertilizers thus ensuring productivity.

Smallholder farmers in Zimbabwe produce most of the maize and cotton, and these smallholder farmers include almost 1 million households on over 16 million hectares of communally owned land, 52 thousands households on 3,3 million hectares of resettled land and 8 thousand privately owned on about 1, 2 million hectares (Leresche, 2015). Prior to the nation's independence, smallholder farms that were communally owned were more dominant and employed most people who shifted later after independence as the government started paying more attention to the large scale farmers and formal sector and as the social services declined. Since then the government has been aiming towards empowering smallholder farmers by trying to improve their access to and incomes. To address the inequalities faced by smallholder farmers, the government of Zimbabwe has been trying to redirect resources to smallholder farms. It is imperative for one to note that, when it comes to smallholder farms they are largely characterised by low income individuals or families, poverty, limited access to resources and are mostly in the rural areas. Most of these smallholder farmers are highly dependent on donations for fertilisers and seeds to grow.

Most smallholder farmers produce for the market and subsistence use. Smallholder farms are dominated by maize planting which is mostly grown for both personal consumption and selling. Crops and vegetables like pumpkins, millet, sunflower, and burley are mostly grown and intercropped by smallholder farmers. Due to large migration rates in Zimbabwe, we have most smallholder farmers being women as men are seen to been crossing borders especially into South Africa to look for jobs. These women have to balance between production, consumption and nurturing demands and are also involved in maintaining and developing social capital as well as productive assets and rely on other communities for support in hard times (Leresche, 2015). Manyise, Dentoni and Trienekens (2023) point out that traditionally in Zimbabwe, small holder farmers are predominantly subsistence focussed characterised by small land plots. However they are gradually shifting to business initiatives ostensibly to meet their basic needs.

Small holder farmers are known to provide the market with most vegetables. According to Leresche, (2015), smallholders provide most of the vegetables sold on the local market. The difference between smallholders and large scale farmers is that while smallholders' supplies most vegetables to markets the large scale farmers provide most of the fruits, flowers as well as vegetables to supermarkets-particularly surpluses which cannot be exported. In general, as compared to large scale farmers, the smallholder farmers have little to less land, little to less rainfall, limited access to resources like loans, limited inputs as well as limited knowledge of crop specialization. It is difficult for the smallholder farmers to access capital and skills which allow them to participate in high quality horticulture commodities (Chawatama, Mutisi, and Mupawaenda, 2015). One of the entrepreneurial activities that smallholder farmers engage in include the rearing and selling of small livestock like chickens both roadrunners and broilers. Gororo and Kashangura (2016), point out that poultry has become one of the most prominent agricultural projects that people engage in as an income generating activity in Zimbabwe and the smallholders are included as well. With the proceeds acquired from selling the chickens, the smallholder farmers are able to use some of the money to restock and some to buy farm inputs like seeds and fertilizers. The small holder farmers are able to sell the chickens dressed or undressed individually or in bulk to people or supermarkets

Another entrepreneurial activity that smallholder farmers engage in, include group entrepreneurship. Group entrepreneurship is when two or more farmers come together to form a business together. Farmers engaging in this type of entrepreneurial activity have similar goals and objectives and willingness to share the benefits. This has become more common amongst the smallholder farmers in Zimbabwe partly because of the shared benefits. Muyambo (2017) points out that due to their inability to start their business individually, smallholder farmers in the country have taken to sharing their work, skills as well as finances to produce more and provide a market for themselves. It is a concept more like the "*Ilima/nhimbe*" concept practiced by the Ndebele and Shona cultures respectively whereby people in a community would come together to share labour in the fields. Thus it is a tangible assertion that group entrepreneurship has helped smallholder farmers in Zimbabwe to invest more, share skills and knowledge and to produce more.

Previously smallholder farming was associated with subsistence farming. The trend towards an entrepreneurial culture is evident as the smallholder farmers are evolving due to a realization of an increase in income levels from produce sales. Svotwa, Manyanhaire and Makombe (2008) emphasize that there is noticeable decision making on how much of farm products to sell under

existing market conditions. They noted that from the same piece of land, production was adequate for family consumption and there is a positive skew towards high quantities for sale. Though encouraging, agricultural entrepreneurial receipts are still being subsidized by diasporean, spousal and relatives remittances.

The participation of smallholder farmers in agricultural entrepreneurship has shown a variety of potential income sources. Studies by Moyo (2010) showed that income came from vegetable growing, livestock sales, casual labour engagement, field crops and external family remittances. Livestock sales tops the farm or agricultural activity income generators as a major earner. There is more reliance on livestock sales by male smallholder farmers and female headed smallholder farms tend to be more dependent on vegetable sales (Moyo, 2010). Despite these traits of entrepreneurial flair, the impact is still insignificant. The major limitation of higher agricultural entrepreneurial activity among smallholder farmers is the inability to increase productivity to initially cover the food supply per household then sell the surplus. However, research by Mukarumbwa et al (2017) argues that post-harvest techniques can reduce losses thereby increasing incomes without the need to expand the land under cultivation. This brings to the fore the need to improve post-harvest management so as to enable the smallholder farmers to benefit more from their agricultural entrepreneurial activities.

The government of Zimbabwe, citing prohibitive costs of capacitating smallholder farmers has encouraged the leaning towards income generating projects such as rabbit production. This has immediate benefits such as food security and a local demand thereby creating additional income. The secondary impact is that the profits or income surplus can be used for livestock diversification into goats, sheep and cattle rearing. These projects though encouraging agricultural entrepreneurship still fall short on markets and market information to the farmers (Tembachako and Mrema, 2016). In concurrence Muchesa et al (2019) emphasize that market linkages by small holder farmers will be beneficial in upgrading them into entrepreneurial focus rather than subsistence activities.

2.2.6.2 Commercial Farmers and Agricultural Entrepreneurship

Post 2000 the demographics of the commercial farming sector has changed somewhat and is now comprised of white commercial farmers who remained in the country after the FTLR and the indigenous farmers settled on both the A1 and A2 farms. Despite challenges due to lack of finance, some have evolved into commercial farmers and those getting surpluses are reinvesting the same. The major activity of this sector has been contract farming which will be discussed in

the next section. They also enjoy government support through subsidies and various state input schemes (Scoones et al, 2019)

Shonhe et al (2020) observed the emergence of medium scale farmers who are neither large scale nor subsistence farmers. They have evolved into commercialized agriculture with significant market share. Their studies carried out in Mvurwi show that there is an emergence of distinct 'capitalistic' farmers. Others have links to agribusiness capital both local and global. There is a general propensity to aspire to be successful commercial farmers. The stability of the commercial farming sector can also be attributed to an entrepreneurial approach of forging synergies with financiers and markets. This brings to the fore the concept of contract farming. In essence the researcher views contract farming as a bridge that links farmers to agribusiness finance and markets without the hustle of market forces dictating price and demand.

2.2.6.3 Contract Farming, Corporate Sector and agricultural entrepreneurship

Contract farming has been described as a written or verbal agreement with contracts between farmers and a company or organisation, where there is specifications of conditions of production and marketing of a product (Woodend, 2013). Extrapolating further Woodend, (2013), shares that contract farming is the relationship between a farmer and a private entity that allows and facilitates for open-market exchanges through linkages of smallholder farmers to inputs and control of market prices. To deduce, contract farming is when a farmer grows a certain crop under a certain period to suit the agreement in exchange for inputs and a market. An example of predominantly contract farming area in Zimbabwe is in the Mashonaland West and Mashonaland Central area under natural region 2 with more rainfall and the area accounts for 75-80% of the crops produced in Zimbabwe, (FAO, 2013). Tobacco, Maize, soya beans and horticulture activities are prominent in the areas and contract farming is most vibrant with supporting companies like the Grain Marketing Board, Windmill, and Kurima Gold.

Contract farming in Zimbabwe is characterised by provision of inputs and product services. Scoones, (2017), notes that most contract farming involves agreements of considerable and basic support that includes provision of seeds and equipment. Since contract farming is most of the time done between farmer and a sponsor or donor, the sponsors provide for most of the inputs extending to trainings, education and extension. Provision of inputs is mostly done to ensure that farming goes well and increased yields are produced as well as good quality. In Zimbabwe, due to economic and political environments it is hard for smallholder farmers to gain access into inputs like capital and fertilizers. Therefore contract farming provides safety nets against those limitations that the country presents to smallholder farmers through sponsorship.

However, it is imperative to note that contract farming takes away the freedom of farmers to choose their own choice of crops as well as the period. Scoones, (2017), notes that, the types of crops to be grown as well as the periods are usually dictated by the contracts and sponsors. It is therefore safe to say that, the plight of farmers in Zimbabwe has left them in the mercy of sponsors and private companies.

Contract farming is mostly associated with cash crops. According to Woodend, (2013), contract farming has largely been limited to cash crops, in Zimbabwe; contract farming has been dominant in sugar cane, tobacco, maize, cotton, and cattle production. Woodend, (2013), notes that contract farming in Zimbabwe also extends to poultry production. Scoones, (2017), shows that crops that include; paprika, groundnuts and chilies have also been of interest to contract farming. Cash crops have a predominantly revenue earner role to the country of Zimbabwe. Most cash crops are sold outside of the country therefore bringing in foreign currency. In a country like Zimbabwe that has been under sanctions for years, contract farming is a vital part of the country's economic activities. In the same light, Dube and Mugwagwa (2017), similarly shares that recent studies in Zimbabwe show that the promotion of cash crop farming by contract farming has shown a positive spill over effects on the development of services and food production in the area of practice. However, some scholars note that contract farming has negatively affected food security by promoting cash crop farming. Arguments arise on the base that all farmers are now moving to cash crop farming as a way of getting and making money not out of the integrity of producing food for their countries.

Contract farming is indeed widely accepted by farmers. Dube and Mugwagwa (2017), note that historically contract farming has been the preserve of tea, sugarcane, cotton and tobacco but due to the FTLR and the decimated agricultural production it is now encompassing other crops. In tobacco the depressed output was mainly due to the risk borne by farmers as they had to secure inputs and deliver the tobacco to an auction where price was determined by the highest bidder. Thus, the risk and uncertainty stifled production. However, under the contract farming set up such inherent risks are borne by the buyer who guarantees stable prices, access to markets, access to inputs, training and reduced marketing risks. Sokchea and Culas (2015) point out that contract farming significantly improves smallholder household incomes. There is a marked agricultural production and marketing directly positively impacting on farmer's income. Thus, contract farming has resulted in accumulation from below and an increase in incomes and asset ownership.

However, contract farming in Zimbabwe is noted to be an exploitative system. Woodend, (2013), shares that one of the weakness of contract farming is that it is an exploitative and even self-exploitative system where the smallholder farmers exploit themselves, and even household to meet the demands of the contract. Critics owing to the same sentiments shared by Woodend, state that the contract farming system in Zimbabwe is proletarianization of small holder farmers and reduces them to nothing but slaves of the private organisations. Contract farming is most of the time accessible to those commercialized farmers and some small holder farmers with networks and connections therefore it can exacerbate issues to do with inequality and conflicts amongst farmers in a community as small poor farmers are often left out. In the cases of contract farming, it is the social and political connections that ensure access (Shonhe and Scoones, 2021). They also note that the insertion or inclusion of private sector into agriculture sector has triggered social differentiation which has resulted in new political dynamics. It is therefore probable that contract farming especially in corrupt and highly political countries can lead to social inequalities and conflicts.

Although, facing economic hindrances numerous literature is existent showing that contract farmers also engage in entrepreneurial activities to fund themselves. FAO, (2013), gives an account of farmers keeping and rearing animals as means to support themselves. Just like small holder farmers contract farmers are recorded to engage in poultry keeping from the money they get from selling of their products or surrendering as per agreements. Scoones, (2017), speaks of poultry or animals like goats being separate entities that are most of the time not included in contract farming. However, it is possible that at times to achieve the demands of the contracts contract farmers end up tapping into their livestock which is maybe why Woodend (2013) classifies contract farming as an exploitative system. Money generated for poultry or livestock proceeds are used to fund some of the farms activity that a farmer will have agreed to provide in the contract like labour.

Contract farmers, as a way of entrepreneurship have cooperatives where they form groups, jointly share information, sponsor links, skills and work. Contract farmers through their cooperatives create markets for each other. By working closely together one is able to advertise and market the other which has been working to create opportunities. While contract farmers can be said to be engaging in entrepreneurship, the funding they get can also be classified as entrepreneurship (Scoones, Mavedzenge, Murimbarimba, and Sukume, 2019). However, the fact that it is funded means that it might not be a sustainable systems as a sponsor can pull out at any time and violation of the contract can prove fatal for contract farmers.

Besides corporate players, the Government of Zimbabwe adopted economic policies such as the 'Look East Policy' which had a bearing on agriculture. Though these were perceived as political manoeuvres, they served to revive cotton, tobacco and horticultural crops through attracting Chinese capital. However, cereals such as maize did not benefit from such contracts. This lack of support for cereals by private capital led the Government of Zimbabwe to introduce maize contract farming. This came to be known as Targeted Command Agriculture Programme (TCAP). Mazwi et al, 2019). Despite challenges such as political bias, delayed inputs and payments this programme is indeed an example of state led contract farming.

2.2.7 Overview of other economies in agricultural entrepreneurship

Studies in the Caribbean and Latin America by Sancho (2010) showed that entrepreneurship in Agriculture has had an impact in correcting prior weaknesses of the productive sector and improving strategies for agrifood chains and rural territories. However, there is still need for adjustments such as government efficiency, clear laws, less bureaucracy, more enterprise promotion to entice young farmers and training. Dobryagina (2019), on studies in the European Union, showed that Agricultural Entrepreneurship is still underestimated. There is still a perception of farming as a reserve for hereditary induced occupation hardly inspiring the young people to take up the activity. Martinho (2020) notes that in the European Union, after the 2015 financial crisis, the main motive for agricultural entrepreneurship has been the opportunity and a search for a new lifestyle. The young entrepreneurs are motivated by the established older and successful farmers who have recovered faster from the financial crisis challenges. This is also the trend in Indonesia where however the government has taken initiatives for young farmers to be trained in Agricultural entrepreneurship through shaping and directing them in teamwork programs, conducting socialization towards elders on the importance of agricultural entrepreneurship to recover national output and increases workshops for consultants to support youth agricultural entrepreneurs (Ridha and Wahyu, 2017). Dobryagina (2019) recommends that member states of the European Union must continue with policies that provide farmers with financial resources, environmental training and also foster those policies that empower them with capabilities necessary for successful agricultural entrepreneurship.

In West Africa the government of Nigeria, embarked on a policy known as the Agricultural Transformation Agenda, ATA (2010) whose main premise was the adoption of Agriculture as a business. This policy was successful on input supply but was deficient on targeted production leaving Nigeria in a Net food importer position. This gave rise to a new policy in 2016 called the Agricultural Promotion Policy (APP). On reviewing the Nigerian APP, Ifeoma (2019)

acknowledges that the performance has been below expectations and recommends the need for political commitment, reduced bureaucracy, improved government departments synergies, training and capacity building of staff and a robust monitoring and evaluation system. Thus if APP is properly carried out, it will attract more investment and more Agricultural entrepreneurial opportunities across the value chain.

Pelser, Pelser and Schalkwyk (2020) note that the South African government has a budget to create entrepreneurs in the Agricultural sector. The program involves capacitating smallholder farmers through grants until they become commercial farmers through a land reform program. The program has had challenges such as misappropriation and misuse of the grant. There is need for the government of South Africa to establish alliances with private corporates so as to form partnerships for successful development so that the critical ingredients emerging farmers need from inception to establishment are delivered. Thus, South Africa has seen massive transformation of the Agricultural sector with women farmers now on the forefront. Kanayo (2021) recommends training for business skills as an empowerment tool. This can be achieved by ensuring that for a transformative change, the curriculum for the training programs must include remedies to deal with psychological and social barriers against women agricultural entrepreneurs. They should also be policy undertakings towards inclusion and gender equality and parity.

Zimbabwe however has not had any tangible entrepreneurial approach or a policy to the existing farming and business systems (Mazikana, 2023). The researcher contends that this could be a precursor to the declining agricultural performance in the country. Thus the researcher views the stagnation on entrepreneurial policy at government level as counterproductive in efforts to improve the GDP.

2.2.8 Overview of agricultural performance by province

2.2.8.1 Matebeleland North Agricultural Activities and Performance Overview

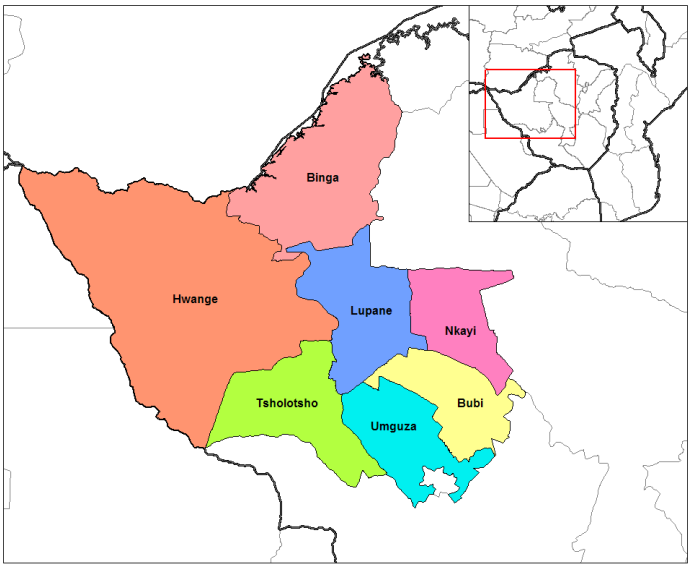


Figure 2.4: Map of Matebeleland North Province Showing Districts
Source: Openstreet Maps (2023)

The province has seven districts namely Hwange, Tsholotsho, Umguza, Bubi, Lupane, Nkayi and Binga. It lies in the agro-ecological region IV and V. Chingarande, Mugano, Chagwiza and Hungwe (2020) note that the region has below rainfall averaging 450-650mm per annum. Small grains like sorghum and millet grow well in the province and they also practice livestock rearing (Author, 2023). Further research by Chingarande, Mugano, Chagwiza and Hungwe (2020b) in another publication shows that the surplus is generally limited. The province has liquidity challenges such as access to cash leading to a diminished household purchasing power. The researcher concurs with this observation from field work and attests that due to lack of surplus, entrepreneurial activities are limited.

Khumalo (2021), on climate change research carried out in the province in Nkayi district, noted that the area is prone to droughts, livestock mortality, low grazing land for livestock, poor water security, crop failure and scarce wild fruits. The shift in climatic seasons and the low rainfall has affected agricultural activities negatively. This has disrupted livelihoods and reduced agricultural entrepreneurial focus as there is no surplus to sell due to reduced yields and poor livestock quality. In their research, Khumalo (2021), however points out there is a shift in focus towards small livestock such as chickens, goats and pigs and these have a better commercial value and are less vulnerable to climatic changes compared to larger livestock such as cattle.

Dube and Moyo (2015), in studies regarding land resettlement in the province, point out that the objective of resettling landless farmers was to improve their livelihoods though this noble objective has been curtailed by the low rainfall. The soil types are Kalahari sands (desert type) in most parts of the province. The farmers have shown resilience by adopting dryland farming and this has improved yields and food security. However the lack of irrigation facilities in the province thus dictates that not much agro-entrepreneurial activity on cropping takes place though livestock sales have improved livelihoods. In all fairness al is not gloomy in this province as it is endowed with wildlife making it a premier tourist attraction with a significant contribution to the GDP. Muromo, Madanzi, Manjeru, Isaac and Matunhu (2021), also point out that the province has abundant wild vegetables with daily diet impact and benefits especially in the Zambezi basin. Their study was on the commercialisation of amaranth known as 'imbuya' in SiNdebele, 'mowa' in Shona and 'bboonkoi' in Tonga. This wild vegetable and grain is tolerant to the harsh climatic conditions of this province and it has been introduced as a micro-project in Binga district. This district depends on agriculture as the main source of livelihood. Thus these micro-projects are developing sustainable markets and value chains whereby the communal farmers are the producers, distributors or consumers. Local perceptions showed that some sections viewed amaranth as a weed and these micro-projects are creating a natural resource enterprise. The selling of wild vegetables, fish from the Zambezi river are now sources of income thus stimulating an entrepreneurial culture.

2.2.8.2 Matebeleland South Agricultural Activities and Performance Overview

Figure 2.5: Map of Matebeleland South Province Showing Districts

Source: Openstreet Maps (2023)

The province lies in the agro-ecological region IV and has seven districts namely Mangwe, Bulilima, Umzingwane, Insiza, Matopo, Gwanda and Beitbridge. Cattle rearing is the predominant activity and farmers rely on it for obtaining financial assets for household needs through sales. Other areas such as Beitbridge in Gwanda district are now specialised in goat production and auctions have been developed under local authorities who now coordinate the goat sales thus improving household incomes and reducing the negative effect of the middlemen. The uptake of goat production is driven mostly by entrepreneurial considerations rather than cultural practice in this cattle rearing dominated province (Dube, Chakona and Bahta, 2017). Ndlovu, Prinsloo and Le Roux (2020) on climate change research note that the province rainfall is below the national average of 500mm-750mm and is between 250mm-500mm per annum. Farmers in this province depend on rain fed agriculture thus their agricultural activities are no longer sustainable. There is an intermittent loss of livestock due to droughts and crop failures. Despite such adverse conditions, Ndlovu et al (2020) note that farmers still maintain huge livestock herds against dwindling pastures.

The rainfall in the area gives a length of growing period of 105-135 days per annum. This then renders the province as more ideal for livestock production and drought tolerant crops such as sorghum and millets. The livestock production is mostly for meat products and dairy farming is very minimal in the province (Kunaka et al, 2023). Livestock is the major income source with goat breeding and cattle sales with the best prices obtainable in December due to festive season spending. The lowest prices are in January due to increased market supply due to school fees pressures and the glut lowers the market prices (Kunaka et al, 2023).

The major constraint in agricultural performance in the province is water scarcity that has been further worsened by climate change (Ndlovu et al 2020). This has seen a decline in livestock output and crop harvests which unfortunately depends on rain fed agriculture. This province agricultural activities involve semi -pastoralism, extensive livestock production and crop cultivation. For crop production, the planting is mainly for subsistence or family consumption. In a report by Christian Care (2012), farmers who have adopted conservation agriculture, have exhibited improved harvest in millet and sorghum of over 300%. The other strategies against climate shocks, have included the diversification of crop types and small livestock and the surplus is traded for household income.

2.2.8.3 Midlands Agricultural Activities and Performance Overview

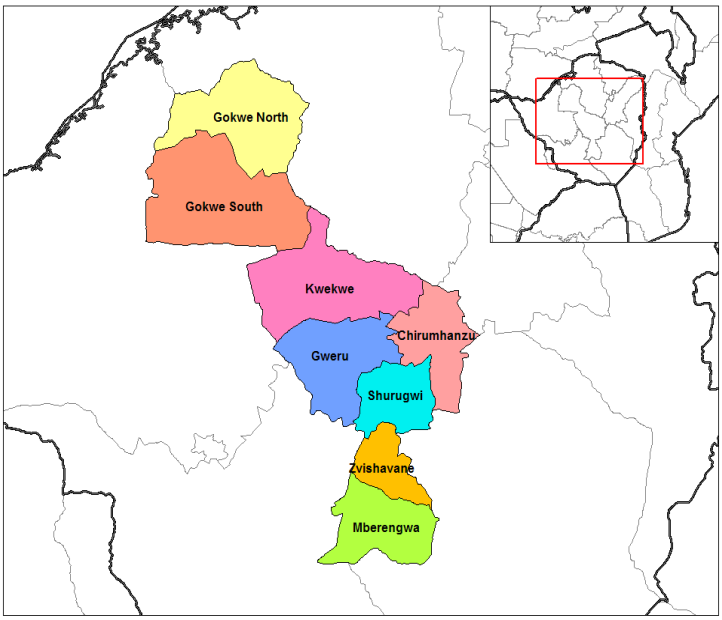


Figure 2.6: Map of Midlands Province Showing Districts
Source: Openstreet Maps (2023)

The most dominant agricultural activities are in the Zvishavane, Chirumhanzu and Gokwe areas. The province has eight districts namely Gokwe North, Gokwe South, Kwekwe, Gweru, Chirumhanzu, Shurugwi, Zvishavane and Mberengwa. The farming activity is based on mixed farming whereby livestock rearing is practiced concurrently with cropping. Maize and wheat are the dominant crops grown in this province. The province also has good water availability peaking at almost 80%. A ZimVac (2021) survey showed that on crop production in terms of household prevalence, the province produces maize (93%), groundnuts (46%), cowpeas (43%), tubers (37%), roundnuts (31%) and sorghum 25%. On cattle 46% of the farming communities households own cattle. The Province suffers from outbreaks of Theileriosis and lumpy skin disease from time to time.

In their description of the Midlands province, Mupepi and Matasa (2021), point out that it is about 1,039 m above sea level with an average annual rainfall of 500mm and an average temperature of 28 Degrees Celsius. The province is predominantly a mining area though there is small scale farming of cotton, sunflowers, maize, sorghum, vegetables and livestock rearing. These agricultural activities however are practiced at a subsistence level. The province lies in the Agroecological region III and IV and the farmers practice semi-intensive farming coupled with livestock farming and this is prevalent in some districts such as Chirumhanzu (Grey,

Musununguere and Manyani 2020). NGOs have been active in training farmers in agricultural techniques and inoculating a business approach to farming. This reduces incidences of over reliance on food aid and improves food security. The researcher does commends such initiatives for training as they encourage an entrepreneurial approach. More studies from a research conducted by Brazier (2022) on behalf of the Welthungerhilfe Foundation, showed that the growing of cash crops such as cotton in some districts like Gokwe have quickened and awakened an understanding of an entrepreneurial approach to farming. They note that in Gokwe, most cereal crops are sold instead of being kept in storage for family consumption. This also holds true for other crops such as sweet potatoes, soya beans and horticultural products.

2.2.8.4 Masvingo Agricultural Activities and Performance Overview

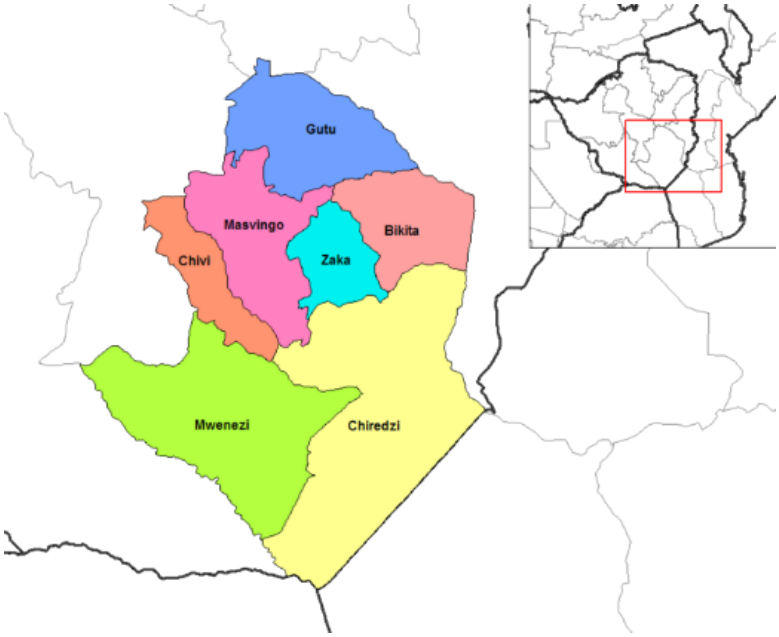


Figure 2.7: Map of Masvingo Province Showing Districts
Source: Openstreet Maps (2023)

The province is mostly dry with 80% subjected to water insecurity. The province has seven districts namely Mwenezi, Chiredzi, Chivi, Masvingo, Zaka, Bikita and Gutu. Agricultural active areas include Chivi, Bikita and Masvingo. In Masvingo communal areas such as Chitambira farmers practice mixed farming and they keep goats and sheep with minimal cropping. Gutu area is mostly for cattle rearing and Bikita area is mixed farming. Chingarande, Mugano, Chagwiza and Hungwe (2020b) note that Masvingo is a structurally food deficit area in agro ecological region IV characterised by low and uncertain rainfall. Crop production is limited by water

unavailability. Cattle ranching can be practised where there are alternative water supplies. There is high food insecurity due to poor harvests. However irrigation schemes have been set up to mitigate against poor rain fed cropping in areas such as Manjinji Irrigation Scheme in Malipati and Mushandike Irrigation Scheme in Charumbira areas.

The province is home to prominent rivers such as the Save, Mwenezi, Runde and Mutirikwi and some of these rivers host Zimbabwe's largest inland water bodies such as Tugwi-Mukosi and Mutirikwi dams (Gwazani, Gandiwa and Poshiwa, 2022). In terms of agroentrepreneurial activities farmers in the province have been inducted into aquaculture through the Government of Zimbabwe programmes and non-governmental organisations initiatives. There is marked aquaculture activities in Chivi, Chiredzi and Mwenezi districts. The research undertaken by Gwazani et al (2022) also bemoaned the marketing challenge despite the entrepreneurial approach by farmers. The marketing of fish products was hampered by lack of critical infrastructure and equipment such as freezing facilities and transport. However despite these setbacks, the farmers have witnessed improved livelihoods indicated by homestead improvements, school fees payments for dependents, agro-diversification to poultry farming and solar electrification.

Overall, Nyahunda and Tirivangasi (2019), observed that the province has not fared better on the backdrop of oscillating rainfall patterns and this has increased vulnerability of communities relying on farming due to uncertain and diminished yields per season. They also note that the continuous low rainfall and water shortages negate any prospects of rain fed agriculture in areas such as Bikita District. They recommend an adoption of intense usage of irrigation technology and that farmers should form groups for enhanced capacity in knowledge sharing particularly for climate change and to adopt an entrepreneurial approach as they have failed to embrace other drought tolerant cash crops such as potatoes which the Government of Zimbabwe has designated as ideal for food security. A study undertaken by Dube (2016), showed that farmer groups in Masvingo had a significant and positive influence on crop diversification and the members learnt from each other in the cropping techniques and marketing aspects. Networking within groups seemed to affect individual focus, agricultural innovations, knowledge and skills sharing.

Turning to the demographic linked agricultural activities, Chidoko and Zhou (2012) point out that whilst the province is a water shortage and low rainfall area, the presence of large dams give a lot of potential to the youth and able bodied who can tap into agricultural economic activities such as irrigation and fisheries. Their study recommends training of farmers and youths in

farming knowledge, skills, attitudes, technical expertise so that agriculture can be established as a viable economic industry. Chikobvu, Chiputwa, Langyintno, La Rovere and Mwagi (2010), observed that farmers in Masvingo province are planting more maize for subsistence purposes and food security concerns. However despite an understandable food security concern, the over reliance on rain fed cropping with limited irrigation capacity, the production remains low. Thus agricultural entrepreneurial approach is curtailed by the subsistence and food security concerns.

2.2.8.5 Manicaland Agricultural Activities and Performance Overview

Figure 2.8: Map of Manicaland Province Showing Districts

Source: Openstreet Maps (2023)

The province consists of seven districts namely Makoni, Nyanga, Mutasa, Mutare, Buhera, Chimanimani and Chipinge. The province spans the agro-ecological regions from I to V. Manicaland province has a unique topography of a mountainous barrier belt which then affects the weather patterns and agricultural activities in the province. There are two perennial rivers that traverse the province namely the Odzi River which covers Nyanga district throughout to Mutasa districts and discharges to the Save River. The other rivers are Pungwe and Honde. These rivers support a system of dams and the fourth largest dam in Zimbabwe, Osborne Dam is located in Mutasa district. The other dams Mukwanda, Marange II and Mpudzi have vast agricultural influence in the province. This province was previously the vanguard of agriculture with estates in timber, tea, bananas, apples and potatoes. However agriculture has been overshadowed by

mining especially for diamonds. Also tourism is a top performer in the province. The varied agro-ecological set up allows the province to practice dryland farming, irrigation, greenhouse farming, forest plantations, tea and coffees production, dairy farming, macadamia nuts and kiwifruit. The other agro ecological regions other than I, across the province thrive on drought tolerant crops. Chingarande, Mugano, Chagwiza and Hungwe (2020) note that the extremes of agro-ecological regions mean the province has resource fortunes on one side and distress on the other. Buhera district is a food deficit area perennially. Thus the whole province is characterised by subsistence farming. Only 15% is subject to water insecurity in this province. In areas such as Zimunya agricultural activities include sugar cane and vegetables. In Rusape maize cultivation is predominant and Nyanga is dotted with commercial farms for tea plantations, bananas and potatoes.

2.2.8.6 Mashonaland East Agricultural Activities and Performance Overview

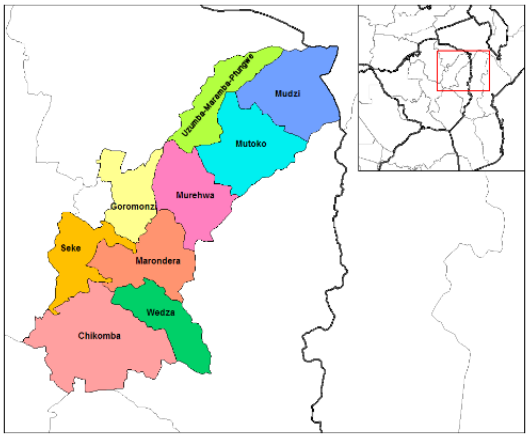


Figure 2.9: Map of Mashonaland East Province Showing Districts
Source: Openstreet Maps (2023)

The province consists of nine districts namely Uzumba-Maramba-Pfungwe, Mudzi, Mutoko, Murehwa, Goromonzi, Marondera, Seke, Wedza and Chikomba. The province has a good water supply at 90% and boasts of the highest harvests in Zimbabwe. Prominent areas include Marondera, Hwedza and Seke. The farmers practice mixed farming with livestock being kept in addition to tobacco, maize, soya beans, sunflower. The province is the highest maize producer in Zimbabwe (ZIMSTAT, 2019). The province has seen the adoption of contract farming by small scale farmers in tobacco. Taringana and Nyambara (2023) note that consequently tobacco production has been increasing. The province cuts across agro ecological region II and III which

can be described as moderate. The province produces tomatoes, rape, carrots and cucumbers in large volumes and the production is spread across smallholder to commercial farmers.

Studies in Mashonaland East Province have bemoaned the over reliance on micro-cropping and grain yields as it degraded the ecosystem and lowered food security and farmer livelihoods. MacAllister (2016), showed that the farming households were producing below subsistence level with limited agrobiodiversity leaving the farmers vulnerable across all aspects. Despite a favourable agro-ecological zone, the vulnerability of farmers due to low agricultural performance, low entrepreneurial and marketing skills leaves them in need of food aid (MacAllister, 2016). There is however significant smallholder agricultural entrepreneurial activity in the province. They are involved in vegetable production which has a potential to improve livelihoods through employment creation and increased income. Mukarumbwa et al, (2018), note that the marketing of vegetables poses a challenge regardless of production improvements. They note that despite the entrepreneurial approach, smallholder farmers face a barrier in supplying chain stores and supermarkets posed by stringent quality requirements and supply consistency contracts. This then forces the farmers in Mashonaland East province to resort to informal trading where they face hard bargaining and due to the perishable nature of the products, the disposal is to middle men with ridiculous extortionist prices thereby reducing the profit margins. Mukarumbwa et al (2018) note that the resorting to informal channels for the sale of agricultural produce though undesirable is a better option to farmers in that there are lower quality expectations and the market is supply driven meaning that a glut in supply sees a low price on offer and scarcity comes with a higher produce price being obtained.

The province despite having moderate climatic conditions has to contend with the spectre of climate change which poses as a threat to traditional means of livelihoods through agricultural entrepreneurship. Rainfall patterns have become unpredictable and erratic thus creating uncertainties on livelihoods, productivity and agricultural performance. For farmers with irrigation infrastructure, their agricultural performance is stable despite the conundrum created by climatic factors. In the province (Bhatasara, 2016). However despite the alluded setbacks, Bhatasara (2016), on studies in Mutoko district points out that farmers have instead become innovative by adopting new agricultural practices, new insights, new strategies as they become reflexible to the climate change shocks. The researcher is fascinated with this entrepreneurial approach to improve agricultural performance against the stressful climate induced uncertainties.

2.2.8.7 Mashonaland Central Agricultural Activities and Performance Overview

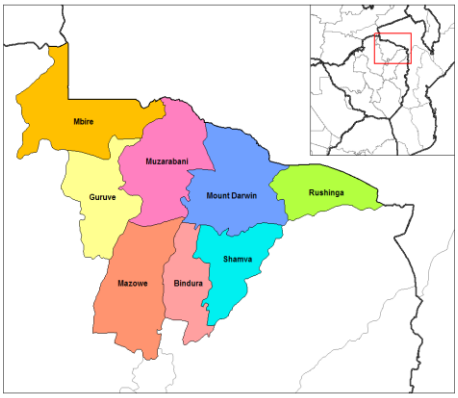


Figure 2.10: Map of Mashonaland Central Province Showing Districts
Source: Openstreet Maps (2023)

The province consists of eight districts namely Mbire, Guruve, Muzarabani, Mount Darwin, Rushinga, Shamva, Bindura and Mazowe. The province has good water supplies and sources. It is in the agro ecological region II and is suitable for cropping and intensive livestock production with rainfall of between 750mm to 1000mm per annum. The agricultural activities include cattle rearing, maize growing, soya beans and macadamia nuts. Musemwa, Mushunje, Muchenje, Aghdasi and Zhou (2013) describe the province as ideal for cropping and livestock and in some other districts within the province which are in agro-ecological region III and IV, both semi intensive and semi extensive farming are ideal.

The province is a predominantly rural area whose main economic base is agriculture (Njaya and Mazuru, 2014). They further note that the sandy soils and the good rainfall are ideal for commercial cropping of tobacco which is mostly grown in rotation with maize and groundnuts as part of conservation agriculture. There is a flair of entrepreneurial approach by some farmers who have ventured into cash crops such as potato, paprika, sorghum, horticulture and beef and dairy farming. Tobacco farming is also attractive due to viable auction prices. Mazuru, Njaya and Hanyani-Mlambo (2007) also concur on the emigration to cash crops indeed improves the agricultural performance , they however note that the economic benefit has triggered a reduction in maize production and this has negative repercussions on food security. Thus the researcher contends that there is need for a balanced approach on entrepreneurial dictates and the prime agricultural objective of food security.

2.2.8.8 Mashonaland West Agricultural Activities and Performance Overview

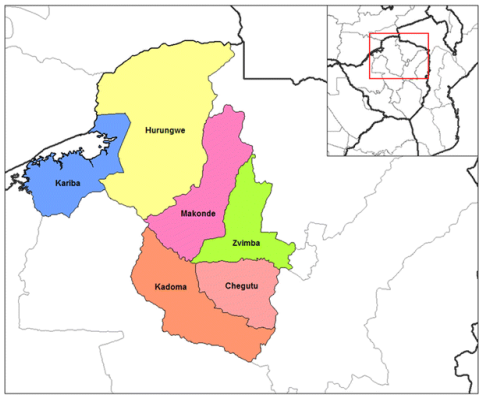


Figure 2.11: Map of Mashonaland West Province Showing Districts

Source: Openstreet Maps (2023)

The province has six districts namely Hurungwe, Kariba, Makonde, Zvimba, Chegutu and Kadoma. The province boasts of good water supply and sources at 84% water availability. The dominant agricultural activity is maize growing and other small grains. Prominent agricultural areas include Chegutu, Chinhoyi and Zvimba. The province falls under agro ecological natural region II and the mean rainfall is 700 mm-1050 mm per annum. Gambiza and Nyama (2000) point out that this level of rainfall makes the province ideal for intensive crop production and livestock rearing. Fishing is also practiced in dams such as Hunyani, Manyame and Darwendale dams and this has improved livelihoods of inhabitants and also set up a thriving per urban fish business for towns such as Norton through this agricultural entrepreneurial activity. Muzeza, Taruvinga and Mukarumbwa (2023) also point out that the other climatic advantage besides rainfall for this province is the warm winter whereby at the onset of winter in June, minimum temperatures range from 23 Degrees Celsius to 31 Degrees Celsius in October. Thus the rainfall and temperature favour maize production and cements the province as a prime producer of note. As a consequence even the smallest farmer in terms of production as in subsistence farmer manages to sell some surplus mostly to the GMB and the depots are spread out for logistics throughout the province.

Muzeza et al (2023), describe Mashonaland West as the largest maize producer in Zimbabwe. However they note that due to lack of formal employment and low end wages, the inhabitants are classified as poor. The district of Chegutu is a high maize production area fuelled mostly by A1 and A2 farmers. Other districts such as Zvimba and Hurungwe have diversified agricultural production into other crops besides maize. Chigunhah and Svotwa (2020), observed that whilst maize yields in the province are higher from a national perspective, diversification and higher

productivity remains elusive. They contend that productivity would be higher than current settings but such targets are hampered by erratic rainfall and lack of finance for operations. Mashizha (2019) notes that overall, agricultural production in the province is dominated by maize, cotton, tobacco, soya bean and livestock. Districts such as Zvimba also practice conservation agriculture and they exhibit high yields on maize, finger millet, groundnuts, vegetables and sorghum. The researcher observed a thriving roadside market of green mealies at times being sold from animal drawn vehicles and trucks. The researcher contends that though the region inhabitants are classified as poor as alluded to Muzeza et al, (2023), the flair for agricultural entrepreneurial activity is evident.

2.3 CHAPTER SUMMARY

This Chapter focused on the review of related literature on agriculture in the Zimbabwean context. It also looked at entrepreneurship relevance in agriculture drawing insights from the colonial era to the current agricultural activities. This chapter also covered an overview of key agricultural activities and their agricultural performance relevance to the Gross Domestic Product. It also covered the provincial overview of agricultural activities drawing out the potential scope of entrepreneurial adoption of the inherent farming patterns. There is also a section which covered challenges facing farmers in their adoption of entrepreneurial competences.

CHAPTER 3

THEORETICAL LITERATURE REVIEW

3.1 Introduction

The previous Chapter focused on the review of related literature on agriculture in the Zimbabwean context. It also looked at entrepreneurship relevance in agriculture drawing insights from the colonial era to the current agricultural activities. It also covered an overview of key agricultural activities and their agricultural performance relevance to the Gross Domestic Product. It also covered the provincial overview of agricultural activities drawing out the potential scope of entrepreneurial adoption of the inherent farming patterns. There was also a discussion which covered challenges facing farmers in their adoption of entrepreneurial competences.

In this Chapter there is also a discussion on the pertinent and relevant theories to the conceptual framework. The chapter sought to link key theories to the constructs of entrepreneurial competences in the conceptual framework. Theories help to understand research phenomena and to predict research outcomes. They also entail viewpoints by other researchers and their scholarly thrust or opinion. The discussion looked at empirical studies which relate to the focus area of the study. The essence of the review of peer studies was to reveal a gap in knowledge so as to develop the model this study wishes to proffer. Ponomarev (2020) points out that there is a contradictory and multidirectional approach on the entrepreneurship theory giving various conclusions and recommendations by current scholars. This is due to an inherent challenge on the choice of theories in the entrepreneurial approach which may then be divided into three categories namely personality characteristics, socio-culture theories and economic theories. Thus, on investigating entrepreneurial competences constructs, one can be faced with a dilemma on whether the outcome or exhibition attributed to entrepreneurship is due to which category of theory due to cause-and-effect ambiguity. The chapter identified gaps in the current empirical studies. This chapter ended with a summary of the empirical literature and the conceptual framework.

3.2 Agricultural entrepreneurship

Due to limited research the definition of agricultural entrepreneurship is still evolving. Pindado and Sanchez (2017) postulate that agricultural entrepreneurship and normal entrepreneurship can both be the same or different depending on the type of research question and thrust employed. Rauch, Wiklund, Lumpkin and Frese, (2009) state that certain elements of

entrepreneurship are relatively universal and context independent. The attendant elements that should characterize entrepreneurship are; the importance of opportunities, pro-activeness, risk taking and entrepreneurial self-efficacy. Other scholars like Ponomarev (2020) see the definition dilemma of entrepreneurship as being affected by the consideration of its 'nature' and 'nurture'. One can be born with natural inclination to being an entrepreneur but can only be described as such if there is a favourable environment and they make an effort to develop their inherent abilities. The development of inherent abilities follows the universal attendant elements of entrepreneurship aforementioned.

Schumpeter is credited as the father and foremost proponent of entrepreneurship. In his 1947 works he defines an entrepreneur as one who is innovative, carrying out new combinations to stimulate economic progress through the introduction of new products and establishment of new business entities. The practitioner of such an undertaking is called an entrepreneur. This research looks at the business unit of agricultural activities as a farm. A farm is a type of business or enterprise having employees characterized by a piece of land normally with buildings and whereby agricultural activities are carried out. Like other enterprises they are capable of adding value to an economy by creating jobs, enhancing income, strengthening purchasing power and adding business convenience (Munoz, 2010). Avlasovich, Gefner, Vasyukova and Kuznetsova (2019) concur with the researcher view that farming is an entrepreneurial activity. The farm business in their research looked at farmer motivation and entrepreneurship activity which in turn stimulated agricultural entrepreneurship. Earlier proponents of entrepreneurship such as Drucker (1985) also lean on the Schumpeterian approach and define it as a series of actions or activities that endows resources with a novel aptitude to create wealth. This is a view shared by Obialo (2019) who sees entrepreneurship as a human institution whose focus and make up is to create new products and services despite operating in an environment of extreme uncertainties.

Lans, Klerkx and Seuneke (2017) then recommend that agricultural entrepreneurship must consider further characteristics such as; the historical impact of the agricultural sector, the direct farm environment, the family firm, gender, entrepreneurial experience, alongside the existing entrepreneurial definition components. Farming and agricultural businesses or enterprises are now a norm in many countries. There is an upward trend of the growth of the agricultural business and decline of subsistence farming (Maiyaki, 2010). Prabhu (2020) weighs in on the business entity linked description by defining agricultural entrepreneurship as more of the marketing, production of various farming products and the supply and distribution of farming inputs. The main focus is to obtain a decent quantity of revenue from agricultural activities. Thus Prabhu

(2020) sees agricultural entrepreneurship as a trade effort of agricultural commodities and merchandise.

From a Schumpeterian perspective, entrepreneurship pertains to creativity and innovation whereby one introduces something new into the economy. The theory of social wealth whose proponent is Leon Walras (2019) posits that entrepreneurship is the coordination of basic factors of production which include land, labour and capital. Thus, agricultural entrepreneurship becomes a branch of entrepreneurship specific to the agricultural sector with emphasis on production, processing and marketing (Ahmed, Hasan and Haneef, 2011). Wilson (2007) considers agriculture as a critical factor for self-sufficiency in a country economy. Looking at the Middle East, Iran agriculture is primarily for food security just as in Zimbabwe. Despite the Iran agricultural revolution in a harsh arid climate, studies show that the agricultural sector lags behind due to technological backwardness, lack of entrepreneurial orientation and lack of motivation among others.

Thus the tenets and characteristics of entrepreneurship are universal regardless of the type. Agriculture entrepreneurship has a more contextual and sectorial approach to entrepreneurship. McElwee and Bosworth, (2010) define agricultural entrepreneurship as the persistence of an owner managed farm with strategically sophisticated approaches to markets and supply chain relationships. Sancho (2010) weighs in by observing contextual traits which characterize an agricultural entrepreneur such as a high level of motivation, confidence, ability to initiate a business project, aptitude to solutions to problems, risk taking ability and goal setting.

In Africa, Nigeria agriculture was previously dominated by millions of subsistence farmers without a business outlook amidst scarce resources. The process of training farmers into agricultural entrepreneurs is still ongoing with an expectation to improve productivity and profitability (Ahmed et al, 2011). Yazdani and Saeedi (2014) see entrepreneurial activities as a response to the lagging behind of the agricultural sector in Iran. Agricultural entrepreneurship is now influencing subsistence farmers to be more responsive to market shifts, customer preferences and supply chains (McElwee and Atherton, 2011). Manyise and Dentoni (2021) view agricultural entrepreneurship as an economics construct pertaining to the allocation of natural, financial, social and physical resources in a farming concern so as to obtain benefits, manage costs and to control uncertainties. This view has roots in economics where entrepreneurship is concerned with the actions or activities of an entity which has the capacity to convert resources into products and services so as to obtain rewards (Audretsch, Bozeman, Combs, Feldman et al, 2002). Thus Peneder (2009) asserts that entrepreneurship can promote the allocative efficiency for given

resources and may accelerate the dynamic performance of a system through a gradual creation of new products, processes and markets.

In essence agricultural entrepreneurship is intricately involved with the production, marketing and distribution of various agricultural products. A small scale or subsistence farmer who by definition engages in consumptive production, whenever they sell a portion of their produce no matter the quantity that behaviour can be aptly defined as agricultural entrepreneurship. Thus, the researcher contends that an ideal definition must encompass any individual as alluded aforehand. From this discussion, the researcher proposes a definition of agricultural entrepreneurship based on the Schumpeterian perspective and the economics approach:

Agricultural entrepreneurship refers to the activities of an entity or individual which involve the conversion of resources such as land, labour, inputs and capital through adoption of creativity and innovation to produce novel products, technologies, processes and markets (Source: Author, 2023).

3.3 Entrepreneurial competences

Research on entrepreneurial aptitude shows that the intangible nature of the same can be determined through two approaches namely focusing on personal traits and competences. Lans et al (2017) note that in defining entrepreneurial competences there is a tendency of confusion due to the complexity of reality arising from ambiguity on the interaction of behavioural outcomes and personal traits. Thus there is ambivalence of the concept of competence therefore there is need for clarity. Tittel and Terzidis (2020) note that some of the definitions have foundations at policy level, education science, occupational, pedagogical and psychology level. Thus, rather than a stipulated definition there is need of a contextual definition through an adoption of a guideline which encompasses competences as context-bound, subject to change, linked to activities and tasks, subject to learning and development and that they are interrelated. This situation then creates conditions for various definitions of entrepreneurial competences. Though the approaches are varied, they have a common understanding of the concept. The researcher posits that this could explain why many publications take a general approach to the definition. In that regard this study has adopted the approach proposed by Tittel and Terzidis (2020) who did essays on entrepreneurial competences literature review and came up with twelve definitions.

3.3.1 Defining Entrepreneurial Competences

Earlier writings define entrepreneurial competences as mainly the character of an entrepreneur inclusive of personality traits, attitudes and skills, knowledge all interacting for performance

effectiveness of the entrepreneur (Man, Lau and Chan 2002).These can be defined as inherent personal characteristics that positively impact on task execution in an efficient manner (Sanchez (2011) as cited in Pranowo, Sutrisno, Sulastiono and Siregar (2020).

Another school of thought sees them as a development when an entrepreneur seeks capacity in areas they are deficient in through training which improves the capacity of the farm to be competitive. Thus, with this viewpoint, Mitchelmore and Rowley (2010), see entrepreneurial competences as 'specific' competences adapted for the implementation of successful business ventures. This view is shared by Klieme and Leutner (2006) as cited in Tittel and Terzidis (2020) who also theorised entrepreneurial competences as context-specific cognitive inclinations that are a product of learning and are critical to positively manage situations or undertakings with a specific system. Thus competences are cognitive abilities and skills inherent or acquired through learning by individuals giving them a capability to solve certain problems, motivational inclination, social promptness and the unction to make use of solutions viably and ethically in various settings.

Lans (2009) defines entrepreneurial competency as the explicating of new pathways to growth, innovation and diversification and the aptitude of the owner-managers to foresee and exploit such opportunities. Entrepreneurial competences were previously grouped into six clusters as elucidated by Man et al (2002) in studies done in Hong Kong. Lackeus (2015) also supported the Man et al (2002) entrepreneurial competences and classified them as cognitive thus being capable of being taught and to be evaluated more efficiently. Farhangmehr, Goncalves and Samento (2016) view entrepreneurship competences as a combination of personality attributes, skills and knowledge, leadership, identification of opportunities, creativity, innovation, critical discourse, problem solving and ability to adapt all these working in synergy to motivate the entrepreneur. This definition resonates with the works of Mulder (2007) from an educational perspective who asserts that competence is the general propensity of individuals to perform a task or to solve a problem that is work in progress, to complete it and receive a reward. Competence then is an attribute, ability, propensity or skill that is actioned by and is a property to the student. However, this study gravitates to the definition of competences as individual characteristics which improve performance and effectiveness rather than viewing them as 'entrepreneurship' (Sanchez, 2011).

3.3.2 Categories of Entrepreneurial Competences

There are various entrepreneurial competences categories based on diverse viewpoints. Though the reviewed ones in this section are not in any way exhaustive they help to weed out the inherent

ambivalence characterising the construct. The selected approaches have been tested empirical and measurement scales have been developed and they have been modelled leading to their inferential and predictive role as established. They are not necessarily stand alone and as such they are many areas of replication, intersection amongst them and depending on the focus areas, their indicators can be used interchangeably.

Table 3.1 Categories of entrepreneurial competences

Author	**Categorization of Entrepreneurial Competence**
Man et al. (2002)	Opportunity competences Relationship competences Conceptual competences Organizing competences Strategic competences Commitment competences
Schallenkamp & Smith (2008)	Technical skills Managerial skills Entrepreneurial skills Personal maturity skills
Mitchelmore and Rowley (2010)	Business and management competencies Human relations competencies Entrepreneurial competencies Conceptual and relationship competencies
Komarkova et al. (2015)	Operational and contextual Entrepreneurial Conceptual and relationship
Lackeus (2015	Knowledge Skills Attitude
Bacigalupo et al. (2016)	Ideas and Opportunities Competences Resources Competences Into Action Competences
Bird (1995)	Motive and trait level Social role and self-concept level Skill level

Source: Tittel and Terzidis (2020)

For some approaches there is an inherent tendency to mix both entrepreneurial competences, skills and traits in the same category. This further exacerbates the definition challenge and the proponents of the different approaches contend that the differences are a product of cultural and regional changes, economic changes, globalised market competition, thus their

development (approaches), has been subjected to an influence of the geographic, domain and context -specific environment (Tittel and Terzidis, 2020). Malebana and Vhukeya (2023), note that the knowledge on the approaches is critical so that during research design, the appropriate areas of entrepreneurial competences are considered. The researcher concurs with this view hence this literature overview on entrepreneurial competences so as to adequately explicate the role of entrepreneurial competences in this study.

The ambivalence in spelling out entrepreneurial competences is thus due to a conceptual cacophony of the approaches which mix up psychological indicators, motivation, cognitive abilities and behavioural aspects all in one broth of the constructs. Research is still ongoing to delineate cognitive dispositions, skills, attributes and motivation (Kamuri, 2023).

Man et al (2002) sees entrepreneurial competences as behavioural and they include personality traits, skills, and knowledge. They reiterate that the outcome of these entrepreneurial competences is the performance or execution of a task successfully. From the behavioural outlook, Man et al (2002) theorises that the process of behavioural dimension can be used as a pathway to analyse the relationship between personal differences and business outcomes. The entrepreneurial competences are categorised in the Table above (Table 3.1).

Schallenkamp and Smith (2008) view entrepreneurial competences as a skills framework with key aspects of technical, managerial, entrepreneurial personal maturity skills. Respondents on assessment for entrepreneurial competences are required to rank the skills they consider most pertinent in their business undertakings and then to do a self-evaluation of their individual ability against the presented skills framework. Their approach creates challenges in that there seems to be no distinction between entrepreneurial skills and managerial skills. Research by Izhar and Shoid, (2020) uses both terms interchangeably suggesting that entrepreneurial skills are entrepreneurial competences and also on the same level with managerial skills. This is one of the instances which have prompted this study to dwell on an overview of the categorisation of entrepreneurial competences as the researcher asserts that the confusion on the definitions has an impact on the ontology of entrepreneurial studies.

Mitchelmore and Rowley (2010) view entrepreneurial competences as success factors that must be achieved in carrying out business. Their approach is a dimensional framework cutting across business, management, human resources, conceptual and relationship competences (Hossain, Rahman and Talukder, 2021). They see the factors or constructs in their approach as necessary for success in a knowledge economy and assert that human capital though an intangible asset

is critical for an entity success. The factors making up their entrepreneurial competences approach are shown in Table 3.1.

Komarkova et al (2015) in their approach view the generic nature of entrepreneurial skills applying the traditional business focus and the personal life of an individual. They note that entrepreneurial competences though previously associated with business, economic matters they now transcend on a broad view inclusive of social, cultural and environmental aspects (Komarkova, Gagliardi, Conradis and Collado, 2015). Thus in their approach, entrepreneurial competences include the ability to examine personal strengths and weaknesses, to create and to accomplish goals, communication and networking skills, to innovate and activities and actions that pertain to positively approaching personal, social and professional challenges (Ismail, 2022). The factors that make up the categories are shown in Table 3.1.

Lackeus (2015) in his works on entrepreneurial education, views entrepreneurial competences as a combination of knowledge, skills and attitude that affects the willingness, capacity to execute an entrepreneurial undertaking towards value creation. The approach asserts that entrepreneurial competences can be developed through learning by doing, thus there is an element of experiential learning. The approach views entrepreneurial competences as cognitive capable of being developed rather than being perceived on hindsight. In this approach, knowledge and skills are viewed as personal development and financial focus is an indication of attitude. Therefore Lackeus (2015) views entrepreneurial competences as a product of entrepreneurial education. The researcher subscribes to the tenets of entrepreneurial training and education as these form the basis of a viable recommendation derived from the findings of this study.

Bacigalupo et al (2016) developed a framework known as the European Entrepreneurship Competence Framework (EntreComp) which views the entrepreneurship competences as a set of abilities with a capacity to mould society through value creation at the social, cultural and financial level for a knowledge based community. They suggest classifying the entrepreneurial competences into three areas being Ideas and Opportunities Competences, Resources Competences, and Into Action Competences.

These competences have a further fifteen competences, constructs or indicators. They view the framework of entrepreneurship as a transversal competence with an ability to have applicability in all areas of life embracing cultural, social and commercial spheres. However, it is important to state that the entrepreneurial competences are not stand alone constructs though they are

grouped into different focus areas but do exhibit an element of being interrelated and interconnected thus they are acting in synergy in reality. The fifteen indicators include spotting opportunities, creativity, vision, valuing ideas and ethical and sustainable thinking under the Ideas and Opportunities Competences. The resources Competences have the following indicators, self-awareness and self-efficacy, motivation and perseverance, mobilising resources and financial and economic literacy. Lastly the Into Action competences are depicted through the following indicators, namely mobilising others, taking the initiative, planning and management, coping with uncertainty and risk, working with others and learning through experience. This study adopted the EntreComp framework due to its approach which intersects across various approaches thus the researcher appreciated the removal of bias due to ambivalence and looked at the three areas and their underlying cognitive entrepreneurial competences clusters or indicators.

Bird, (1995), postulated the theory of entrepreneurial competences which are viewed as inherent characteristics inclusive of specific knowledge, motives, traits, self-esteem, community roles and skills which culminate in the creation of a new venture, its survival and in some instances its growth. In this view, entrepreneurial competences are somewhat intrapsychic, observable, measurable and trainable. This then means they can be innate, inherent or inborn and can also be acquired through learning and training.

3.3.3 Core Components of Entrepreneurial Competences

Despite the various approaches to the definition of entrepreneurial competences it is noticeable that they share commonalities more than differences. This brings to the fore the existence of core components in entrepreneurial competences. These are knowledge, skills, traits, motives, self-images, social roles and specific group of competences. The researcher recognises and concurs with strides made by Tittel and Terzidis (2020) in this regard.

Knowledge

Knowledge as a core entrepreneurial competence involves the possession of experience, facts, information and talent and it can be obtained through learning, training and a practical or theoretical aptitude to entrepreneurship (RezaeiZadeh, Hogan, O'Reilly, Cunningham and Murphy, 2016). Following up on the works of Man et al, (2008), Pepple and Enuoh, (2020), note that entrepreneurs must have a specific knowledge of the business so that they exhibit competency. For entrepreneurs to perform their role, possession of technical knowledge and procedures relevant to their fields is critical. Knowledge can be reinforced by education and training thereby improving business performance.

Core Components of Entrepreneurial Competences

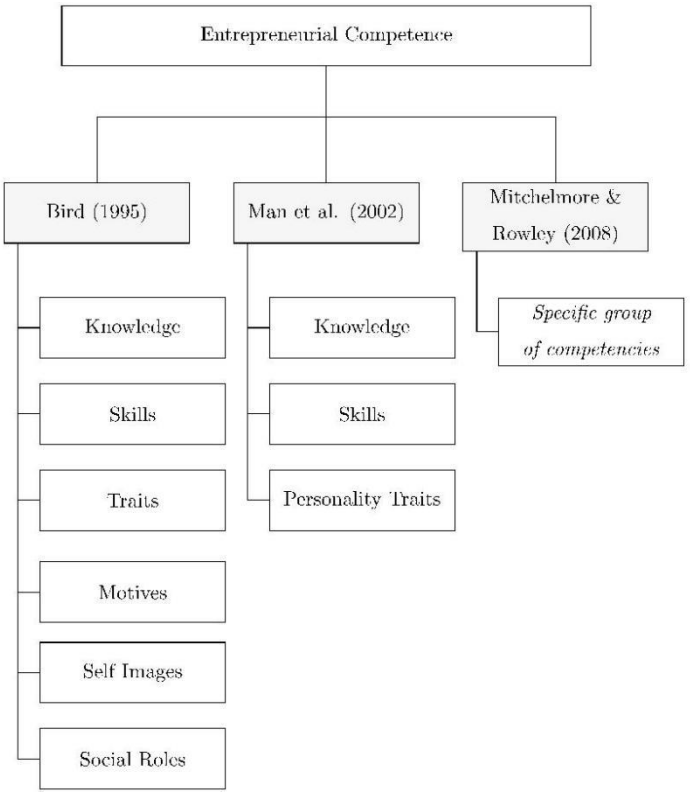


Figure 3.1 Core Components of Entrepreneurial Competences

Source: Tittel and Terzidis (2020)

Knowledge

Bird, (1995), views knowledge as an underlying characteristic of entrepreneurial competences. Knowledge helps to solve complex situations that may arise in the entrepreneurial discourse. Experiential learning can also contribute to the development of knowledge. Research by Syam et al (2020) showed that training in technical and product processing proved beneficial in expanding farmer knowledge, skills and performances.

Skills

Tittel and Terzidis, (2020), view skills as the ability to put knowledge into practice and to use the know-how to execute targets and to clear challenges and impediments in the venture. In all intents they are cognitive and practical as they entail use of logical, intuitive and creative thinking. They can be further described as knowledge capable of being transferred to novel situations. The dexterity of the dimension of transforming knowledge relative to the process and considerations on how and when it can be done thereof is referred to as a skill. They further

assert that skill becomes a concept that transfers knowledge into action. This then establishes skills as a functional competence (Botha and Taljaard, 2021).

Research shows that skills have a positive effect on the performance of a venture. Pepple and Enuoh, (2020), encourages entrepreneurs to be proactive rather than passive. They should be willing to learn new skills that will make them more competent in their respective fields. Certain skills are needed to be acquired by an entrepreneur so that they can improve performance and to maximise profit.

Traits

RezaeiZadeh et al, (2016) view traits as personal attributes which are perceived as a distinguishing quality, characteristic or inherent feature of someone. They are referred to as personal traits but not all of them can be learned or developed. They may include creativity, business opportunity, recognition, innovativeness and problem solving (Pepple and Enuoh, 2020). On entrepreneurial competences, Bacigalupo et al, (2016) have organised entrepreneurial traits as key components into each of the three categories in their framework of entrepreneurial competence areas. The three categories are ideas and opportunity competences, resources competences and into action competences. Research has shown that personality traits though considered as distal variables, they have a positive effect on performance.

Motive

Ndala and Pelser (2019), view motive as a person's plan to undertake an action through adoption of a behaviour which results in the setting up of an enterprise. It can also be an interpersonal skill needed to motivate others, to promote networking and teamwork. In this instance motive acts as a precursor to leadership an assertion supported by Lackeus, (2015) and Bacigalupo et al, (2016). Motive also gives the altruistic paradox where an entrepreneur gets more motivated by doing well to others rather than for oneself (Lackeus, 2015). Perhaps motive can be best explained by the Theory of Needs whose proponent is McClelland, (1985). In this theory, a motive is a persistent concern for a particular goal premised on an expected or anticipated reward thus giving focus and direction to a certain behaviour to achieve such.

Self-Image

Self-image pertains to an attitude towards oneself (Tittel and Terzidis, 2020). Self-image embraces how one places themselves about their competence level and outlook in their entrepreneurial discourse. The researcher posits that self-image is a self-perception of one's capacity and capability relative to the entrepreneurial task. Whilst self-image is somewhat desirable as an indicator of entrepreneurial competences, Lans, (2009), cautions against personal overestimations on their level of competence. Though this gives a positive self-image,

the over optimism of self-assessment seems to have a lower actual performance. This could be due to overlooking errors, limited feedback. Lans, (2009), contends that overestimation on one's level of competence, implies a deficiency in meta-cognitive skills and motivation to learn. On the contrary, under estimators have a lower self-image but have a good or better performance. Their success is due to their negative outlook on their weaknesses or their modesty on strengths. Overemphasizing weakness leads to compensation behaviour where one can outsource or seek help in areas they consider themselves deficient in and they then maximise on those which they consider themselves proficient.

Social Roles

Social role is one of the intrinsic elements of entrepreneurial competences which is concerned with a constituency of expectations focussed on individuals who hold particular positions in a society. Its main impact is that it contributes to the development of competence in a specific domain (Tittel and Terzidis, 2020). Entrepreneurs as agents of economic change have to play social roles and be problem solvers and this enhances their standing in a competitive business environment (Pepple and Enuoh, 2020). As society looks towards them for leadership and provision of goods and services, the researcher posits that this leads to development and gravitation towards excellence in entrepreneurial competences. The status so accorded propels an entrepreneur to enhance and develop their competences further.

Entrepreneurial Competence Areas

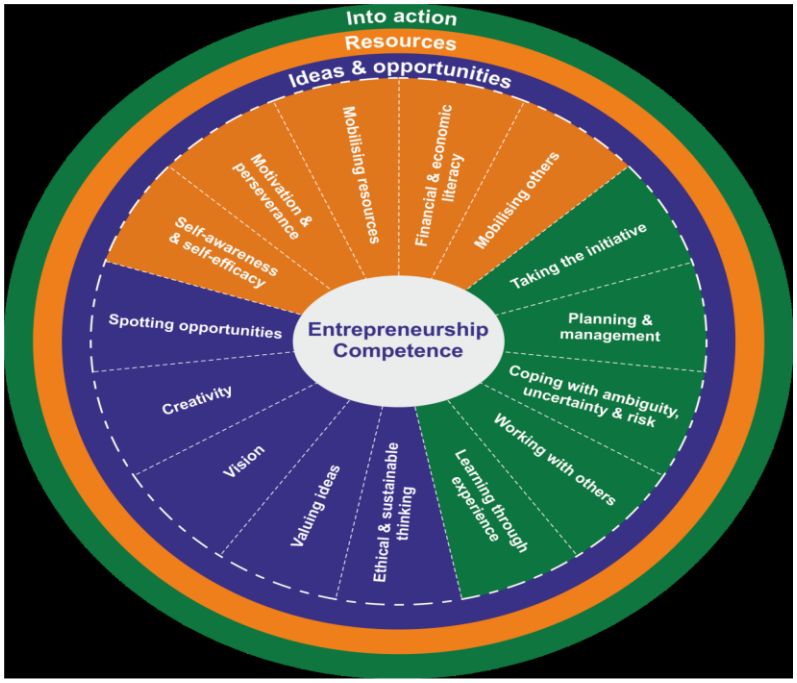


Figure 3.2 Entrepreneurship Competence clusters as shown in the EntreComp Model
Source: Adapted from Bacigalupo et al, (2016)

3.3.4. The role of ideas and opportunities competence area in agricultural entrepreneurship

The EntreComp framework posit various underlying competences under this area. They are seized with the identification of opportunities to enable creation of value, the identification of needs or challenges that need to be met and the ability to synergically bring scattered ideas and elements together to create value. Bacigalupo, Punie and Van den Brande (2016) also shows that the entrepreneur develops several ideas to create value and also solutions to existing challenges. These competences encourage an exploration of innovative approaches which combine knowledge and resources to culminate in achievement. One cannot ignore the underlying competence of vision as it visualizes future probabilities and this works as a guide towards action. The EntreComp framework (2016) adds the valuing of ideas as an underlying competence in that there is recognition of potential and the identification of maximization techniques of the same. In order to pursue ethical practices, the entrepreneur has to make an assessment of the consequences of any action taken in pursuit of transforming ideas into action. The indicators under this ideas and opportunities competence area include spotting opportunities

competence, creativity competence, vision competence, valuing ideas competence lastly there is ethical and sustainable thinking competence.

3.3.4.1 Spotting Opportunities Competence

Bacigalupo et al (2016) view this competence as one inclusive of imagination and an ability to perceive an opportunity. The descriptor of this competence include the propensity to identify and seize an opportunity so as to create value through exploration of the landscape. The entrepreneur is able to identify needs and confront challenges so as to establish new synergies and to coalesce loose components of the landscape to create opportunities which will transcend into value. Lans et al (2017), describes opportunity competences as relating to recognition and development of market opportunities and that they also exhibit environmental awareness, international orientation and market orientation. Entrepreneurs should be able to use available resources, identify the most viable action to exploit an opportunity rather than follow 'norms'. With this view Peak (2022) observes that entrepreneurs do not adopt a descriptive action but rather exhibit a normative approach in any situation.

Other studies see the opportunity competences as the very definition of entrepreneurship itself! This approach has links to the Schumpeterian perspective which define entrepreneurship as an opportunity recognition process whose pursuit culminates in growth and value creation with risk. Deekor (2019) shares this view by asserting that opportunity discovery, evaluation, the mobilization of resources in order to capitalize on the opportunity is an entrepreneurial activity.

Turning to their role in agricultural entrepreneurship, it can be argued that the uptake of farms by the indigenes under the FTLR has roots on opportunity competences. Mkodzonga and Lawrence (2019) point out that the FTLR invariably changed agrarian status in favour of the former marginalized groups. This researcher contends that these marginalized groups exhibited opportunity competences and their role is the very bedrock non-farmers took up the FTLR induced chances to become agricultural entrepreneurs. Scoones et al (2011), concurs on a gender related trajectory, that women saw the land invasions as an opportunity to make a new independent livelihood and also to escape social ills such as abusive relationships. Deekor (2019) further contends that opportunity competences are a precursor to skills needed by a farmer in order succeed.

3.3.4.2 Creativity Competences

The EntreComp framework (2016) views this competence as anchored on developing creative and purposeful ideas. Bacigalupo et al (2016) expands this view by pointing out that this competence involves the development of multiple ideas to create value and problem solving to new and existing challenges. There is also the element of exploration, investigation of possible

innovative approaches. The knowledge so gleaned is then combined with resources to culminate in valuable achievement. Man et al (2002) as cited in Lans et al (2017) asserts that opportunity competences exhibit the capability to embrace certain concepts. This involves conceptual thinking, creativity and problem analysis. There is matching of new ideas with existing knowledge and capabilities. Other researchers such as Bratianu, Hadad, and Bejnaru (2020) ideas and opportunities competences as a hazy semantic construct due to various interpretations affected by research domains such as psychology to management and they describe it as cognitive competence encompassing the ability to handle knowledge and understanding effectively or within a certain level of acceptance.

This then shows that ideas and opportunities competences play a role through proactiveness in searching for new opportunities and in creating new ideas. Other researchers see proactiveness in creativity as being exhibited by leading and operating capabilities. On the creativity construct, ideas and opportunities competences affect sustainability and staying power of entrepreneurs. They empower entrepreneurs to embody sustainability aptitude, embrace complex systems and to generate or to develop future plans and visions (Bianchi et al, 2022). The farmer is expected to grasp certain concepts through a dynamic integration of knowledge, skills when performing the agricultural tasks in a given context and at a certain quality level. The yields or production from an agricultural entrepreneur exhibiting an aptitude in ideas and opportunities competences can be an indicator relative to peers performing the same activities.

Problem analysis is another indicator under this competence area and it involves the ability to recognize, core challenges, assess their relative importance and to forecast basing on trends, their impact and then condense the outcomes into goals and strategies. Lee, Suh, Roy and Baucus (2019) though their research was on artificial intelligence and entrepreneurship their observations are still pertinent in agricultural entrepreneurship. They note that problem solving involves a depth of expertise and knowledge. The farmer needs to be able to recognize a challenge and apply knowledge in mitigation. This understanding and recognition can help explore diverse perspectives on the challenge or problem being addressed.

3.3.4.3 Vision Competences

Ideas and Opportunities competence areas include vision defined by the Merriam-Webster dictionary (2023) as the act or power of seeing (sight) or as a thought, concept or object formed by the imagination and as an unusual discernment or foresight. The researcher posits that the aforementioned definition alludes to an ability or aptitude to see beyond the material sphere by visualizing a concept beyond a mere idea to a future possibility of a tangible outcome. Rothauer (2018) sees vision as a driving force in innovation which when coupled with a right strategy can

lead to business development with future benefits. An entrepreneur with a vision has the ability to follow their path persistently even in a complex, volatile and constantly changing environment. Bacigalupo et al (2016) view vision competences as the capability to imagine the future and turn an idea into action. The farmer in this instance must be able to picture future scenarios and use the vision competence as a beacon to guide towards a destination and the possible action to adopt. The researcher concurs with the assertion from the EntreComp (2016) guide that a farmer or entrepreneur must work towards the vision. The entrepreneur must be able to share a compelling vision with other stakeholders Gianesini, Cubico, Favretto and Leitao (2018) further elaborate on vision in that it entails the ability to imagine a representation of a future status of an organisation and explain in a format that allows other stakeholders to enact and be of a synoptic view. To Botha and Taljaard (2021), vision becomes a functional competence as it is critical to achieve favourable outcomes. Vision enables an entrepreneur to conceptualise and bring to existence a business plan through inspiration from perceived and imagined future outcomes (Govindasamy, Abdullah and Ibrahim, 2021).

Muir-Leresche (2006) notes that smallholder farmers have challenges in obtaining capital and skills to enable them to participate in high value agricultural activities. However due to a visionary approach and commitment, Zimbabwean smallholder farmers have benefitted financially due to decontrolling of certain commodities such as cotton and also out grower schemes. Those who have held on have seen an improvement in their livelihoods, an apt example of the role of vision competences impact. James (2015) points out that for some farmers, the promise of inputs especially in contract farming has shaped their commitment to agricultural activities.

3.3.4.4 Valuing Ideas Competences

Bacigalupo et al (2016) emphasize that the core meaning of this competence is to glean maximum benefit of any idea that comes to the mind. The entrepreneur must be able to assess and to determine the expected social, cultural and economic value the idea will bring. They further explain that there is an element of recognition of the potential of the idea in creating value and the exploration of maximum exploitation of the idea to get rewards. Pepple and Enuoh (2020) note that developing new ideas and concepts involves a departure from norms and established procedures hence a cost-benefit analysis of such ideas is inevitable.

Govindasamy, Abdullah and Ibrahim (2021) point out that idea generation involves implementation through innovation and is a product of observations. The idea is then evaluated in a contextual set up and is then adapted to the needs of the society and the environment. Thus there is a transformation of a new idea into tangible entities which add value to the society (Lopez-Nunez, Rubio-Valdehita, Armuna and Perez-Urria, 2022). Ideas are brought into the market and

decisions are made on the design and price with the objective to create value. In entrepreneurship the founding of a farm is based or premised on an idea which is then assessed for its value creation ability.

Valuing ideas competences therefore pertains to one's values and how one acts on those values in everyday life. It is about understanding what an individual views as important. There is a focus on the most appropriate decision based on one's feelings about a particular idea (Fritz and Guthrie, 2017). It is the understanding of this researcher that if a farmer has no clarity on their values, then there is a high likelihood of them being swayed away from their core business of farming. An example based on this researcher viewpoint would be a peri-urban farmer foregoing farming in favour of subdividing the farmland into residential housing units due to the lure of fast gains in the property market.

3.3.4.5 Ethical and Sustainable Thinking Competences

Bacigalupo et al (2016) point out that this competence involves the assessment of the effect of what any innovation or idea that brings value will have on the target community, the market, society and the environment. They further assert that this competence entails the reflection on the part of the entrepreneur on sustainability of the goals relative to social, cultural and economic aspects in pursuit of the ideas and innovation. The entrepreneur has to act responsibly in their undertaking.

The researcher points out that in the Zimbabwean context, farmers face an ethical dilemma over the production of tobacco. The global negative campaign on tobacco and its related products such as cigarettes or smoking creates a challenge on the ethical and sustainability aspects of pursuing the opportunity of tobacco farming.

Due to religious beliefs some communities may forbid the cultivation of tobacco. The researcher views such an ethical dilemma as a deterrent for a farmer to cultivate tobacco despite the economic potential of the idea. In such communities, this invokes the justice ethical principle in that the entrepreneur has to be aware that actions such as tobacco cultivation may be deemed unfair to such communities (Jahn, 2011). Thus on ethical issues, Harris, Sapienza, and Bowie (2009), point out that the decision of the entrepreneur may exhibit heterogeneity. In the example given by the researcher on tobacco farming, amid religious considerations, entrepreneurs may differ due the sensitivity of the moral awareness and some may consider financial rewards in carrying out such business projects. There is thus an influence of socio-cultural factors. This competence is critical in venture creation as ethical dilemmas may arise in the execution of an idea to a functioning business. A farmer may forgo the tobacco business due to an ethical

dilemma involving their own values, culture and religious accountability (Payne and Joyner, 2006).

3.3.5 The role of Resources Competence Areas in agricultural entrepreneurship

The EntreComp Framework (2016) views the resources competence areas as composed of five constructs or indicators. These are self-awareness and self-efficacy competences, motivation and perseverance competences, mobilising resources competences, financial and economic literacy competences and mobilising others competences (Bacigalupo et al, 2016).

3.3.5.1 Self-Awareness and Self-Efficacy Competences

The core description of this competence is that an entrepreneur must believe in themselves and continue to develop in their chosen niche. Bacigalupo et al (2016) points out that in this competence, the entrepreneur focusses inwards on their needs, hopes and wants in both the short, medium and long term. There is self-introspection when one evaluates their strengths and weakness. The self-belief so attributed in their competence maintains a steady focus towards progress against uncertainty, disappointments and inability to reach targets. The entrepreneur reflects on their dreams and their wants and then identify their strengths and weaknesses so as to use the inert belief in self to influence the direction of the entrepreneurial focus against all odds. Bacigalupo et al (2016) further assert that this competence has an element of self-motivation and perseverance. The entrepreneur stays focused in their determination to turn ideas into action whilst exhibiting patience against failure. There is an underlying competence to gather resources needed to turn the ideas into reality. The resources competences entail that an entrepreneur develops financial and economic knowledge through being conversant with costs to turn and idea into a value creating activity capable of perpetuating into the long term.

From an entrepreneurial perspective, self-efficacy as a concept has a relation with entrepreneurial intention. Maluda and Alias (2022) point out that entrepreneurial intention is the outcome of envisaged or perceived wishes and envisaged or perceived viability. From the works of Bandura's (1977) Self-Efficacy Theory, perceived self-efficacy determines perceived viability which gives an entrepreneurial intention. Thus self-efficacy becomes the identification of the belief in an individual which propels their capability to perform a given task. Mozahem and Adlouni (2021) point out that self-efficacy is domain specific and is cognitive with a capability to develop from actual performance, emotional stimulation, vicarious learning and social persuasion. Research by Schlaegel and Koenig (2014) shows that self-efficacy can predict future entrepreneurial focus or to predict start up intent. The researcher thus views this indicator or

construct as critical in predicting farmer agricultural performance outcomes. Therefore self-efficacy would explain the persistence of a farmer in agricultural tasks and activities.

In agriculture research by Brown, Schirmer and Upton (2022) has shown the positive role self-efficacy impacts on the adoption of innovative farming practices, the transition to farm practices that involve conservation and the resilience against climate change induced risks. Self-efficacy gives a farmer a sense of control which then provides a strong base for skill development.

3.3.5.2 Motivation and Perseverance Competences

The EntreComp Framework (2016) which also underpins this study, summarises motivation and perseverance competences as being premised on the entrepreneur staying focussed and not giving up. The entrepreneur must be determined to turn ideas into actions and be able to get satisfaction from achievement. The other attribute on the entrepreneur is to be patient and exercise resilience or perseverance towards the achievement of goals. Setbacks or failures, pressures can be resisted under this competence rather than a situation whereby an entrepreneur buckles or submits to the negative outcomes (Bacigalupo et al, 2016).

Ponomarova, Krivosheya and Artmenko (2020), view motivation as a passion of work, the innate conviction of an entrepreneur in the expediency and scope of their work. It is a factor of work efficiency when existing at optimum levels. Extrapolating from the views of Ponomarova et al (2020), the researcher posits that for this study, motivation becomes an activity whose objective is to encourage farming into an efficient economic process consequently bringing out attainment of specific economic goals. The economic goals include profit, incremental income and improved agricultural performance.

Other studies view motivation as a constituent of internal driving factors, dreams, imagination, thoughts that propel individuals towards an activity which they navigate towards attaining specific goals. Looking at Russian agriculture they posit that the culture motivates them to overcome farming difficulties through improvisation. There is an element of last minute activity in the Russian farmer rather than a meticulous laid out action plan. This at times unnerves foreign investors due to negative perceptions. However they succeed as they are motivated by their ability to take on unsolvable tasks, ambiguous reactive approach and their innate entrepreneurial flair and capability (Avlasovich, Gefner, Vasyukova and Kuznetsova, 2019).

Research by Adeyeye, Aliu, Oni and Onimisi (2019), attributes motivation in entrepreneurship from an autonomy approach. This approach views motivation as a product of decisional freedom (proximal motive) whereby an individual prefers to be self-employed and carry out their own entrepreneurial activities. Other studies concur with these views and they point out that entrepreneurs can be motivated by the desire to be free of any control or to manage their affairs,

self-realisation, need to achieve entrepreneurial goals, financial independence and rewards, the desire for achievement and success (Carter et al, 2003; Krishamoorthy and Balasubramani, 2014).

With this understanding, the researcher posits that the land redistribution exercise in Zimbabwe appealed to the previously marginalised black population to have an opportunity to partake in new venture creation as the owners of enterprises or farms and this was also supported by the Government of Zimbabwe policies such as the indigenisation empowerment laws which also motivated a culture of being self-employed (Mazwi et al, 2019). The other attribute of motivation is distal motives which are typical of the need for boss restrictions, need to be self-endorsed, self-congruent and to be in control. In the Zimbabwean agricultural context this is attributable to the need for control from a previously marginalised position (Moyo and Chambati, 2013).

Man et al (2002) see a construct of resources competences such as commitment as the 'inner push' exhibited by entrepreneurs to consistently pursue their business focus and thrust. Lans (2009) concurs and describes commitment as a volition connotation which is invariably linked to motivational constructs such as overcoming opposition and self-efficacy. Thus, Resources competences lead to sustainability. Abaho, Aarakit, Ntayi and Kisubu (2016) in studies done in Uganda also share the same approach and view resources competences as critical for focus to strategy and conceptualization ability.

3.3.5.3 Mobilising Resources Competences

Resources competences entail human resource management and development among others. They also include leadership, planning and organizing and are thus expressed as an aptitude to organize internal, external, human, physical, financial and technological resources (See Figure 3.1). The mobilising resources competence is predominantly concerned with the gathering and management of resources needed to turn ideas into action. They can be in the form of material, non-material and digital resources. This competence also encompasses the ability to achieve more with scarce or limited resources. As a point of intersection with other competences, it is involved with getting and managing other critical competences such as technical, legal, taxation and digital competence as per the requirements at appropriate stages of turning ideas into action (Bacigalupo et al, 2016).

Resources are critical in an entrepreneurial undertaking and have the capacity to effect the transformation of an idea into action and this gives the novel entity a sustainable competitive advantage. Genc, Ozbag and Esen (2013) posit that for a new entity to have sustainable competitive advantage, the resources must be inimitable, devoid of substitution capacity, scarce and valuable. The resources whether material or immaterial or digital need the entrepreneur to

be knowledgeable in them so that they can gather them as pointed out by Bacigalupo et al (2016). Ahmad et al (2021) concurs that a knowledge of the resources and their envisaged impact on the entity culminates in the development of organisational strengths and the creation of a competitive advantage for the entrepreneurial activity. The entrepreneur has to acquire new resources and learn new competences to enhance the production of goods and services (Bacigalupo et al, 2016; Ahmad et al, 2021).

An entrepreneur must continuously gather new resources leaving no chance of stagnation or complacency so as to remain competitive in a changing business environment. Quaye and Mensah (2019), point out as they concur with the earlier assertion by Genc et al (2013) that if resources have value, scarce, difficult to copy and not easily transferrable then mobilising resources competences would explicate variance in business performance among peers.

The researcher posits through an example that from the above discussion a farmer who spots an opportunity in pedigree cattle breeds can import bulls and certified breeds from abroad so as to set up a breeder farm. The value of the breeders, their scarcity, authenticity through certification give the breeder farm a competitive advantage hence this becomes a basis for an improved agricultural performance. There is no way such an undertaking would survive unless the breeding farm possesses different resources both tangible and intangible inclusive of financial (to be able to acquire certified breeds), Technological, human (to manage) and knowledge resources (Jamal and Chellakan, 2020). Mobilising and collecting or gathering resources is key to the exploitation of opportunities (Valdez-Bocanegra et al, 2020). Turner and Muller (2003), point out that resources are critical in an entity so as to create a unique, innovative business which has intrinsic ambiguity (not easy to understand or imitate) in pursuit of the objectives. The success of the enterprise is the main objective and this is possible through compression of objectives towards a high business performance.

3.3.5.4 Financial and Economic Literacy Competences

Bacigalupo et al (2016) in their EntreComp framework, view financial and economic literacy competences as pertaining to the development of an aptitude and know-how on financial and economic matters. This entails the ability to conceptualise the envisaged costs of transforming an idea into a value creating undertaking. It may also involve the making of financial decisions through comprehensive monetary plans such as cash flow projections over a definite period. In this competence, the entrepreneur has to exhibit a capability to coordinate and manage financial affairs of the enterprises so that the entity may have a longer lifespan.

Abaho et al (2016), on Ugandan studies confirms that financial and economic illiteracy can lead to business failure. This is precipitated by ills such as lack of financial discipline, being tax averse

and limited business management skills. The researcher posits that since financial indicators can be used to measure business performance then it follows that an entrepreneur with limited financial know how or aptitude will not adequately gauge the entity progress and will not be able to plan, strategize, budget or make a trend analysis which will enable the determination of lead times and lag periods of the business. The researcher contends that such an individual or farmer in this study context may get de-motivated or frustrated and end up foregoing the business.

Eniola and Entebang (2016), view financial literacy as the ability and aptitude to sufficiently superintend over financial resources within the business processes with viable interlinkages with financial products and services. There is a high level of dexterity on management of financial resources coupled with both hindsight and foresight in decision making. Thus financial literacy can be viewed as the level in which an entrepreneur appreciates critical financial principles and the capacity to manage own funds inclusive of decision making and a long term focus (Gavigan, 2010; Remund, 2010). The researcher posits that financial literacy entails a professional stewardship of financial resources rather than a subsistence or hand to mouth set up.

Earlier research by Oseifuah (2010) points out that one of the major engaging decision making areas of an entrepreneur involves financial resources procurement, allocation and usage. These decisions have a bearing on financial results thus their research reinforces that this competence is critical. Coleman and Okyere (2016) concur and see financial management as of paramount importance towards business growth. Adapting from the concept of financial literacy, expounded by Eniola and Entebang (2016), the researcher from a farm context proffers financial literacy competence to be a conceptually a process by which a farmer manages and employs financial knowledge being cognisant that it has a significant effect on their behaviour, attitudes towards farming decisive actions consequently aiding to achieve a positive agricultural performance.

3.3.5.5 Mobilising Others Competences

Lans (2009) notes that an entrepreneur plays a role as a designer, manager and integrator of different capabilities. In this regard human resources management which has its roots in the Human capital theory whose main proponent is Becker (1964) is adopted to explain the growth of an enterprise. Lans et al (2017) note that investing in employees (human capital) shows a characteristic of the entrepreneur in relation to business performance. Syam, Pambudy and Priatna (2020) also note that creative, proactive and adaptive farmers are needed to compete and sustain an agribusiness and that can be achieved through their development in human resources management. The mobilising others competence involves the inspiration, effecting of enthusiasm on others, convincing them to be on board and it also includes the getting of support to achieve valuable outcomes Bacigalupo et al (2016) further points out that this competence

includes the demonstration of effective communication , ability to persuade others, negotiation skills and the provision of leadership in the organisation.

Inspiration is a component of transformational leadership. This was first postulated by Bass (1985) as cited in Ngaithe et al (2016) who views the components of transformational leadership as composed of idealised influence, inspirational motivation, intellectual stimulation and individual consideration. The art of inspiration is a product of the use of effective and communicative methods of communication. Ngaithe et al (2016), points out that this action is expressed by leaders communicating high expectations to subordinates thereby inspiring them through motivation so that they feel challenged and adopt the shared entity vision. Gomes (2014) posits that the entrepreneur promotes team approach, enthusiasm to their subordinates so that they see themselves as part and parcel of the positive vision through stirring high expectation which they adopt and take ownership of as well towards achievement. The needs of subordinates or employees become aligned to the organisational ones due to the influence of the entrepreneur. Ngaithe et al (2016) further explains that inspiring employees is dependent on the confidence of the entrepreneur as that makes the communication of a shared vision more appealing towards its adoption.

Patterson et al (1997), using the competing values framework quadrant on mobilising others and business performance pointed out that the other components of the quadrant such as internal processes (efficiency, tradition, and formalisation), rational goal (vision, pressure to produce, quality, customer feedback). And open systems (outward focus, reviews, flexibility, and innovation) were not significant predictors of business performance.

Managing People Differentiation Quadrant

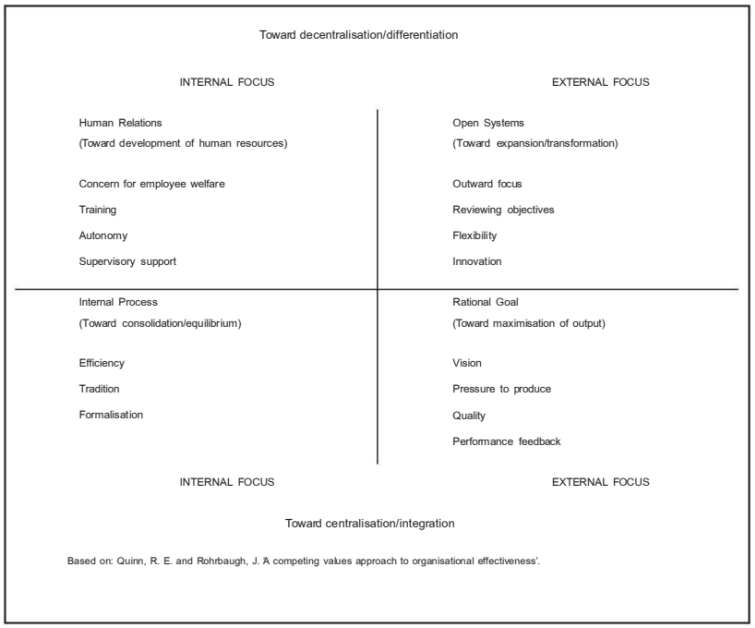


Figure 3.3 Managing People Differentiation Quadrant

(Source: Patterson et al, 1997)

However their study showed that the human relations quadrant is a significant predictor of business performance. The constructs for human relations include concern for employee welfare, training, independence and oversight roles and support. These constructs dovetail into the descriptives given in the EntreComp (2016) on mobilising others as an indicator of resources competence area and their effect is critical towards business performance.

The farmer must have an aptitude to manage employee skills and their knowledge in an effective manner so as to significantly sway production towards targeted objectives of the farm. These resources competences are an integral link that guide employees to be in tandem with the farm business focus and strategy. They influence the Agricultural Performance as an internal factor which can be channelled through its potential to enable a competitive advantage. The farmer has to also focus on incentives to motivate employees to focus on production (Hamadamin and Atan, 2019).

Mobilising others competences also include leadership as an indicator or construct. Yildiz et al, (2014) views leadership as the ability to inspire followers towards a common goal or vision. There is an element of impressing upon the followers certain obligatory tasks that the entity has to fulfil in order to enjoy a perpetual existence. In essence leadership thus impacts followers self confidence in partaking of the organisational goods and vision. In most farms under the land

reform, the farmer is the direct manager over the farm workers or employees thus the farmer is the leader of the organization. Laguna, Walachowska Gorgievski-Duijvesteijn and Moriano (2019) note that the leader exhibit characteristics such as high self-esteem, custodian of information, transparency, in work approach and operates mostly on intuition and instinct. The behaviour of the leader is mirrored in employee behaviour. The work ethic and innovativeness of employees is positively affected by what the leader displays. The support of the leader towards employee innovativeness inspires them to show open support and spurs them to perform better. Leadership also involves the demonstration of empathy towards all stakeholders in the workplace, the adoption of decisive actions, the creation of opportunities that generate value for the organization. The leaders themselves exhibit unique characteristics such as being visionaries, passionate, integrity and a high self-esteem (Nor-Aishah, Ahmad and Thurasamy, 2020). Turner and Muller (2005) note that leaders should have the competency to create and sustain the vision through adapting effective strategies, communication and have proper supervision of their subordinates. Miller, Wesley and William (2012) see leadership as the ability to lead and develop others, teams and other collaborative relationships. Leadership is a key underlying competence and Fisher (2009) sees it as an interpersonal skill which motivates others, manages people, and solves conflicts in an organization. Jardon and Martinez-Cobas (2019) observed that leadership has many approaches cutting across from the psychology field to management. In entrepreneurship, leadership involves influencing and directing the conduct of group members in pursuit of the organizational objectives inclusive of the identification and exploitation of business opportunities. With this multi-faceted approach to leadership, it can be viewed from another perspective as the way management reconfigure their organizations so as to benefit from new opportunities and to improve their capacity to perform at a satisfactory level enabling them to be competitive in an unpredictable environment. This is possible through the adoption of management methods and concepts which can be infused with knowledge in the execution of the business tasks (Sawaean and Ali, 2019).

One of the underlying constructs of resources competences is self-management. It is the aptitude and capacity for one to manage their behaviour, thoughts and emotions productively. It involves the ability to consciously know what to do and how to act in any situation. One understands personal responsibility in any area or situation. It is a function of self-control which is more inclined to the alignment of thoughts, emotions and actions with valued goals against any manner of distractions (Duckworth, Taxer, Eskreis-Winkler, Galla and Gross 2019). It is the researcher's view that this competency is critical in that the farmer who possess this aptitude is able to manage conflict in the allocation or tasks at the farm by being able to forego momentarily

distractions in favour of the core business or activities. Thus, a farmer has to assess the value of purchasing a private vehicle or a tractor. There is indeed conflict between momentarily gratification and long term value.

Then there is another attribute of the mobilising others construct called persuasion. It is a function of communication but critical as a component of resources competence area. It is in reality a task specific yardstick of the aptitude of an entrepreneur to sell in creative ways thereby enabling a customer to have alternative choices (Mozahem and Adloumi, 2021). Spinnuzi (2017) describes persuasion as an activity whereby an entrepreneur influences others for mobilization of resources such as capital, to obtain inputs, production and to sell their products and services. In persuasion the entrepreneur is willing to adopt innovative ways inclusive of altering or streamlining the product or the service to convince (persuade) the customer to buy the product or service. In essence, persuasion changes the perceptions of others in making choices through communication. Audretsch and Fielder (2022) concur in that it alters free judgement on an opportunity such that from another view one may argue and see it as manipulation.

3.3.6 The role of Into Action competence Area in agricultural entrepreneurship

Bacigalupo et al (2016) sees into action competences as encompassing taking of the initiative by an entrepreneur as they create value and take up challenges. There is a setting up of goals and clear cut definitions of priorities and action plans. The entrepreneur has a task to cope with ambiguity, uncertainty and risk as they make navigating decisions to handle a dynamic and ever changing environment so as to reduce risk. This calls for a need for teamwork, collaborations and networking so that there is a benefit of shared ideas and easier solving of challenges. Meanwhile the into action competences encourage learning by experience through peers, mentors and a reflection through evaluation of both past success and failure. This competence area consists of the following indicators such as taking the initiative, planning and management, coping with uncertainty, working with others and learning through experience (EntreComp, 2016).

3.3.6.1 Taking the Initiative Competences

This competence includes the ability to initiate activities that create value. Once this is achieved, one proceeds to take up the challenge through action and working independently to achieve goals. This is achieved through staying focused on the initial intention and the capacity to execute the envisaged and planned tasks (Bacigalupo et al, 2016).

Hughes and Morgan (2007) view taking an initiative competences as a function of risk taking. They assert risk taking is the willingness to implement activities and outcomes that possess an

inherent high level of uncertainty relative to expected output. They point out that for this competence, taking a risk hinges on the capability to tolerate two possibilities namely the risk of failing altogether and missing out on the opportunity. Their study construes that risk taking, proactiveness and innovativeness are associated with higher levels of performance in start-up businesses. Earlier research by Birkinshaw, Hood and Young (2005) also asserts that entrepreneurs who take an initiative in responding to threats and opportunities exhibit a more secure business performance.

Hahn, Frese, Carmen and Schmitt (2012) assert that taking an initiative is a function of being happy and also being proactive. They contend that life satisfaction can be a precursor for one to take up an initiative and this has a positive impact on proactive vigour which can be accepted as an indicator of business performance. The researcher shares this observation from the field trips encountered during the research, there are some farmers who seemed to be adventurous with a hobby like approach to try new farming combinations. These farmers exhibited a level of exuberance and they scored high in their agricultural performance. Though the research instrument was styled in such a way that there is a high level of anonymity, one respondent has been in the mind of the researcher. This respondent left his diasporean job in the United Kingdom to take up goat farming and breeding. They are fully booked with orders of the Boer goat studs up to mid-2024! Thus the researcher concurs with the assertion of Hahn et al (2012). Akwabi-Ameyaw (1990) in earlier studies concurs with this assertion noting that Model A farmers in Mufurudzi have a positive attitude, happy in their farm successes that they have accumulated household and capital assets from net income realised on maize and cotton sales from their well perfuming agricultural activities.

Kotey and Meredith (1997), view taking of an initiative as a personal value of an entrepreneur pertaining to the strategies they adopt in setting up and activities in the running of the business. Also in conformity with other researchers, they attest that taking an initiative confirms a positive relationship with business performance. Dasgupta (2023), points out that for entrepreneurs to overcome environmental and social challenges there is need for them to develop sustainable innovative initiatives. Their study shows that the particular initiatives of interest pertain to product and process innovations further confirming that robust initiatives have a significant effect on business performance.

3.3.6.2 Planning and Management Competences

Bacigalupo et al (2016), points out that the indicators for this competency include the setting of multi stage goals with definite priorities and action plans. There is also a need for the entrepreneur to be able to adapt to any volatility and uncertainty in the course of doing business. Into Action competence areas include a construct on planning. The business plan is more appropriate in an entrepreneurial undertaking rather than an outright planning process. This is largely due to its approach in that it captures the business current status, projected future and is a developing project that manages the timeline from an idea to an established entity. It helps manage business activities which hover between a complex set up and uncertainty (Ferreras-Garcia, Hernandez-Lara and Serradell-Lopez, 2019). Mansoori and Lackeus (2019) see business planning as a collection of principles and guidelines showing the envisaged structure for the operations and as a guide to strategic decisions and it has the capacity to be used as a communication tool to attract investment into the business. It does have the potential to reduce uncertainty by continuously converting projections (assumptions) into knowledge due to current understanding and through monitoring and evaluation of the business performance against the projections.

Gibson and Cassar (2005), on the causal relationship between planning and performance confirm the association between planning activity and business performance a fact evident in most extant literature. However they throw aspersions on the predominant perception of the causal progression of the relationship. They assert that planning for most start up projects is more likely to be adopted after the growth phase of an entity rather than prior. The researcher is inclined to this perspective with respect to the farm business in Zimbabwe. The FTLR meant that the emergence of new farmers was based on a risk taking initiative and there was no precedence or large scale farming for most of the beneficiaries. As such there was an ad hoc approach coupled with trial and error production in farming (Mazwi et al, 2019). However as the newly found status of being a ‘farmer’ set in, planning became an integral part of the business activity. Thus the approach by Gibson and Cassar (2005) resonates with the researcher observation on field work undertaken for this study.

Nuthall (2006) sees underlying competences such as strategy as critical towards strengthening performance of an organization in the long run. These entail the embracing of activities which involve planning for the short and long term, forecasting and projecting possible trajectory for the firm. This also involves goal setting, translating a vision to achievable objectives. Fisher (2009) sees strategy as critical in entrepreneurship as it gives direction to the organization. The researcher concurs with this view based on observations among the farming community.

Another core component of the strategic competences is management control. In essence management control is seized with 'who manages or controls the managers?' It involves the evaluation of specific units within the organization against projected forecasts. The particular forecast or projection is determined and derived from consultation with the specific line or section managers. It is mainly concerned with financial output. The periodic evaluation helps to identify shortcomings, to allocate more resources and to do corrective remedies. Any deviation from the forecast or planned outcomes, can be subjected to remedial action (Hasanudin, Yuliansyah, Said, Susilowati and Muafi, 2019).

In a nutshell, the researcher posits that management control as an underlying competency of into action competences is critical in an organization or a farm through enabling a focus on the core objectives of the farmer and the supervision of section managers towards a common goal.

Also, there is another underlying strategic competence called result -orientation. It is the thrust of an organization towards the output rather than the means to produce products or a service. The entrepreneur assesses the most viable and profitable process to attain targets. The focus is on results as per the projections, and the maximization of tasks and processes critical towards achieving the results. There are high expectations for performance, attention to achievement parameters in a highly competitive and demanding approach (Graham, Grennan, Harvey and Rajgopal, 2022). Farmers who exhibit this competence prefer current agricultural practices which emphasize high productivity and are reluctant to adopt new approaches such as agri-environmental schemes (AES). Their focus is on the end result (Vainio, Tienhaara, Haltia, Hyvonen, Pyysiainen and Ponta, 2019).

Finally, one has to look at another underlying competence known as strategic orientation. It pertains to the capacity to enjoin and link the long term entrepreneurial vision to current tasks operating towards sustainability with a responsibility to design steps to correct past setbacks and to put up a framework against failure. Obeidat (2016) further postulates that strategic orientation reflects an enterprise operational, marketing and entrepreneurial posture towards achieving its goals by taking risks, engaging in innovation, being proactive and focusing on future orientated plans. Strategic orientation is regarded as the response of a firm or enterprise to the operating environment as it seeks to improve performance and to attain a competitive advantage (Kumar, Boesso, Fwotto and Menini, 2012). Research done by Nybom, Hunter, Micheels and Meha (2020) shows that strategic orientation is dependent on contextual factors such as competitive intensity and the managerial aptitude. Competitive intensity is affected by portfolio approach whereby a farmer may direct resources towards efficiency and allocate other resources to market research so that they act on opportunities thereby enhancing the business performance.

Into Action competences role in an organization direction

Figure 3.4: Illustration of Into Action competences role in an organization direction
Source: Author -Adapted from Fisher (2009)

3.3.6.3 Coping with Uncertainty, Ambiguity and Risk Competences

This competence like all others is not necessarily a standalone construct but intersects or cuts across other competency areas (Bacigalupo et al, 2016). The EntreComp (2016) framework posits that it is an expectation that an entrepreneur should decide on the course of action to take when the situation is uncertain, when the information is scanty, amorphous, and ambiguous or if it the risky propensity is high. The entrepreneur must be able to be innovative on testing ideas at inception so as to mitigate against failure. There must also be an enhanced aptitude to handle dynamic situations flexible and timely.

Von Gelderen, Frese and Thurik (2000) point out that entrepreneurs who perform poorly employ a reactive strategy. In essence they have no plan to mitigate against uncertainty and only 'react' after encountering a pitfall. On the contrary they note that high performance entrepreneurs adopt a complete planning approach. This is ideal in a complex environment as there is an element of forward planning as the entrepreneur anticipates a variance in outcomes and therefore prepares or plans on mitigatory actions. The researcher proffers an ideal example of a farmer who invests

in alternative water supply so as to mitigate on the uncertainty of rains thus protecting cropping and livestock from moisture stress and dehydration respectively.

Coping with ambiguity is a critical competency in business performance. King and Zeithaml (2001) acknowledge that coping with ambiguity and inimitability leads to sustainable competitive advantage though they point out that the causal relationship is indeed a conundrum. However Liedtka, Church and Ray (2008) point out that being intolerant to ambiguity can stifle entrepreneurial innovativeness. They argue that ambiguity intolerant entrepreneurs tend to discard or disregard even if the ambiguity pertains to progressive information. Thus this poses a challenge on the accuracy of assessing the ability to cope with ambiguity in decision making.

The researcher posits that tolerance and ability to handle ambiguity should be a critical competence in that agricultural performance can easily have unintended consequences or outcomes. For example a sudden and unexpected weather change can have unintended outcomes. Thus agricultural performance has an inherent ambiguity due to external factors such as weather variations. Wheat due to be harvested can be spoilt overnight by sudden rains and for other crops such as maize it is possible to lose the entire crop to overnight unexpected frost.

3.3.6.4 Working with Others Competences

The EntreComp Framework (2016) posits that this competence consists of teaming up, collaboration and networking. This entails working with and cooperating together with others to bring to action ideas and to develop them further. It also entails solving problems and the capacity to withstand competition in a proactive manner rather than reactively. Lans, Bergevoet, Mulder and Van Woerkum (2005) view the underlying construct of working with others competence area as person to person or individual to group interactions. These can be exhibited through communication, negotiation, networking, teamwork and persuasion. Zhang, Macpherson and Jones (2006) weighs in by noting that individual interactions to others with similar interests may encourage and support entrepreneurial learning. Lans (2009) further explains that networks enable the creation and development of new ideas and obtaining of resources and also involves the integration of peer ideas and views in an enterprise. Negotiation abilities are a precursor to tangible deals. In adopting new technologies or innovations, it has been noted that they may be tension due to migration from the current situation thus negotiation skills are of critical importance between the farmer and other stakeholders. Negotiation and consensus can lead to production positive outcomes (Far and Rezaei-Moghaddam, 2019)

Davison and Mountain (2016) view working together as a component of organisational analysis. They posit that working together entails on how team members in the entity relate to each other.

It involves the development and maintenance of effective communication and the stakeholders (employees, employers) are all aware of the dynamics of decision making and strategy formulation. Working together in their view improves relationship quality and consequently productivity. Smolka, Verheul and Heugens (2018) looked at entrepreneurs involved in venture performance. They posit through their research findings that ventures perform positively due to the synergic effect (working together of two or more entrepreneurial logics in tandem. This is due to the fact that working together entails causal and effectual reasoning and the synergic potential of the two logics produce an interactive action which has a positive impact on business or venture performance.

Networking is critical to support innovation. With technological and support initiatives emerging globally, networking can help agricultural entrepreneurs to forge contacts with others that can offer innovation back up services. This also allows agricultural entrepreneurs to get resources needed in their businesses at economic prices than relying from otherwise expensive local suppliers and also benefit from shared marketing of products. Networking is involved in the promotion of novel production technologies and consumer preferences intelligence thus bridging the divide between farmers and the customers (Dias, 2021). Karayanni (2015) looked at networking as a relationship between various stakeholders such as customers, suppliers, entity members and the resultant effect on business performance. Their study showed that the wide array of various stakeholders within a market had a stronger explanatory effect on business performance. Nyangarika (2016) views networking as the capacity to initiate, maintain and to encourage a relationship with diverse stakeholders towards an entity competitive advantage. Thus this entails the exchange of ideas, resources towards an entity advantage. There is an element of adopting a collaborative system where there is development and exchange of skills, knowledge and alliances in business facets. Network thus can allow entrepreneurs to identify opportunities and resources which then explains why entities from information rich countries fare better in terms of business performance.

Jardim (2021) aptly defines teamwork which is a core attribute of into action competences as a joint action of stakeholders in which individual perceptions and preferences are subjugated and made submissive to the efficiency of the organization thereby yielding higher results than from individual effort. Teamwork thus impacts on the creation of new entities and the development of innovative activities. Tripathy (2018), points out from extant literature and other writings that entities have found out that they can achieve positive outcomes when individuals of diverse capabilities are transformed into a team. Thus teamwork becomes a skill that is also a precursor

to improved business performance. Therefore teamwork entails the enjoining of an individual with their own ideas, willing to develop and modify them with other talented individuals.

Goldstein and Gafri (2019) note that from a cultural and social view, teamwork is faced with challenges in that the diversity so created by different individuals, entails adaptations, redefining of goals and becomes a learning process. Adaptation involves accepting and incorporating the individual member knowledge, experience and skills towards a common goal. Individuals within the enterprise get to learn from each other. Ahmad and Manzoor (2017) point out that teamwork has a significant and positive effect on organisational performance. Teamwork in their view can improve productivity and help gain a competitive advantage. The likelihood to achieve organisational goals is higher and an improved productivity and efficiency is possible through a higher performance of employees operating as a team.

Management has a role to play as observed by Jasinska (2019) in that their activities are critical for fostering teamwork through motivation and a conducive work environment. Motivation involves offering support on activities, incentives, appreciation, and recognition of subordinates initiatives and the handling of challenges as they arise. Jasinska (2019) further elaborates on the conducive environment as entailing information transmission, feedback, approachability, support for innovativeness and encouragement and problem solving. This brings into perspective another indicator of working with others called conflict resolution or problem solving. Hotepo et al (2010) point out that scarcity of resources is a major cause of conflicts. They point out that if conflicts are managed tactically, it can lead to heightened organisational innovativeness and an improvement in business performance. Also on problem solving, Kravchenko (2013) points out a myriad of business performance problems. Among them is uncertainty of the external environment and limited information. There is also the variance between projections and actual business performance. The other business problem is management related and it involves the challenge of control and coordination due to decision making processes. Then there is the other problem area due to delayed reaction to changes in the business cycle. These problem issues are not necessarily exhaustive as such and the entrepreneur must be able to identify a problem situation and be able to come up with options and attributes to evaluate remedial actions.

However earlier studies by Forrester (1994) argue that economic matters can be complex and problem solving can be a challenge. Most prominent is the challenge of an academic approach versus practical methods on problem solving. At times problem solving is affected by the disparity between individual goals and organisational ones thus affecting business performance. This can be seen through agent's needs whereby a manger can have their own intents at variance with the entrepreneur focus and troubleshooting problems becomes difficult. The researcher proffers

an example of a farmer who hires a qualified farm manger with a view to commercialise the farm operations. The acquired manager may be content with their remuneration and may not be willing to go out of their way to ensure goals are met or surpassed. Whatever the outcome in productivity their remuneration is what matters. Thus there is a conflict in that the manager is motivated by self-interest yet the expectation is that they should act in the farm best interest.

3.3.6.5 Learning through Experience Competences

The essence of this competence is learning by doing. The entrepreneur has to utilise any initiative for value creations as a chance to learn something. Learning can be acquired through interaction with others such as peers and mentors. There is also the capability for an entrepreneur to be able to reflect and learn from positive and negative outcomes in their endeavours or from other entrepreneurs (Bacigalupo et al, 2016).

Learning orientation is an underlying competence of into action competences. The attributes of learning orientation are the acquisition, dissemination and the application thereof of knowledge. It is an important and basic attitude towards learning by managers thus influencing the organization to utilize such knowledge. Sawaean and Ali (2019) emphasize that an enterprise exhibiting such attributes will experience strategic renewal and be capable of achieving a perpetual competitive advantage. The capacity of an enterprise to have a higher performance is enhanced through the use of knowledge (Kiyabo and Isaga, 2019). Thus, learning orientation is critical to enable the enterprise or farm to be at par or to surpass a changing environment. The learning thrust influences the capacity of the farm to be innovative.

Bhatti, Larimo and Coudounaris (2016) point out that an entrepreneur experiential learning adds to the organisational knowledge and this has a ripple effect such as building trust in network relationships leading to alertness to other opportunities. The entity also benefits through the internalisation of new knowledge filling a knowledge gap which affects the organisation towards an improved business performance. Ma Prieto and Revilla (2006) concur with this observation and posit that the internalisation of knowledge acquired from experience means those entities with higher levels of knowledge and learning flows obtain an improved performance. Emden, Yaprak and Cavusgil (2005), emphasize that experiential learning is a critical factor in enhancing superior business performance through enabling know -how transfer. Also viewing experiential learning through inter-business interactions, a farm can enhance its capabilities through access to novel technologies, complementary skills and know how beyond the inherent skill complement. In the Zimbabwean agricultural context, the researcher posits that a farmer can learn through peers on cropping techniques, post-harvest handling, and animal husbandry among other farming activities. The pitfalls experienced by fellow farmers become warning flags to peers within

the sector and the successes of others become a potential yardstick for improved agricultural performance. Also on the Zimbabwean context, Manyise, Dentoni and Trienekens (2023) pointed out that smallholder farmers in Masvingo province form sharing partnerships with peers where they dabble with scarce resources experimentally to uncover innovative solutions and this ensures that their losses are minimal under the most adverse conditions.

3.3.7 The role of climatic factors in agricultural entrepreneurship

Unganai and Murwira (2010) citing Aguilar et al (2009) and Tadross et al (2009) assert that climatic factors such as rainfall are a constraint to agricultural productivity rather than land. FAO (2005) notes that only 37% of Zimbabwe arable land receives adequate rainfall for rain fed agriculture. Climate variability leads to vulnerability to farmers due to threats such as droughts. This view is also shared by Mavedzenge et al (2006) who acknowledges that climatic constructs such as drought are almost a norm in Zimbabwe hence the need to build a response capacity using local means such as advance planning and agreements for movements for livestock during droughts. This observation is shared by UNDP (2012) who assert that climate changes are a major impediment to food security. Climate Change now has a role in agricultural development and it is now inevitable for consideration. Scherr, et al (2012) points out that climate change has increased the risk of engaging in farming. Predictions show that by 2060, cereal production globally, would diminish by between 1%-7%. Climate induced water scarcity, land degradation could affect yields negatively.

Zimbabwe Agro-Ecological Zones

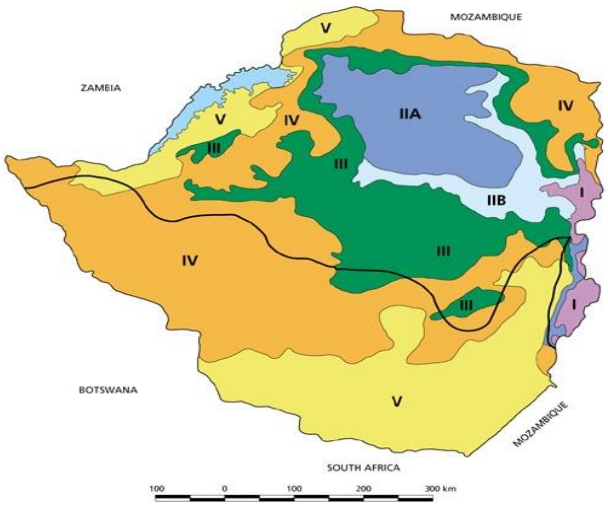


Figure 3.5: Zimbabwe Agro-Ecological Zones

Source: FAO (2021)

Moreover, Zimbabwe has FIVE agro-ecological zones with a different climatic conditions. The northern regions of Zimbabwe receive 750 mm to 1250 mm of rainfall while southern areas receive between 250mm to 500mm per annum. Mutambara and Munodawafa (2014) further note that climate variability in Southern Africa is a glaring reality. Rainfall varies between 30% to 35% year on year and is in fact lower by 20% from the 1970s. They further contend on studies done in Chiredzi (South eastern Zimbabwe) that production and sustainability of irrigation schemes showed variances due to climatic issues. Chari and Ngcamu (2017) see climatic constraints posing a greater challenge to agricultural food production and creating a ripple effect on the agro based manufacturing industry.

As such the variability of climate can be managed through mitigation such as adaptation, response, preparedness actions all being considered as part of a risk matric (Unganai and Murwira, 2010). Mitigation efforts include the deploying of improved varieties, soil moisture management in affected areas. Despite the debilitating effect of climate factors, other adaptation strategies such as irrigation can be employed to mitigate against climatic variability (Mutambara, 2016).

3.3.8 The role of finance in agricultural entrepreneurship

Maphosa (1998) in earlier research noted that indigenous entrepreneurs perceived that the main impediment to their business success was finance. They viewed other challenges as incidental to or a direct effect of a financial challenge inhibiting their business development. Leresche-Muir and Muchopa (2006) further concur and assert that access to finance is necessary in the business operations. The capital injections promote innovation. As such most farmers are failing to secure adequate finance to run their farms (Muziri, 2009).

The lack of collateral is a huge impediment as the offer letters for new farms have no collateral value. Thus, farmers are unable to farm sustainable as they cannot borrow to finance operations (Mutema, 2012). However, farmers do get by through limited personal savings and family remittances for financing options. Finance is key in enhancing productivity and output in some views. However other scholars as noted by Masiyandima et al (2011) argue that agricultural productivity is not directly dependent on finance as a major variable but rather depends on technological advancement and mechanization.

3.3.9 Entrepreneurial Competences as a Strategy

The term strategy has military roots and is derived from the Greek word ‘strategia’ which pertains to a general or ‘office of a general’. From this military background, strategy becomes the art and science of marshalling political, economic and military forces of a country in pursuit of maximum

support to chosen policies in peace and war. (Strategy, Merriam-Webster, 2023). In a broad sense, strategy involves setting goals, assessing actions to achieve the goals and the marshalling of resources to accomplish the actions (Lawrence, 2013). Strategy thus explains how the end product will be achieved. It becomes a pattern or system an organisation adapts to so as to achieve a higher performance in its environment.

In this study, entrepreneurial competences are viewed as activities that can be adopted so as to improve agricultural performance. This view has its roots in the works of Henrik von Scheel (2013) who sees strategy as activities carried out or adopted to deliver a unique mix of value so as to have a competitive edge over rivals or other organisations within the cache (Luca, 2020). Behling and Lenzi (2019), pointed out that entrepreneurial competences do contribute to a more consistent strategic focus. They further note that entrepreneurial competences have the capacity for further enhancement through training and experience. Delving into voluntaristic perspective theories, Behling and Lenzi, (2019), posit that an entrepreneur can through their free will formulate strategies that can align and match the entity trajectory to a changing or dynamic environment. Thus this perspective sees strategic behaviour as a product of a voluntaristic approach. It then follows that from this approach, entrepreneurial competences enhance the entrepreneur capacity to come up with strategy.

Strategic management in entrepreneurship is a discipline in itself under the auspices of strategic entrepreneurship. This study however discusses the point of contact with entrepreneurial competences in that the act of engagement of opportunity and reward seeking behaviours to create wealth is in line with the dictates of entrepreneurial competences. Whilst this may seem to be the domain of strategic entrepreneurship, it is also an attribute of entrepreneurial competences (Ireland et al, 2023). The business world is highly dynamic and the changing circumstances entail an adoption of new perspectives in order for entities to remain relevant, viable and competitive (Dogan, 2015). The agricultural sector is no exception and thus strategic management is still relevant in this study not as a titular consideration but as a core consideration. For survival, an entity has to be prone to adjust, strategically and entrepreneurial. The importance of strategy entails managing entrepreneurial competences and pursing activities or strategies so as to get a competitive edge over rivals or the business environment. Thus this study adheres and relates to the existence of a nexus between entrepreneurial competences and strategy as the researcher contends that the epitome of this study is optimising entrepreneurial competences and adjusting them to a dynamic environment so as to improve agricultural performance.

3.3.10 The role of Demographic Profiles in agricultural performance

The study research instrument considered the following demographic profiles: farm classification, age, province of operation, marital status, family unit, school attending dependents and the level of education of farmers. Vallabh and Mhlanga (2014), point out that whilst there is more research on business skills and performance, researchers seem to pay an afterthought approach or rather a peripheral glance to demographic factors. The researcher reviewed three components which are age, marital status and the level of education.

Research by Atibioke, Ogunlade, Abiodun, Ogundele, Omodara and Ade (2012), showed that 75% of the respondents in farming were in the age group of 30-50 years. They assert that younger people have a higher likelihood or inclination to embrace innovative and technological ways to improve farm performance. Research in Tanzania by Kulyakwave, Shiwei and Yu (2019), showed that 52% of the respondents had an average of 45 years. Those within the mean age range had higher agricultural performance in terms of yields implying that the younger farmers are active and their participation in adopting novel practices render them effective. Also in another study, using regression analysis across three age groups of 15-19, 20-25 and 26-29, Ahmed and Kar (2019), showed that as the entrepreneur age increased, the business performance increased.

Atibioke et al (2012), found out that 75% of the respondents were married. They assert that marriage is a means of generating family labour who then participate in production, processing, marketing and the employment of technologies. Kulyakwave et al (2019), showed that married respondents had an advantage in their study where rice yields were higher and they attribute that to labour benefits.

Studies done in South Africa by Vallabh and Mhlanga (2015), show that demographic profiles such as gender, education and income have a positive impact on business performance. They proffer that education and training are essential for improved business performance as skilled personnel can be complementary to future needs of industry. Other studies in Nigeria by Tokula (2019), show that education and access to extension services have a significant positive impact to technology adoption in farming. They assert that educated farmers are receptive to innovative agricultural techniques. Kulyakwave et al (2019) also showed that 56% of the respondents who had accessed primary to tertiary education exhibited higher yields relative to respondents with less education.

3.3.11 Measurement of Agricultural Performance

Yildiz and Karakas (2012) pose a question on what dimensions and parameters can be used to measure business performance. Some researchers use financial performance as a proxy for entity performance through use of accounting methods for profitability. Others use performance outcomes such as customer satisfaction, stakeholders satisfaction and some use growth among others. Taouab and Issor, (2019) acknowledge that measuring business performance is still contentious among researchers on what parameters to adopt. Thus there is no operational definition and the available literature mirrors personal perceptions of scholars leaving definitions which are abstract, vague, unclear and ambiguous. However, they all acknowledge that business performance is the evaluation of all efforts concerned with achieving an entity goals. The researcher concurs with this view and adopts it as a definition of Agricultural Performance since a farm is a business unit of agricultural activity or production. Thus, Agricultural Performance becomes an evaluation of all efforts put in to realise a business goals and there must be a way to execute the measurement. Performance in essence is a concept that quantitatively or qualitatively determines what is produced as a consequence of planned business activity (Yildiz and Karakas, 2012). Measuring Agricultural Performance then becomes a process of quantification for efficiency and effectiveness of work executed (Arifeen, Hussain, Kazmi, Mubin, Latif and Qadri, 2014).

To measure business performance, it is imperative that there should be a relationship between the variable being investigated and a specific construct of the business performance. Financial measures can be used either as objective or subjective. On financial measures, financial ratios such as return on assets (ROA), are mostly accepted as a measure of performance. However, research has shown that in financial measures, there is no benefit of using either subjective or objective measures as the results are similar and comparable. Garg, Joubert and Pelliser (2004) asserts that the choice of either depends on availability of the attendant performance indicators peculiar to either approach. Thus, rather than compare them one can use both so as to validate the research. The role of profit as a relevant measurement of business performance can be regarded as indisputable (Santos and Brito, 2012). They note that profitability assesses an entity past capability to generate returns. However they assert that other financial indicators such as growth and market share are necessary. This argument then brings to the fore the need to employ dimensional models to measure firm performance. Constructs can be either unidimensional or multidimensional as shown in the diagram below.

Models of Business Performance

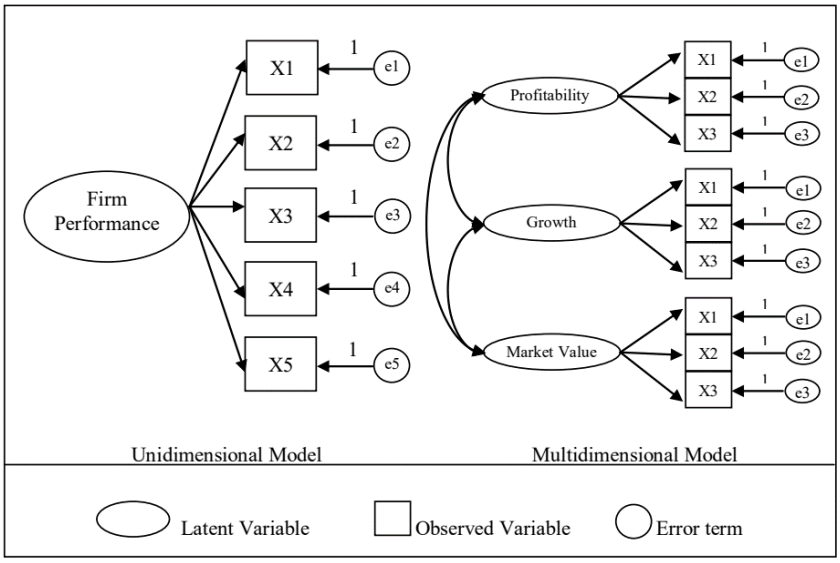


Figure 3.6 Unidimensional and Multidimensional Models of Performance
Source: Santos and Brito (2012)

On one hand, the multidimensional model implies that each dimension represents one component of the overall performance of the firm and this is represented by a particular group of indicators. The indicators of the same domain group in one dimension and have higher correlations within the group rather than indicators of different dimension. On the other hand, unidimensional model suggests that all indicators show the performance of the firm in an interchangeably manner thus implying that all indicators are highly correlated. This then raises concerns in that it is deemed as a simplistic representation yet business performance is a complex construct (Combs, Crook and Shook, 2005). The researcher however contends that agricultural performance qualifies to be measured with a unidimensional model as complexity due to stakeholder concerns and expectation is somewhat limited to incorporated agro-companies and is minimal in owner managed farming concerns as observed during fieldwork of this study. Thus profitability was adopted for this study. The indicators for profitability are return on assets, return on investment, net income/ revenues, return on equity, economic value added. This study considered net income/ revenues as the data was readily available from the respondents.

Indeed, conceptualization of business performance has been subjected to different approaches in pursuit of analysis through empirical studies. Nwachukwu, Chladkova and Zufan (2017) note that most studies measure business performance through accounting measures such as

profitability. This school of thought tackles business performance from indicators such as customer satisfaction, stakeholder satisfaction, growth and market value. This study adopted financial indicators as a means to explicate Agricultural Performance. The financial indicator which was adopted was profitability (Lawal, Iyiola and Taiwo, 2018). This view is supported by Bumbescu, (2015) who views farm profitability as an assessment of the difference of two indicators annually which are the volume of production costs incurred during farm activities and the income earned. Profitability itself then becomes an expression of economic efficiency expressed through profit and rates of return. During the distribution of questionnaires for the pilot study there seemed to be lack of understanding by farmers on assessing profitability in livestock and crop production. The researcher then adopted the Zimbabwe Revenue Authority (ZIMRA) template for livestock profitability which is however standard for livestock accounting as a guide on profitability. The template was loaded on an excel spreadsheet for data processing. For farmers in poultry and piggery the respondents had no challenge determining livestock profit. For crop production the researcher adopted yields as a measurement construct on performance.

LIVESTOCK RECONCILIATION STATEMENT

for the period ended 30 July 2022

	Bulls	Cows	Weaners	Heifers	Steers	Calves	TOTAL
Stock at 30/07/2021	25	582	20	55	44	358	1084
Purchases	-	-	-		-	-	-
Births						203	203
Promotion in	-	15	351	20	-	-	386
	25	597	371	75	44	561	1673
Promotion out		-	20	55	-	351	426
Deaths	2					7	9
Sales				-	40		40
Missing							0
Stock at 30/07/2022	**23**	**597**	**351**	**20**	**4**	**203**	**1,198**
Valuation							
FSV (USD)	850	500	250	300	300	100	
Total (USD)	19,550	298,500	87,750	6,000	1,200	20,300	**433,300**
Zimdollar Value	Rate	450					194,985,000

LIVESTOCK TRADING ACCOUNT

for the period ended 30 July 2022

	$
Sales	12,000
Closing stock	433,300

Income	**445,300**
Opening stock	382,750
Purchases	-
Livestock expenses	14,000
Livestock Profit	**48,550**

Figure 3.7: Determination of livestock Profit
(Source: J K Mankunzini Finconsult (Private) Limited

Business performance as alluded prior can be assessed through financial and non-financial indicators. There is the balanced scorecard technique which assess business performance from customer feedback, learning, growth and inherent business processes. The balanced scorecard was developed by Kaplan and Norton in 1996. There is also the approach of financial and market metrics which employs previous data, profit margins, return on invest (ROI), ROI growth, market share, market share growth, sales growth and overall competitive position (Sakib, Rabbani, Hawaldar, Jabber, Hossain and Sahabuddin, 2022). The proponent of the approach is Li , Ragu-Nathan and Rao, (2006).

For crop production yield was used as a yardstick for agricultural performance as depicted by

Y (yield) = P/A

Where P is the weight/ quantity of crop harvested

A is the area planted

Other notable business performance measurements include the Economic Value Added (EVA). This is based on the maximization of shareholder value. Shareholder value is realized when the rate on return of capital exceeds the cost of that capital. This method is mostly applicable to business under the care of managers rather than the owner managed types such as most farms. EVA is a measure of internal performance and thus managers act more like the owners (Garg et al, 2004). However, it has flaws such as its confusing applicability, lack of standardization to Generally Accepted Accounting Practices (GAAP), poor verification of information, ambiguity on productivity measurement and lack of benchmark information needed to comparatively analyse.

Finally, the other notable Agricultural Performance measurement tool is the Data Envelopment Analysis, (DEA). Coelli (1995) points out that it is a relative measure of efficiency given by a business observed outputs and inputs and it identifies the best practice in a group. Each firm in a group is then measured comparatively to the best farm. The knowledge of which farm is efficient

comparable to the inefficient ones, enable one to understand the nature of inefficiencies so as to allocate scarce resources to improve productivity (Garg et al, 2004).

3.4.0 Theoretical Framework

There are various theories which attempt to elucidate entrepreneurship as a precursor to improved business development and performance. This research considers those which integrate entrepreneurship competences and business or Agricultural Performance. An ideal theory thus should be able to provide an insight into how entrepreneurial competences can be a driver of improved Agricultural Performance. Though entrepreneurship may not be distinctly measurably as a construct, its attributes or competences can be used to assess its impact or influence.

3.4.1 Schumpeter's Innovation Theory

Of the proponents of entrepreneurship, Joseph Alois Schumpeter (1934) is arguably the foremost. He postulated a functional definition of entrepreneurship as the art of carrying out new combinations in pursuit of economic development (Sledzik, 2015). He further expanded that approach to include the innovation theory. This theory asserts that innovation is the pivot of economic change that continuously revolutionizes the economic order from within and simultaneously destroys the older and creates a new one (Hanush and Pyka, 2007). Thus, Schumpeter postulates that innovation is highly 'destructive' in nature. Teece (2014) comes up with an interesting term though Schumpeterian in content. He brings the term 'seizing' which refers to the process of addressing opportunities and then making business or investment decisions based on such so as to benefit from the full exploitation of the opportunity. He sees innovative opportunities as likely to upset corporate norms and trigger contrary reaction. Thus, innovativeness is viewed as 'destructive' or a challenger to established dictates. Bandinelli (2017) notes that the Schumpeter theory links social and human dimensions to the economic sphere at variance to the mainstream or orthodox approach. Innovation becomes a source of extreme and revolutionary activity. Ashoka (2016) delves into the metaphysical when viewing innovativeness as 'a possession' that can persuade societies to leap into the unknown! In essence, the creation of a new product brought about by innovation, gives the entrepreneur competitive advantage over rivals. In the process any previous innovation gets 'outdated' and 'destroyed'. The same fate awaits the current innovation.

Schumpeter sees entrepreneurs as starting new businesses and as providers for the engine of economic growth. The entrepreneur is a dynamic actor, who breaks from the norm or market equilibrium through innovativeness as a precursor to economic development. Storper (1998)

sees innovation as a permanent change of production technologies and organizational approaches in pursuit of improved efficiency and production. Osunde (2014) further asserts the Schumpeterian perspective by noticing that the variances in economic output of global countries is predominantly a function of the quality of entrepreneurs in the respective nations. He further attests that the skills development of entrepreneurs creates growth potentials among small to medium enterprises and this ensures that there is availability of goods and services thus generating income and also reducing poverty levels.

The discovery or realization of an opportunity, stimulates innovative behaviour which helps to improve productivity. Purcell (2019), sees innovation as critical to growth of small to medium enterprises and the exploitation of the opportunity through new ideas brings out better products and services thus increasing income and reducing poverty. In this Schumpeterian view, innovation drives development through five stages.

Schumpeter Five Stages of Product Development

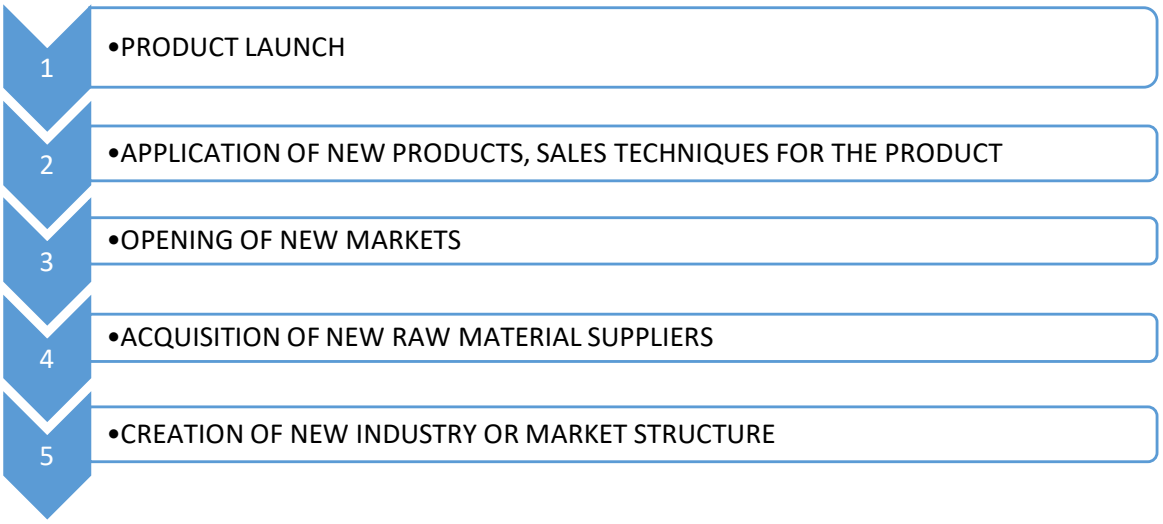


Figure 3.8: Schumpeter Five Stages of Product Development

Source: Author-Adapted from Schumpeter (1934)

Swedberg (2000) from a Schumpeterian perspective sees the entrepreneur as an individual motivated by an ambition for control and power, focus to triumph and a fulfilment on achievement. In this view, innovation becomes a product of 'destruction' of old methods of performing tasks through creative new methods. The entrepreneur may not adapt to external influences but would rather be 'destructive' on the inherent system equilibrium by creating new products, methods that are contrary to existing systems and activities.

On observing the competence clusters, ideas and opportunities competences resonate with this theory. These competences relate to recognition and development of market opportunity. Thus, they hinge on innovation as expounded and defined by the Schumpeterian view. The main function of the entrepreneur is to allocate existing resources to new uses and novel combinations in the role of the pivotal innovator. To Schumpeter, entrepreneurship is innovation and the actualization of the same (Schumpeter, 1934). An organization or an entity needs to have adequate skills to perceive opportunity competences so as to have a competitive edge (Shane and Venkataraman, 2000). They further state that innovation is vital to enable a competitive edge which widens opportunities. Porter and Kramer (2019) note that if managers are motivated to be innovative, to discover opportunities in the agricultural sector, this can be a catalyst towards growth of the business.

Research from Uzbekistan by Gulnoza, Nasimovna and Akramovna (2023), points out that agricultural performance may improve through adoption of innovative developments by farmers. However they note that the slow uptake of innovative and advanced technology by farmers due to sentimental reasons remains a hindrance. Thus the researcher concurs with their recommendation that farmers have to develop an economic trajectory in their activities so as to embrace agricultural modernisation and economic growth. An entrepreneurial approach will encourage the implementation of technical and technological innovations thereby reducing the current production costs.

From the Schumpeterian perspective, the entrepreneurial farmer becomes the central actor at the nexus of new technology and the market to produce an innovation. Thus Schumpeter (1934), asserts that there is a distinction between an invention and innovation (Faure et al, 2018). However the entrepreneur in agriculture has to contend with challenges in adopting new technologies and a case in point is the debate on genetically modified organisms and organic agriculture. The subsequent conflict has an effect on economic gains when viewed as a traditional farming versus technological farming contest. Chiffoleau and Touzard (2014) thus see a need of collaborations between stakeholders on the adoption of innovations that pertain to sustainable food production.

3.4.2 Self-Efficacy Theory

This theory has its roots in the works of Albert Bandura (1977) who postulated that an individual's perceptions of their innate capabilities or competences are critical to a successful outcome (Gallagher, 2012). The theory incorporates individual perceptions of risk or problems and components of the attendant actions to deal with the risk or to solve problems. Thus Bandura (1977) asserts that performance success depends on personal and situational factors, past experience such that individuals process and weigh the challenge at hand according to their capabilities and they then regulate their behaviour and effort accordingly (Van Hout and Emmelkamp, 2002).

This theory is appropriate in understanding the resources competences in specific constructs such as an unwavering focus and problem solving and their impact on outcomes. Poon, Ainuddin and Haji (2016) observes in concurrence that when an entrepreneur is faced with barriers in their pursuit of desired outcomes, individuals with a high level of self-efficacy make efforts to solve the particular impediments or problems. Bandura (1977) postulates that this theory is preoccupied with how an entrepreneur can operate with the skills they inherently have. Thus, the theory assesses whether entrepreneurs have abilities peculiar to an execution of the task and the expectation that those abilities can be channelled towards a desirable outcome.

Stroe, Parida and Wincent (2018) further elucidate self-efficacy as an ability to achieve set goals of a new venture, whilst exhibiting and exuding confidence of a level that induces a higher likelihood to attain the business goals successfully. The entrepreneur further shows a dimension of future focus orientation that guides them to scan the environment for both current and expected opportunities. This helps to set clear, tangible, achievable goals though taxing, draining and vexatious in terms of attainment.

Indeed, from a resources competences standpoint one can concur with Vaivode (2021) who sees self-efficacy as a cognitive component of cause and effect reflection of the confidence expected in entrepreneurs to thrive for success in achieving their goals. Entrepreneurs with an aptitude for resources competences have a higher likelihood to be future orientated and to visualize possible success inclined set ups or entities to steer their activities. A higher self-efficacy has an inclination to planning commitment through the setting of clear, challenging goals and a self-imposed monitoring and evaluation regimen. Bandura (1997) sees self-efficacy as a motivational construct that has a bearing on personal choices, objectives, effort, perseverance in entrepreneurial exploits. Empirical studies show that there is a positive relationship between self-efficacy and organizational outcomes. Thus self-efficacy sufficiently predicts the level of perseverance against challenges in the pursuit of entrepreneurial activity.

Self-efficacy has been pointed out as critical in farming through the role it plays in the adoption of novel farming practices, land conservation focus and climate change management (Yasue, Kirkpatrick and Davison, 2020). It has an impact on the confidence of the farmer in decision making and the propensity towards sound capabilities to manage change (Brown et al2022). Bux and Van Vuuren (2019) assert that self-efficacy is a link between entrepreneurship and entrepreneurial intention as the positive outcome of the business performance is dependent on the self-belief of the entrepreneur in their capabilities and abilities to execute the tasks. Agholor (2019) posits that the awareness, attitude and values one attaches to their capabilities and abilities has an effect on their farm performance.

Thus Agholor (2019) postulates that due to the cognitive aspect of self-efficacy, a farmer becomes a determinant or self-regulator of their pace of development and they can achieve greater outcomes through this evolution. Hoy (2000) asserts that self- efficacy has attendant outcomes such as elevated self-motivation, a high aptitude to learning, increased competences and management traits. Tschannen-Moran and Hoy (2001) point out that an individual with higher self-efficacy has a higher propensity to be self-assured and self-regulatory on their capabilities, and they are focussed, assertive and goal orientated in their farming undertakings.

There is a school of thought which views self-efficacy as either a natural born trait or cognitive or acquirable through learning. This research leans on the cognitive approach as it gels with the objectives of this study. Building on the works of Bandura (1977), Ferreira et al (2022), point out four sources of self-efficacy being physiological (innate or inborn), enactive mastery experiences (past experiences), modeling or vicarious learning and social persuasion (encouragement and reassurance). Yueh and Liu (2010) posit that if individuals accept that certain abilities are acquirable, they will invest time and resources to understand the task or activity at hand thereby maintaining a higher level of self-efficacy. They further note that there is a drawback of the physiological (natural born) school of thought which is that it creates anxiety, poor learning outcomes and subsequently lower self-efficacy and leading to a decreased business performance.

Self-efficacy is an appropriate predictor or indicator of a farmer technology adoption behaviour. Kurbanoghu (2003), posits that an individual who has received training in skills has the confidence or the drive to put them into use thus the propensity to adopt technology is high. Thus the researcher contends that the subjective expectation that entrepreneurial competences will enhance the agricultural performance becomes a function of self-efficacy.

3.4.3 Scientific Management Theory

There are core constructs under resources competences and these include human resource management, leadership and management and the mobilization of others in the execution of the production process. Whilst this research looks at three entrepreneurial competences, resource competences seem to stand out in terms of relevance in a business environment. Thus, the theories which support this view are well established hence the adoption of the scientific management theory (Taylor, 1911), as it is relevant in explaining mobilizing others, mobilizing resources, financial and economic literacy and motivation. Mahmood, Basharat and Bashir (2012) concur with this view and attest that management is the important section of an organization.

The proponent of the Scientific Management Theory was Frederick Winslow Taylor (1911). Its core focus was to change the management approach such that the labour and management have the same interests. He scientifically experimented and deduced the relationship between labour and productivity by training workers to link performance to output. This theory then led to efficiency. Mahmood et al (2012). In their works on assessing the Scientific Management Theory, Huang et al, (2013), points out that the central focus of the theory is to delink the production process from the concept stage to execution. This in their view is achievable through three stages. The first stage is the collation of knowledge which as cited in Blake and Mosely (2011) involves the classification, repackaging of knowledge into a systemic process with a scientific formulae approach. This resonates with resources competences whereby the farmer as a manager can formulate the performance of tasks whereby each worker does a set procedure within the whole production process thereby improving efficiency.

Growth of a farm is linked to efficiency and production. The outcome of farm activities must be achieved within a set time frame or period. To achieve set deadlines and targets, the farm employees must have the right skills, attributes, competences relevant to the execution of set tasks. This theory is critical in the understanding of resources competences as an independent variable in this research. The management role to ‘select’ and ‘train’ workers in the best way to perform a task is part of management competences. This theory influences specialization and expertise in pursuit of better performance and consequently the farm or firm output (Mahmood et al, 2012). In line with this theory, resources competences streamline activities such that the task and responsibilities are equally divided between the workers (labour) and management to improve efficiency. The Scientific theory therefore seeks to improve production efficiency so as to improve economic or business performance through improving management technique.

The second principle entails that the thinking, designing and planning of the production process should be vested on the farmer who should expend most of their energy on the planning and design of the farming activity. This brings to the fore the aptitude of the farmer towards entrepreneurial competences as they are critical in the creation, planning and design of the production process. (Huang et al, 2013).

Prujit (2003) in earlier studies, on expounding the third principle of the Scientific Management Theory, points out that there should be no reliance on workers but rather the system so enacted must be designed in such a way that it manages the execution of tasks efficiently. Thus workers are keyed to execute prescribed tasks as per the given formulae leading to a logistical streamlining and standardisation of procedure. Therefore the Scientific Management Theory proffers a clear insight into the division of labour characterised by various responsibilities and positions in a systematic mechanical approach to production. Leaving workers to execute the production process without any standardisation may lead to discontinuity once a skilled individual is off duty or incapacitated. Thus the researcher contends that a farmer who has a capability of resources competences ensures that procedure is maintained so as to perpetuate efficient levels of output. The researcher views workers as an integral component of the production process. The roles they play, perform and or execute can determine whether a farm succeeds or fails. Thus the researcher contends this theory helps the farmer to increase the productivity and efficiency of the farming activity as it entails the guidance of workers in the production process scientifically, systematically and methodical.

3.4.4 Jack of all trades theory

Lazear (2005) proposed the Jack of All Trades theory (JAT) premised on a balanced skill-mix across different areas of specialty. The theory posits that an entrepreneur is faced with diverse situations in labour and tasks thus to succeed they must be conversant with various competences. They should have human capital skills and strategies spread out on different fields. The entrepreneur should be innately well versed in various fields and have the propensity to accumulate (learning) a more balanced skills mix.

In essence through deduction, the theory attests that for a farmer to appreciate the industry they must have sufficient knowledge in various areas to favour survival and the possession of such is a precursor to entrepreneurial direction rather than being employed elsewhere. Employees according to this theory have no incentive to master various skills as they are remunerated as per their specialty and they are more occupation specific and deficient in broad skills (Wagner, 2003). Citing Lazear (2004, 2005), Cho and Orazem (2014) point out that being a ‘Jack of All

Trade' can be deemed an entrepreneurial talent. There is less need to hire various personnel for a variety of tasks thus the earnings from entrepreneurial effort are far much more than those of employed elsewhere. Hartog, Praag and Van Der Sluis (2010) points out that entrepreneurs with skill complement have a higher entrepreneurial output and lower overheads. Thus, to Lazear (2005) the major incentive is the monetary reward which is underpinned by strategic competency. Lazear (2005) asserts that for individuals in self-employment such as farmers, those with a balanced appreciation of various competences are more ideal to succeed in their entrepreneurial endeavours than those without. In other words they have a diversified portfolio of skills enabling them to be able to exercise competency in the various undertakings of their business without necessarily resorting to subcontracting skilled personnel. The accumulation of a balanced skill mix embracing a wide spectrum of expertise domains can in fact be a precursor to entrepreneurial focus. Silva (2007), though partly recognising the Jack-of-all-trades-theory, brings in the dimension of inherent unobservable traits which have a bearing on skills accumulation thereby affecting the likelihood of an entrepreneurial path choice. The researcher views the trajectory of Silva (2007) arguments as complementary rather than disruptive to Lazear (2005) postulation.

Indeed the Lazear (2005), theory proffers that entrepreneurs have a general aptitude towards their business operations as opposed to employees who are more of specialists. Thus a farmer can hire an agronomist but their general knowledge and aptitude is sufficient for them to gauge the performance of their employees (Lechmann and Schnabel, 2014). They further show that entrepreneurs have a higher workload of tasks to be executed than hired employees. They perceive that with time, entrepreneurs tend to transit from general knowledge and acquire more expert skills than their employees. This view is also shared by Kurczewska and Mackiewicz (2020), who assert that individuals with more diverse academic and professional competences have a higher likelihood of establishing an entity and exhibiting positive entrepreneurial outcomes.

Amoako and Boateng (2022) assert that though into action competences resonate with the Jack of All Trades Theory, whatever strategy an organization may adopt it has to go through the PESTLE analysis framework. Strategy is a key component of into action competences hence a discussion on the PESTLE analysis framework is worthwhile. The recognized proponent of the PESTLE analysis is Francis Aguilar who included the framework in his book 'Scanning the Business Environment' (1967).

Table 3.2: PESTLE analysis framework

Factor	Description
Political	These factors pertain to government policy effects on a particular industry. These policies could be changes on tax regimen, fiscal policies, farm producer prices among others.
Economic	These factors affect consumer spending and this has a bearing on the firm or farm sales. These factors may include inflation, interest rates, minimum wages.
Social	These factors pertain to the social environment and may involve cultural , education, entrepreneurial aptitude with respect to how they impact on a strategy to be adopted by the organization.
Technological	These factors pertain to technological changes that may affect business operations. These can be both beneficial or adverse.
Legal	Laws affect business decisions and strategies so crafted must be within the confines of the law
Environmental	Business operations must be cognizant of environmental acceptable policies. This may include scenarios such as use of chemicals in agriculture.

Source: Adapted by Author from Amoako and Boateng (2022)

Thus, into action competences are anchored on strategy as an activity by management. Eva (2018) sees strategy as pertaining to the ability to arrange the organization system in all its aspects towards a working business model, a sense of direction, focus, vision and discovery. It allows for flexibility in decision making and an openness or anticipation to experience ambiguity. Vaivode (2022) further observes that Into Action competences entail an aptitude to take additional risks or a propensity towards faster growth, resource allocation, market adaptation and to develop managerial skills. This theory is relevant as Into Action competences relate to formulating, evaluating and implementing the strategies of the business. The underlying competences being are learning orientation, management control, result orientation and strategic orientation as discussed above.

3.4.5 The O-Ring Theory

Into action competences include person to person or individual to group interactions. The underlying competences being communication, negotiation, networking, teamwork and persuasion. The O-Ring Theory first postulated by Michael Kremer (1993) and further developed by Oliver Fabel (2004) elucidates the importance of into action competences as an independent variable in this research. Fabel (2004) pointed out that different abilities are supplied by different individuals with varied or different ability. Thus, if a team member fails to fulfil their task, the entire

project or activity fails. In their view, the proponents point out that, knowledge of different experts or specialists is necessary but the output has no market value if one team member malperfoms (Kremer, 1993; Fabel, 2004). Gerdts II (2022) asks pertinent issues when addressing person to person relationships. He points out that an entrepreneur has to guard against an obsessive passion as this may lead to negative outcomes such as a decrease in in-degree centrality whereby the entrepreneur becomes unapproachable to other team members. Thus, deducing from Kremer (1993); Fabel, 2004, the organization may suffer.

Looking further back to the postulation of Kremer (1993); Fabel, 2004 their model makes reference to the skill level of employees or workers. The model shows that high skill workers make fewer errors and that the output is positively correlated to skills level. Thus, in order to have an optimal output the team must be structured in such a manner that highest skilled workers can be allocated with the highest technology. If there is imperfect matching of workers due to a poor communication and information on worker skill this can lead to reduced output. Yu and Orazem, (2013) attest to the O-ring theory and give a scenario of a piggery where they posit that a mishap in the complementary tasks that constitute the production process can lead to a loss of the product's value. In a piggery, a mishap can led to contamination of feed by introducing a disease or pathogens leading to a loss of the herd.

Kingsley and Innocent (2020), defines communication as a process whereby dissemination of the vision of future realities is spread throughout the organization and it entails the capability to persuade stakeholders within an organization to manage conflicts and to improve management knowledge throughout rank and file. Thus, communication is an integral part of entrepreneurship through firstly influencing stakeholders towards a common goal through persuasion for upward, lateral and downward influence (Li, Overton and Bhalla, 2020). Miller et al (2012) shows that communication with customers and other stakeholders has a critical role because entrepreneurship entails the creation of new value chains and strategic models. Communication within the organization involves sharing meanings related to concepts or basic facts on the operations.

Dabo (2022), observes that among skilled entrepreneurs, decision making and role allocation in an organization are a seamless though effective communication without animosity or conflict of interest. Customer feedback enhances product acceptance and or improvement through effective communication, thereby improving or positively impacting sales. Effective communication is integral for the organizational success as pointed out by Azadi and Karami (2010). There must be clear expression of information among all stakeholders. Management has to disseminate accurate and precise information and to ensure receipt of feedback.

This theory demonstrates how relationships in the work process affects the output. The whole production or agricultural performance is a set of tasks with complementarity in the ability of the team and persons performing the tasks. If one member fails to network or perform a task the risk of failure in the performance increases. Hill (2022) citing Dabson (2001) notes that the modern global economy success hinges on capable workers and a good communication network. Conversely, Muller (2008), points out that the O-ring theory favours the classification of individuals between firms relative to their ability. Thus predictably, the business size is expected to grow in size with a corresponding increase in the mean ability level of workers. Due to this risk of failure in the event of a disruption in the complementarity, workers will prefer to work with others of an equal level as an association with lower skill individuals will result in a higher incidence of mishaps and loss of income.

Kazembe (2015), posits that agricultural performance will be positive at country level in nations that have high levels of investment in skills and technology. Such successful countries tend to attract skilled workers into their system and this observation can be extrapolated to a micro-level such as a farm (Yu and Orazem, 2013). Kayode (2015) weighs in by pointing out that the complementarity of skilled workers becomes mutually reinforcing such that the value of skills is dependent on the skill of other workers. Thus the human capital and its components such as networking, teamwork and communication in their complementarity with other inputs affects the performance and production.

3.5.0 EMPIRICAL LITERATURE REVIEW

3.5.1 THE DEVELOPMENT OF RESEARCH HYPOTHESIS

This section gives credence to the theories and entrepreneurial competences so adopted in this research by looking at results or empirical evidence garnered by historic or previous related research. The reviewed literature of the research is from other countries and dwells mostly on entrepreneurial intention, skills and a limited or selective approach on the three independent variables targeted in this research. Earlier observations by Alvarez and Busenitz (2001) highlighted that the entrepreneurial process was a function of the founder unique grasping of opportunities, the aptitude to garner the requisite resources in the exploitation of the opportunity. Thus, this study fills the knowledge gap especially with the specificity to the Zimbabwe context.

Interestingly research done by Jamal and Chellakan (2020) in Bahrain showed mixed results on the effect of entrepreneurial competences on Small to medium sized enterprises performance. Their data was analysed by using descriptive analysis, correlation and regression analysis. Entrepreneurial competences indicators such as self-efficacy had a negative influence on the

business success. The rest of the indicators had a positive effect on the business success. This presents as a glaring contradiction to other studies in this field.

3.5.2 Determining the effect of Ideas and Opportunities Competences Area on Agricultural Performance.

The indicators for ideas and opportunities competences include spotting opportunities, creativity, vision, valuing ideas, ethical and sustainable thinking (Bacigalupo, et al, 2016).Research by Wahidi (2022) on an exploratory study in Lebanon shows that the co-efficient for spotting a great opportunity ahead of competition is statistically significant (0.02<0.05) showing that a relationship between it and entrepreneurial aptitude. In a comparative study by Van Stel, Barrentes-Mann, Cacador-Rodrigues, Millan and Millan (2021) results show that pure opportunity entrepreneurs had the highest earnings relative to necessity entrepreneurs.

Findings by Adeyeye et al, (2019) show a strong positive correlation between opportunity driven intentions and business growth. There was a significant and positive correlation between the opportunity-driven entrepreneurship at 0.434 significant at P<0.01 and the necessity driven motive at 0.247 at P<0.05.

Ng'aru (2019) shows that opportunity seeking entrepreneur generates a higher revenue for the business. The results had a mean response of 3.04 and a standard deviation of 0.88. Regression of coefficients showed that the opportunity entrepreneur and business growth had a positive and significant relationship. R=0.245 p=0.000.

Research by Syam et al, (2020) looked at the competences that constitute ideas and opportunities competences. They clustered the competences as entrepreneurial behaviour. The studies showed that an increase in entrepreneurial in entrepreneurial behaviour (ideas and opportunities competences) increased the farmer seaweed business performance by 41%. The specific competences studied were innovation, creativity and risk taking. They contend that the findings show that the positive impacts resulting from entrepreneurial competences should be adopted and applied as a new approach towards improving agricultural performance.

Earlier observations by Alvarez and Busenitz (2001) highlighted that the entrepreneurial process was a function of the founder unique grasping of opportunities, the aptitude to garner the requisite resources in the exploitation of the opportunity. Research by Nga'ru (2019) showed that conceptual skills which are a subset of opportunity and ideas competence area such as vision had a mean response of 3.09 with a standard deviation of 1.10 implying that Ideas and Opportunities competences had a positive effect on business performance.

Looking at creativity as an indicator of ideas and opportunities competences, Munizu and Hamid (2018) view it as the ability to develop both new ways, new ideas as a solution to the business challenges. Their study showed that the coefficient of creativity on business performance was 0.411 implying that the higher the creativity the higher the business performance generated. Creativity thus entails improving skills, techniques and procedures and can be regarded as a strategic competence to enhance business performance. Mujanah et al (2021) posit that creativity involves the generation of new ideas, the illumination of new perspectives on challenges, tackling them and embracing opportunities. To them creativity solves challenges by using inherent experientially processes that includes dexterity in coming up with diverse ideas, flexibility in the management to fathom various scenarios and to maintain a touch of uniqueness in the produced ideas (Fong et al, 2018, Mujanah et al, 2021, and Ramli et al, 2019). The study by Mujanah et al (2021), showed that creativity resulted in a significant increase on business performance and was depicted by the t-statistic of 5,383 (>1,96) with a coefficient of 0,378. Thus it can be hypothesised that:

H_1 There is a significant effect of Ideas and Opportunities Competences Area on Agricultural Performance.

3.5.3 Assessing the effect of Resources Competences Area on Agricultural Performance.

The indicators for resources competences include self-awareness and self-efficacy, motivation and perseverance, mobilising resources, financial and economic literacy and mobilising others (Bacigalupo, et al, 2016). There is an interesting dimension in studies done by Alves and Yang (2022) which show that entrepreneurial competences are dynamic rather than static as they mirror the character of the times. In this approach, the emphasis by entrepreneurs seems to be on the requirements of the needs of the moment. Empirical evidence shows that in the 1980s and 1990s, bravery, prudence were key attributes of entrepreneurial competences yet post 2000 achieving entrepreneurs exhibit a self-efficacy accompanied by cautious measurement and logic (Alves and Yang, 2022)

Studies on the self-efficacy construct of entrepreneurship competences by Maluda and Alias (2022) show empirical evidence of a positive impact on entrepreneurship. The study showed that self-efficacy can be further enhanced through training. On studies in self-efficacy, Barlig and Beattie (2008), point out that that self -efficacy involves the belief by individuals that they have the skills and the will to perform better. Their study established a correlation between self-efficacy and business performance but there was no causal relationship. Khalil et al (2021) studies in Pakistan regarding self-efficacy relationship with business performance split the independent variable into five forms of self-efficacy namely marketing, innovation, management, risk and

financial control. Though there were varied path coefficients, with differing strengths, they all showed that a [positive relationship exists between the self-efficacy construct and the business performance.

The importance of entrepreneurial competences in farm management cannot be dismissed wantonly. Earlier research by Wallace and Nilsson (1997) showed that farm business performance would improve if farmers were trained in management of change. Their assertion was premised on observations that many farmers (or institutions) lack entrepreneurial leadership necessary to create novel revenue generation capacity. Msuga, Hissano and Nariu (2008) showed that well organized small holder farmers with management skills have a higher likelihood to increase production and productivity. In their view, well organized smallholder farmers have adequate knowledge and understanding of productivity variation. These farmers exhibit farm-specific variables such as education, access to finance and extension services and tenancy.

Hidayah, Hanani, Anindita and Setiawan (2013) further asserts that management aptitude and competences can improve productivity though they looked on technical efficiency for Indonesia. Mujuru (2014) on studies conducted in Dotito, Mashonaland Central (Zimbabwe) showed that farmers exhibited entrepreneurial competency and aptitudes leading them to manage their agricultural businesses successful.

Esiobu, Onubuogu and Ibe (2015) showed that low managerial skills were significantly leading to a low capacity by farmers to withstand competition in Nigeria. These findings echoed similar European Commission (2004) findings which asserted that entrepreneurial development was being hampered by poor managerial skills among farmers. They further suggest that attending to this issue may achieve positive entrepreneurial development, a view concurred by the researcher.

Fonger (2017), sees management competences as an entrepreneurial focus that can lead to significant growth of a business. Studies by Al Mamum and Ali Fazali (2018) in Malaysia on entrepreneurial orientation, competences and micro-enterprise performance showed that entrepreneurial competences had a mediating effect on the relationship between creativity, innovativeness, autonomy and micro-enterprise performance. They recommended that training programs in entrepreneurial competences could improve micro-enterprise performance.

Ng'aru (2019) in a study done in Kenya showed that independence, innovativeness, risk taking, proactiveness, self-efficacy and competences in management have a positive and significant effect on the growth of the business or enterprises. Nga'ru (2019) showed that the knowledge of the manager had an influence on the growth of an enterprise. Another study by Tindika, Wanjau, Kariuki and Muchiri (2019) also in Kenya was premised on the Kirznerian Entrepreneurship Theory (Kirzner, 1997). The results indicated that alertness and inherent knowledge have a significant favourable influence on business growth. The results though limited in terms of scope by focusing on one construct or thematic area, the information garnered with respect to opportunity alertness lends valuable insight into the opportunity entrepreneurial competences. Similar studies in Kuwait showed that that the entrepreneurial leadership had positive and significant implication on business performance. The capacity for innovativeness was found to be a significant mediator in the relationship (Sawaean and Ali, 2019). Saka (2019) in Kenya revealed that there was a positive and statistically significant relationship between small to medium enterprises survival rate and entrepreneurial competences.

Studies in Pakistan though limited in scope to information technology industries done in 2019 and published in 2022, showed that manager competency through an entrepreneurial approach had a positive impact on project success (Ul Haq and Iqbal, 2022). Their study sought to fill the knowledge gap between project success and entrepreneurial orientation.

Machmud and Sidharta (2016) view motivation as a driving force in an individual to execute particular or certain business objectives. It is a desire for achievement to circumvent the likelihood of negative outcomes in an entrepreneurial undertaking. Their study showed that high motivation leads to higher business performance and the multiple regression analysis showed this effect at a coefficient of 0,153 and p value of 0,036. Riana (2015) views motivation as a series of behaviours working in synergy to aid in supporting an individual to perform activities to achieve business objectives and thus accelerating business performance. Their study showed a predictive-relevance value of 0,832 (>0) implying that 83, 2% of variance in business performance (dependent variable) can be explained by the independent variable of motivation.

Usama and Yusoff (2019), view financial literacy a key indicator of resources competences as financial knowledge and abilities that empowers entrepreneurs to carry out sound financial management strategies for their entities. It also encompasses the level to which one appreciates basic financial concepts and the capacity and confidence to manage finances through decision making and planning even in a dynamic environment. Their study used regression analysis to test their hypothesis. The R^2 value of 0,656 implies that the effect of financial literacy explained 65, 6% of the variation of business performance confirming that it has a positive and significant

effect on business performance. Fauzi, Wulandari and Lutfi (2018), view financial literacy as sufficient knowledge about facts on personal finances. Their study using logistic regression proved that financial literacy is a significant predictor of the overall business performance in medium sized enterprises.

Thus it can be hypothesised that:

H_2 There is a significant effect of Resources Competences Area on Agricultural Performance.

3.5.4 Ascertaining the effect of Into Action Competences Area on Agricultural Performance.

The indicators for into action competences include taking the initiative, planning and management, coping with uncertainty, ambiguity and risk, working with others and learning through experience (Bacigalupo, et al, 2016). One of the indicators of into action competences is the taking of the initiative. Bacigalupo et al (2016) view this indicator as the capability to initiate processes that create value through taking up challenges and to work independently in pursuit of goals unwavering and following an action plan. Mensmann et al (2018) in their study showed that female entrepreneurs who took up initiatives tend to have a decreased perception of risk and increase their self-efficacy thereby increasing entrepreneurial passion which eventually leads to a higher business performance.

Svotwa et al (2022) makes recommendations on a positive outcome to entrepreneurial intentions. They point out from this study on the need to develop skills on networking with others, working as a team and employee management as critical to Botswana youth entrepreneurs. Thus, they attest on the need for into action competences in their qualitative research. Earlier studies by Eschker, Gold and Lane (2017) on rural businesses in Hispanic countries, showed that those with networking support, marketing exhibited successful performance.

Teamwork has been explored from the 80s with numerous research showing empirical evidence of its impact on the competitive advantage of the organization. Vaskova (2007) noted that the high degree of a common purpose for the completion of a task leads to an achievement. Arulrajah and Opatha (2012) use the term team orientation as defined as a state of being directed as a team. Studies by Prasheenaa and Thavakumar (2021) in Sri Lanka, Kandy District found that there is a high level of team orientation among employees giving their companies crucial competitive advantages inclusive of higher productivity, high quality products and low staff turnover. Bacigalupo et al (2016), points out that working with others is one of the indicators of into action competences. It involves working together, cooperating with others to transform ideas into action. It also involves solving conflicts and withstanding competition. Pathiranage (2019) in

a review of literature contended that teamwork, collaboration, networking constitute an organisational culture and also includes learning experience of group members, beliefs of new members and their views on the entity. The review asserts that the attributes of an organisational culture have a positive and significant effect on business performance.

Jamal and Chellakan (2020) in their study of entrepreneurial competences, showed that strategy had a positive significant relationship with small to medium enterprises success. They showed that strategy as a variable in their research demonstrated significant correlation results on business success as a dependent variable. Studies in Ukraine by Sodoma, Shmatkovska, Dziamulych, Vavdiiu, Kutsai and Polishchuk (2021) showed that adoption of strategic objectives leads to more efficient use of land resources. The study looked at strategic objectives such as optimization of land lease relations, concentration and intensification of agricultural production.

Further studies on small to medium enterprises by Amoako and Boateng (2022) showed that poor marketing strategy had a negative influence on the business performance. Other earlier studies by Bergevoet, Ondeuteijn, Saatkamp, Van Woerkum and Huirne (2004) among Dutch dairy farmers established that an increase in strategic skills improved entrepreneurial performance. The other indicator is planning and management. Skokan, Pawliczek and Piszczur (2013) showed that the existence of a detailed written strategic plan had a significant positive effect on selected business performance indicators and the result was confirmed by 80% of the studied performance parameters. Sandada, Pooe and Dhurup (2014) in a quantitative research study in South Africa showed in regression results that strategic planning factors had an adjusted R^2 value of 0.47 which implies that the strategic planning factors explained 47% of the variance in the business performance of SMEs. The beta coefficients showed that strategic planning made a significant contribution to the business performance of SMEs ($\beta = 0.27$, $p<0.05$).

Then there is the indicator of into action competences called learning through experience. Bacigalupo et al (2016) points out that this indicator relates to the adoption of any initiative as a learning opportunity, the ability to learn with others inclusive of peers and mentors and to learn from reflections of past successes and failures. Research by Staniewski (2016) employing stepwise regression to verify the predictive value of variables showed that entrepreneurs with managerial experience obtained higher mean scores in the dependent variable of entrepreneurial or business success.

Thus it can be hypothesised that:

H_3 There is a significant effect of Into Action Competences Area on Agricultural Performance.

3.5.5 Ascertaining the impact of the combined effect of entrepreneurial competence areas on Agricultural Performance.

Studies by Muniraju (2020) in India showed that for the regression analysis of entrepreneurial competences, the respondents among caste women entrepreneurs scored a low mean thus their business performance was deemed to be low. Other research by Abaho et al (2016) shows that entrepreneurial competences and business performances were positively and significantly related ($r=0.460$ at 0.01 level, 2 tailed, $p<0.01$). Their studies conducted in Uganda also established a positive relationship between entrepreneurial competences and business performance by showing that between the constructs of entrepreneurial competences; opportunity competences ($r=0.251$, $p<0.01$), commitment competences ($r=0.262$, $p<0.01$), organising competences ($r=0.273$, $p<0.01$) among others. They assert that the findings imply that when a business owner exhibits entrepreneurial competences, the business is likely to attain a higher sales volume. On regression analysis, their results showed that entrepreneurial competences have the capacity to predict 30.4% of the variance on business performance (Adjusted $r^2=0.304$). The implication is that a change in the entrepreneurial competences capacity causes a 30.4% change in the business performance that may be represented by sales, profits *ceteris paribus.* Other research by Jamal and Chellakan (2020), showed that there is a moderate positive relationship between entrepreneurial competences and business performance ($r = 0.539$, $p = <0.000$). The regression analysis showed that 69.5% of the variance in business performance could be explained by entrepreneurial competences. Thus the entrepreneurial competences have a significant ability to influence business success. Pranowo et al (2020) in their study showed that entrepreneurial competences had a composite reliability CR of 0.89>0.70 and the Average Variance Extracted (AVE) of 0.501 > 0.50. By implication their data was valid and reliable and on hypothesis testing, they showed that entrepreneurial competences positively affect the business performance with a t-value = 3.166 > t-table = 1.967/ and p value of 0.008 < 0.05 thereby implying that the higher the possession of entrepreneurial competences by an entrepreneur then the business performance also tends to increase.

Mohammed, Ibrahim and Shah, (2017) in their study in Nigeria using regression analysis to model showed that strategic competency ($\beta=0.227$, $t=3,411$, $p<0.01$) had a direct positive and significant effect on firm performance. The other indicators such as opportunity competences ($\beta=0,195$, $t=3,221$, $p <0, 01$) and organising competence ($\beta=0,245$, $t=3,503$, $p <0, 01$) also had a direct positive and significant effect on farm performance.

Sumawidjaja, Ahman and Machmud (2019), in their study of the impact of entrepreneurial competences on industry performance in Indonesia showed in their regression model that R^2 was 0.52 suggesting that 52% of variations that occur in the firm performance can be explained by the combined effect of entrepreneurial competences. The results confirm that entrepreneurial competences have a positive effect on the business performance and the test results from the performance model show that the variations that occur in the business performance can be explained by entrepreneurial competences.

Other research from Sakib et al (2022) in their study of entrepreneurial competences and SMEs performance in a developing economy centred on Bangladesh showed that all the indicators or constructs of entrepreneurial competences were able to predict and explain 40.9% of the performance of SMEs since the R^2 was 0.409 and the predictive relevance (Q^2) was 0.247 indicating that all constructs of entrepreneurial competences have some extent of predictive relevance as the determined value was higher than 0.

Kamuri (2023) in their study on leather industries in Kenya found out that the independent variable (entrepreneurial competences) and the dependent variable (business performance) exhibited a linear relationship and the p-values were greater than the level of significance of 0.05. Entrepreneurial competence was regressed on business performance and the results interpreted through R^2 values and p -values at $p<0.05$ significance level. The coefficient of 0.539 implies that a unit increase in entrepreneurial competences increases performance by 0.539 units suggesting that there is a positive and significant relationship between entrepreneurial competence and performance. The multi regression analysis showed that the R^2 value of 0.637 implies that entrepreneurial competences explain 63.7% of the business performance. Thus it can be hypothesised that:

H_4 There is a significant impact of the combined effect of entrepreneurial competence areas on Agricultural Performance.

3.5.6 Establishing the direct or indirect effect of entrepreneurial competence areas on Agricultural Performance.

Pranowo, Sutrisno and Sulastiono (2020) in studies conducted in Indonesia employed a measurement model which explained the relationship between the observed variables and unobserved variables. The value of factor loading, the composite reliability (CR) and Average Variance Extracted (AVE) was used to determine the convergent validity test. Their results showed that all items had a loading factor value > 0.50 and the entrepreneurial competence composite reliability (CR) had a value of 0.89 >0.70 and AVE showed a value of 0.501 > 0.50 showing that their data was valid and reliable. The results showed that the combined entrepreneurial competences had a positive effect on business performance (t-value =3.166 > t-table = 1.967 and p value of 0.008 < 0.05.

Syam et al, (2020) in studies conducted in Indonesia, basing on SEM analysis showed that the combined entrepreneurial competences are positively and significantly correlated to business performance and they point out that for a farmer to be an entrepreneur would be beneficial towards improving their potential (λ = 0.410: t – value = 5.259). They evaluated the structural model using p – value to examine the significance of the coefficient of parameter paths adopting p – value at 0.05 significance level.

Thus it can be hypothesised that:

H_5 There is a direct or indirect effect of entrepreneurial competence areas on Agricultural Performance.

3.6. Conceptual Framework

Independent Variables and Dependent Variables

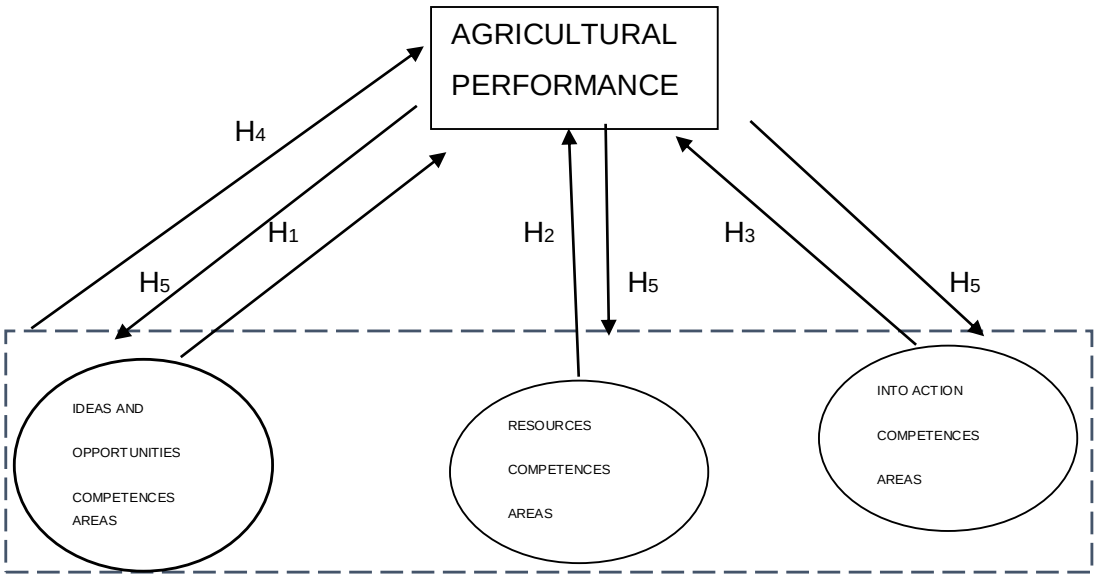
In an investigation or experimental enquiry, Aris (1994) views independent variables as constructs and values which do not depend on any other variables within the scope of the investigation. The dependent variable is investigated under the assumption that it depends on the effect or values of other variables. Bhandari (2022) concurs by noting that these variables test cause-and-effect relationships. Thus the independent variable is the cause and the dependent variable is the effect. Thus the dependent variable is the event expected to change when the independent variable is adjusted (Aris, 1994). In this research, the dependent variable is being studied by analysing the effect of the independent variables (Aris, 1994) which are described as multiple independent variables thus;

Z = f(x,y) where Z is the dependent variable given as a function (dependant of) of the multiple independent variables depicted as x and y.

In this study, THREE independent variables were identified as follows;

1. Ideas and Opportunities Competences Areas,
2. Resources Competences Areas and
3. Into Action Competences Areas.

Agricultural Performance is the dependent variable.



3.7 CHAPTER SUMMARY

This Chapter gave a discussion on empirical studies of related research in Zimbabwe, Africa and other continents. The theories that underpin this study were also discussed culminating in the development of a conceptual framework to the research problem. The following Chapter pertains to research methodology.

CHAPTER 4

RESEARCH METHODOLOGY

4.0 INTRODUCTION

The previous section, Chapter Three, reviewed literature on entrepreneurial competences and the agricultural performance of farms as business entities. It also discussed pertinent theories to the conceptual framework and looked at empirical studies which related to this study. This Chapter then focussed on research philosophy, research strategy, research design, population and sampling, research instruments, data collection procedures, data analysis and presentation methods, reliability, validity and the procedure. This Chapter also discussed the data collection methods employed in the study and the sampling methods. This Chapter also discussed the population and the sample size calculation.

4.1 Research Philosophy

This study employed a positivist philosophy that uses analytical tools similar to those employed in natural sciences by an emphasis on knowledge, favourable sensory indications rather than negatives (Alakwe, 2017). Ganesha and Aithal (2022) posit that in positivism reality is observable and measurable. Causal explanations and predictions are more critical as a reality can be true, false or meaningless. This philosophical approach encompasses prediction, estimation and forecasting as the core objectives. The particular research findings or the contribution to the body of knowledge from positivism philosophy can be validated through empirical evidence which show the cause and effect relationship of the entrepreneurial competence areas and agricultural performance. Given (2008) defines quantitative research as the systematic empirical investigation of observable phenomena via statistical, mathematical or computational techniques. Hamersley (2013) posits that in positivism, the occurrences in reality must be measured and be backed by tangible evidence. Thus, the relationship between the independent variable and dependent variables can be established by causal inferences gleaned from experimental designs and be determined by modelling processes (Cohen, Marion and Morrison, 2011). This philosophical approach is devoid of bias or human influence through adoption of pure scientific empirical methods (Muhaise, Ejiri, Muwanga-Zake and Kareyo, 2020).

To further highlight the positivist philosophy, Malhotra (2017), points out that it entails coming up with propositions, quantifiable measures of variables, testing of hypothesis and inferential

applicability on the phenomenon from the sample to a wider population. This translates to the development of research hypothesis which can then be empirically tested to derive conclusions on the effect of entrepreneurial competences on agricultural performance. Johannesson and Perjons (2014), assert that the guiding philosophy in positivism is that science can lead to the truth which helps to appreciate the world enabling one to predict and control it. Thus in positivism, the world and the universe operate on the dictates of principles of cause and effect that can be investigated scientifically and explicated and can be tested through deductive reasoning. Thus positivism employs empiricism whereby observation and measurement are the basis of a scientific investigation through experimental means. The researcher argues that the empiricism allows for the measurement of discrete values which can be statistically calculated to produce tangible relationships between the variables.

4.2 Research Strategy

Research strategy is the plan or sequence of activities for searching for and analysing information obtained, carried out in a number of steps (Malhotra, 2017). Research strategy gives the compass of the research and how it will be executed. Johannesson and Perjons (2014), view a research design as a master plan for conducting a research study which then guides in planning, performing, monitoring and concluding the study. Research strategies include surveys, experiment, action research, case study, grounded theory, ethnography and cross sectional studies. This study employed a survey strategy and questionnaires were distributed throughout the sample. The research strategy determines data collection method and it may be in the form of quantitative, qualitative or mixed method approach. A comparison of quantitative and qualitative research is shown on Figure 4.1. This study adopted the quantitative research design.

Epistemological Assumptions of Quantitative and Qualitative Research

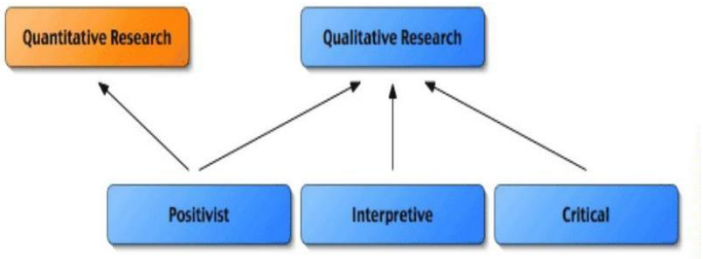


Figure 4.1 Epistemological Assumptions of Quantitative and Qualitative Research
Source: Malhotra (2017)

Research strategy includes the methodology which is concerned with how knowledge is acquired on a phenomenon and how it is applied in practice (Johannesson and Perjons, 2014). Therefore

epistemology becomes the philosophy that describes our knowledge of the world and methodology describes how the knowledge is applied into practice (Malhotra, 2017). The intricate relationship of epistemology and methodology is aptly described in Figure 4.1.

4.2.1 Quantitative Research

This is a technique and measurements that produce discrete values. Asenhabi, (2019), notes that the empirical observations and measures are used to collect data. It is an analytical approach towards research. The essence of the research is that the objective reality has to be fragmented to discernible pieces as the basis of the research objectives or hypothesis that can be understood. The analysis of the relationship between the variables are used by the researcher to test the hypothesis through various statistical processes. The data analysis then can be used to deduct or to draw a conclusion.

Quantitative research is divided into non-experimental research and experimental research designs. Non experimental design was adopted for this study. It is subdivided into three groups namely survey design, causal-comparative design and the correlation design (Asenahabi, 2019). The study used both the survey design and the correlation design. Survey research involves a numeric description of responses of a population through studies in a sample of that population. The study used the cross-sectional survey adopting descriptive, exploratory and explanatory design. Furthermore, the analytic survey which is a subset of the survey research method was used to determine demographic profiles, observational surveys and factor analysis. On the modelling aspect of this study, the researcher adopted the correlational research approach where correlational statistics were employed to measure and explicate the relationship between variables.

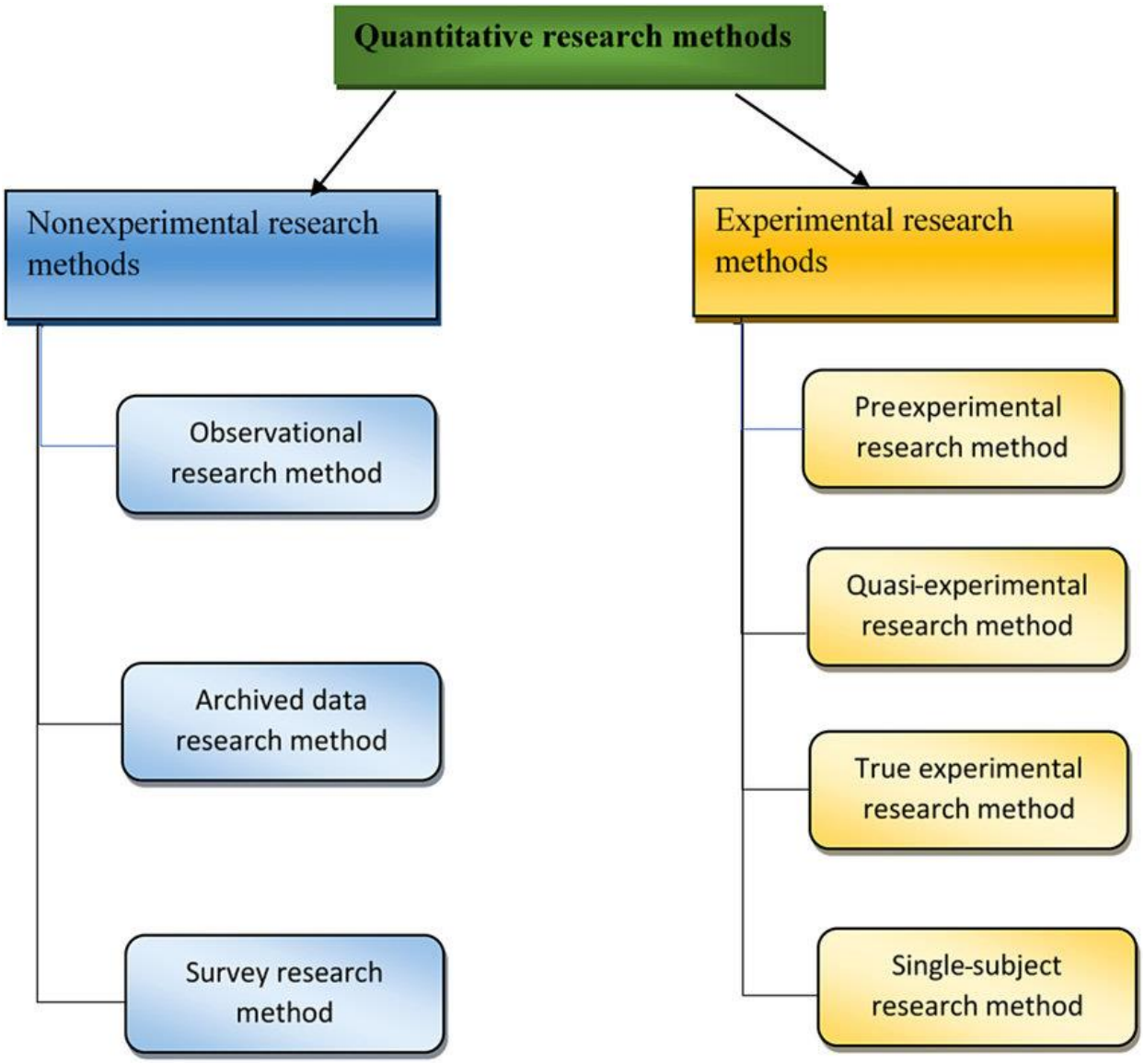


Figure 4.2 Quantitative Research Methods

Source: Hussain, Hassali and Babar (2019)

This study employed a quantitative approach through the non-experimental method on assessing the relationship between entrepreneurial competences and farm performance using the financial indicator of profitability as a measurement proxy. Entrepreneurial competences were evaluated through a self-assessment procedure. The evaluation of entrepreneurial competences was anchored on the EntreComp framework. The data was sourced through a questionnaire and the

responses were on a 5 point Likert scale. The results employed the Confirmatory Factor Analysis to come up with a model using SPSS software version 26.0.

4.2.2 Why not Qualitative Research?

Qualitative research seeks to understand a research problem through obtaining culturally specific information about opinions, behaviours and social contexts of a particular population. Rahman (2017), notes that the findings or information are not a product of statistical procedures but an incorporation of realities. It is more focussed on analysing subjective meanings through a collection of non-standardised data. It uses interpretive techniques to describe, decode, translate so as to derive a meaning.

Due to its nature, qualitative analysis findings are incapable of being extrapolated to wider populations with the same magnitude of certainty as quantitative analysis. Atieno (2009), attributes this limitation to lack of tests on the findings to determine their statistically significance and their verifiability. This lack of statistical significance leaves a chance to coincidence. Rahman, (2017) also notes that qualitative approaches focus on meanings and experiences rather any imperative issues in the context. Also policy makers accord low credibility to qualitative approach findings and are more inclined to quantitative findings if need be. There is also the limitation of the time dimension as qualitative analysis takes a longer period and the adaptation and the application of results over a larger population is highly limited. Thus from the aforementioned this method was deemed inappropriate for an empirical study of this nature.

4.2.3 Why not Mixed Methods?

Mixed methods is a research approach that pertains to a scenario whereby data is collected and analysed using both quantitative and qualitative data within the same study (Shorten and Smith, 2017). They further note that mixed methods can be described as a hybrid research approach where the strengths of both quantitative and qualitative research methods are drawn out to give a benefit of different viewpoints and to reveal relationships between variables explored and exposed through multi-faceted research questions.

Dawadi, Shrestha and Giri, (2017) note that the main advantage of mixed methods approach is to give a better understanding of relationships between quantitative and qualitative data. The relationships can be connections or contradictions which cannot be responded to from one research method and the interaction allows for various perspectives in tackling the matter being studied. Thus mixed methods research integrates the philosophical frameworks consisting of the post-positivism and interpretivism in an intricate and interwoven arrangement of both

quantitative and qualitative research methods, giving a deeper explanation of the research phenomena.

In this study the researcher discarded this method due to its propensity to add to complexity of conducting research. As this study is primarily of academic interest with set timelines, mixed methods was deemed to be vexatious on time and resources. The mixing of different research paradigms has the potential to create challenges in data collection, analysis and integration. The researcher concurs with Dawadi et al (2012) who assert that quantitative and qualitative research are premised on different epistemological and philosophical frameworks, thus integrating them entails reliance on assumptions on the paradigms involved leading to questions on the integrity of the data and the acceptable measure of compatibility.

4.3 Research Design

Durrheim and Terre Blanche (2004) define research design as a strategic framework on the activities undertaken to bridge the research questions and the execution of the research strategy. Asenahabi (2019) asserts that in research design, the main essence is to develop a structure plan that shows how the pertinent aspects of the research work in concordance in addressing the research questions. It is the overall plan for linking the conceptual research problems to the envisaged empirical research thus a research problem is translated into data for analysis so as to deduce answers and conclusions. Furthermore, Oben (2021) citing Amin (2005) views the research design as the conceptual vessel in which quantitative or qualitative research is undertaken and it is the precursor for the determination through measurement of variables, data collection and analysis. Pertinent responses to enquiry questions on the study become clear to the researcher through the research design. Muhaise et al (2020) aptly contend that a research design is the choice of the researcher on the most appropriate technique for the study. The research technique in this instance pertains to various methods, tools, statistical packages needed to execute a detailed research enquiry.

For this study, the research design and the research process was influenced by Saunders research onion (Saunders, Lewis and Thornhill, 2019). Kovacs (1985) points out that the research process depicts the decision the researcher undertakes to develop the research methodology. As one ‘peels’ the onion inwards, each layer depicts a range of choices and represents the methodology chapter. It is an adept tool for the development of the research methodology. The research onion illustrates a road map, scheme of activities for all procedures

and processes of enquiry that a researcher has to undertake from hypothesis development to data analysis.

Research Onion

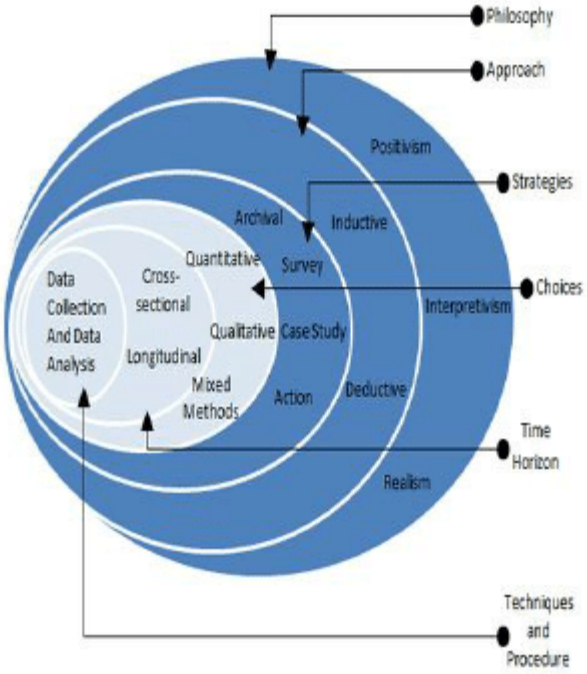


Figure 4.3 Research Onion

Source -Saunders, Lewis and Thornhill, (2019)

Asenahabi (2019), views a research design as a reflection of a researcher ideas, which binds the enquiry together through a structure plan depicting how the key components of the study work collectively to solve the research questions. Creswell (2014), posits that researchers must self-introspect on the new knowledge and theoretical views they are bringing to the research and how they will gather and process the data. Asenahabi (2019), concurs with Saunders et al (2019) in that like the onion peeling off, the research design is a step by step process which includes a plan, structure and strategy of the enquiry so as to proffer solutions to the research enquiry. It covers what kind of analysis to be adopted, the data needed, collection methods, analysis of data so as to respond to the research question. The study used descriptive research design and it sought to establish the relationship between the independent variables and the dependent variable in the conceptual framework. Descriptive statistics and inferential statistics were used for analysis so as to come up with a model on entrepreneurial competencies and their influence on agricultural performance as the dependent variable.

4.4 Population and sampling

Population

The entire group under investigation is described as the population and the small group selected to gather data is described as a sample. Banerjee and Chaudhury (2010) views a population as a large group of individuals or objects that is the core subject of an investigation or research where some information needs to be ascertained. The characteristic of the population is that it consists of individuals or objects displaying similar or a common trait. Shukla (2020), notes that another trait that aptly defines a population is that the findings of the enquiry or research can be applied as clarified by the study objectives.

The population for this study consisted of small scale farmers, medium and large scale farmers. Despite the existence of diverse agro-ecological zones, there is farming activity in all provinces and communal farmers are the largest group. There are over 50,000 medium to large scale farmers in Zimbabwe (GoZ, 2017). Kuhudzayi (2018) states that there are 1,534,396 farmers whose bulk consist of smallholder farmers giving an estimate of all farmer groups of 1,580,000 farmers in total. At 95% level of confidence, the implication is that from the available estimates, the population of 1,500,000 will be true at a z value of 1.96 within a margin of error of 0.05 or 5%. Due to scarcity of latest data on the farmer population in Zimbabwe, it became difficult to obtain precise figures thus this study adopted a population that comprised of 1,500,000 farmers scattered throughout the 8 non-metropolitan provinces of Zimbabwe.

Sampling

Sampling involves the selection of a sample from a large group or population for purposes of research. In this study the population was regarded as a heterogeneous group since it has different classes of farmers. Zukauskas, Vveinhardt and Andriukaitiene (2018), note that a quantitative study uses small data samples which undergo rigorous analysis so as to fully understand traits and attitudes that can be extrapolated to a larger population. In essence there is a selection through probabilistic and non-probabilistic techniques of individual members of a population for better scrutiny. The selection for the sample was designed to be free of bias and give any member of the population an equal chance of selection. This enabled findings to be closer to the entire population characteristics with a small margin of error (Mweshi and Sakyi, 2000). As posited by Bhardwaj (2019), the study adopted probability sampling. Due to logistics concerns and considerations, the researcher adopted stratified random sampling whereby members of the sample were selected randomly and by chance.

The Slovin formula (Pagoso, Garcia and Guerrero de Leon, 1992) also known as Yamane's formula (1967) was used to determine the sample size and Cochrane (1977) works were used to determine the minimum required sample size.

It is given by $n = [N/(1+Ne^2)]$

Where n =sample size

N= Total Population (1,500,000 farmers)

And e=0.05 (margin of error)

Thus $n = 1,5000/1+(1,500,000)*0.05^2$

This translates to n= 1,500,000/3,751

=399.89 thus the sample size is 399

For the minimum required sample size, it was determined using Cochran (1977) formula (Mweshi and Sakyi, 2020)

Whereby $n_o = z^2pq/e^2$

Whereas n_o = sample size

z = critical value of desired confidence

p = estimated proportion of an attribute that is present in the population

q = 1-p

e = desired level of precision

thus, for this research $n_o = (1.96)^2(0.5)(0.5)/(0.05)^2$

= 384.16

= 384

4.5 Sampling Method

Creswell (2014), notes that the information gleaned carefully from a sample is analysed through statistical procedures to ascertain on whether the extrapolated findings or the predicted generalisations of the theory have integrity. The sample size was distributed within the 8, non-metropolitan provinces using the study population ratio representation. This ensured that sample

distribution remained unbiased and balanced. The research instrument was pretested as a pilot study in Matebeleland North province where 48 respondents were administered questionnaires. This has the advantage of increasing the validity and reliability of the data and the appropriateness of the questionnaire (Creswell, 2014). The pilot sample was 12.5% of the sample size above the acceptable minimum of 10% recommended for such a statistical analysis.

The study adopted the probability sampling technique using the stratified random sampling method. Brown (1947) as cited by Taherdoost (2016) notes that this method has a high freedom from bias but may be expensive in terms of time and energy for a given level of sampling error. Proportional stratified sampling is a type of stratified sampling in which the sample size of each stratum is proportional to the size of that stratum in the population. This means that each stratum is represented in the sample in the same proportion as it is represented in the population.

Table 4.1: Sample Distribution

Province	Number Of Respondents
1-Matebeleland North	48 (30 Pilot Study)
2-Matebeleland South	48
3-Midlands	48
4-Masvingo	48
5-Manicaland	48
6-Mashonaland East	48
7-Mashonaland Central	48
8-Mashonaland West	48
TOTAL	384

Source: Author (2023)

4.6 Research Instruments

Oben (2021) views a research instrument as a scientific and systematic tool, so created with the objective to collect, measure and analyse data peculiar to a set research interest and focus area. The instrument can be a survey, test, questionnaire, interviews, scales, government bulletins, oral history among others. Creswell (2014), notes that a researcher has to select the appropriate instrument to measure the variable so that one can come up with a deductive model of thinking. This study employed questionnaires as the main instrument to obtain data. A questionnaire consists of a series of questions and other prompts for the purposes of gathering information from respondents. In terms of structure, the questionnaire guide was premised on probe questions designed to give data for profitability and yield.

Sekaran and Bougie (2013), view a questionnaire as a pre-set detail of questions where respondents affix their answers. The pre-set questions cover the variables of interest. The literature review influenced the development for the structure of the questionnaire (research instrument) in order for it to adequately cover the variables of the study. Tustin, Ligthelm, Martins and van Wyk (2005), recommend that the development of an instrument or questionnaire must ensure that the questions and response areas are premised on the research objectives which will give a solution to the research problem.

Prior to being distributed, the instrument was pilot tested and its reliability was assessed using the Cronbach Alpha measurement. Likert scale was used to reflect the underlying construct with a score of strongly agree to strongly disagree in a scale of 1 to 5. The pilot study also assisted the researcher to be conversant with the procedures, limitations and areas to be modified in the instrument.

4.7 Data Collection Procedures

The study employed a survey research whereby numeric descriptions of responses were captured for analysis. The study used cross -sectional survey which is descriptive, exploratory and explanatory (Asenahabi, 2019). Data was collected through questionnaires which were depended on close-ended questions to give an appropriate Likert Scale response.

4.8 Data Analysis and Presentation Methods

Descriptive Statistics

Mann (1995) defines descriptive statistics as pertaining to the analysis of summary statistics that quantitatively describes or details information from a collection of data. Trochim (2006) further

states that descriptive statistics give simple summaries concerning the sample and the observations alluded to it. These summaries include quantitative (summary statistics). The summaries form the foundation of the data which may be part of further statistical analysis. The data summary is such that patterns can be perceived from the data though one cannot draw any conclusion beyond analysed data or hypothesis made. Descriptive statistics main function is to 'describe' the data and has the convenience to present it in a format that allows for interpretation. Green and Broatch (2023) note that descriptive statistics allows researchers to view central tendency and the degree of dispersion of values in given data. They enable an understanding of data distribution and comparisons.

Inferential Statistics

McCue (2007) notes that inferential statistics pertains to techniques whereby sample data is used to make generalisations on the whole population. Inferential statistics involves techniques such as estimation of parameters and testing of statistical hypothesis. The test hypothesis explores causal relationship within the data. The researcher will be searching for useful relationships in the information or models and at some instances with a view to predict or anticipate future scenarios. It is also described as inductive statistics that adopts measurements from a sample and then makes generalisation or an extrapolation over a large population of subjects (Babbie, 2009)

Shapiro-Wilk Test

The Shapiro-Wilk test is a statistical test that is used to test the null hypothesis that a data set is normally distributed. The test results are reported as a p-value. A p-value of less than 0.05 indicates that the null hypothesis can be rejected, which means that the data is not normally distributed. It is a hypothesis test that is in essence a goodness- of- fit test. It examines how close the sample data fit to a normal distribution. This is made possible through converting the data to a distribution which has a mean $\mu = 0$ and a standard deviation $\sigma = 1$. Thus it measures how well ordered the standardised sample quantiles fit the standard normal quantiles. The statistic has a p-value of between 0 and 1 whereby 1 is a perfect match. A small value will be a rejection of the null hypothesis of normality (King and Eckersley, 2019).

Spearman's Rank Correlation Coefficient

It is a non-parametric measure of the statistical dependence between the rankings of two variables (rank correlation). It gives an assessment on how well the relationship between two

variables can be expressed as a monotonic function. It is symbolised by ρ (rho) or r_s and is a non-parametric measure of rank correlation which pertains to a statistical dependence between the rankings of two variables. In a monotonic relationship, there are two actions and the first means as the value of one variable increases, the value of the other does the same. On the second action, as the value of one variable increases the other variable will inversely decrease. Thus the Spearman's Rank Correlation Coefficient also measures the strength and direction of the monotonic association between the two variables (Corder and Foreman, 2014)

Kruskal- Wallis H-Test

It is also known as one way Analysis of Variance (one way-ANOVA) on ranks and is a non-parametric method to establish whether the samples originate from the same distribution. Due to its non-parametric approach, the Kruskal-Wallis test does not assume a normal distribution of the residual. It tests whether the samples originate from the same distribution. The null hypothesis is that the mean ranks of the groups are the same. (Corder and Foreman, 2014).

Laerd Statistics (2023), notes that this test is ideal when FOUR assumptions are observed. The first assumption is that the dependent variable is measurable at the ordinal or continuous level (interval or ratio) such as a Likert Scale. The other assumption is that the independent variable must have at least two or more independent groups or categories. The third assumption required for the Kruskal- Wallis test is that there must be independence of observations whereby there is no relationship between the observations in each group or between the groups themselves. Finally the assumption entails that the distributions from each group have the same variability. These assumptions were met in this study and this justifies why the test was adopted.

Regression Analysis

Freedman (2009) states that regression analysis pertains to a set of statistical processes for estimating the relationship between the dependent variable and one or more covariates (independent variables). It is used for predicting and forecasting. It is also ideal for inferring causal relationships between the independent and dependent variables. To explore such issues, data is assembled on the underlying variables under investigation and regression is used to determine the quantitative effect of the causal variables upon the variable they influence. It also involves the assessment of the statistical significance through measuring the degree of confidence on how close the true relationship is close to the estimated relationship (Sykes, 1993).

The study used descriptive statistics and inferential analytical procedures such as regression, analysis of variance (ANOVA) and structural equation modelling (SEM). Confirmatory Factor Analysis (CFA) was employed to show the relationship between the independent and dependent variables. Abu-Alhaija (2019) asserts the use of CFA as a multivariate technique to confirm or to test pre-specified relationships. The aim was to assess the validity and the fit of the measurement model. The study used a package called SPSS which has adaptable multivariate analysis tools. Presentation of data and findings took the form of tables and graphs. The tables included information such as descriptive statistics for demographics, standard errors, confidence intervals, coefficients of variation so as to safeguard data quality. SEM combined statistical procedures and models inclusive of path analysis and CFA. It explained the relationships between research variables as a multivariate procedure that examines interrelationships between the measured and latent variables. Thus SEM was adopted due to its perception as a strong technique to test a theory (Abu-Alhaija, 2019).

4.9 Reliability and Validity

Reliability

Reliability is an indicator of the stability of the measured values obtained when there is continuous measurement under the same conditions using the same instrument (Surucu and Maslaki, 2020).

Cronbach's α (alpha) is used as a (lower bound) estimate of the reliability of a psychometric test. It has been proposed that α can be viewed as the expected correlation of two tests that measure the same construct. (Cronbach, 1951). Nunnally (1978) concurs by stating that by using this definition, it is implicitly assumed that the average correlation of a set of items is an accurate estimate of the average correlation of all items that pertain to a certain construct.

Cronbach's α is a function of the number of items in a test, the average covariance between item-pairs, and the variance of the total score (Leedy and Ormrod, 2005)

Develles (1991) exemplifies that If one measures measure a quantity which is a sum of K components (*K-items* or *testlets*): X= Y1 + Y2 +…+YK. Cronbach's α is defined as

$$\alpha = \frac{K}{K-1}\left(1 - \sum_{i=1}^{K} \frac{\sigma^2 Yi}{\sigma^2 X}\right)$$

where σ^2x is the variance of the observed total test scores, and σ^2Yi the variance of component *i* for the current sample of persons (Develles, 1991)

Cronbach further reduces the formula based on a score of 0 and 1, to give a short cut formula (Cronbach, 1970)

$$\alpha = \frac{K}{K-1}(1 - \sum_{i=1}^{K} \frac{PiQi}{\sigma^2 X})$$

Where Pi is the proportion scoring 1 on item *i*, and Qi=1- Pi. This is the same as KR-20.

Alternatively, Cronbach's α can be defined as

$\alpha = K\bar{c}/(\bar{v} + K - 1)\bar{c})$

Where K is as above, $\bar{v}$ the average variance of each component (item), and $\bar{c}$ the average of all covariances between the components across the current sample of persons (that is, without including the variances of each component).

The standardized Cronbach's alpha can be defined as

$$\alpha \text{ standardised} = K\bar{r} \,/\, (\, 1 + (K-1)\bar{r}\,)$$

Where K is as above and $\bar{r}$ the mean of the K (K -1)/2 non-redundant correlation coefficients (i.e., the mean of an upper triangular, or lower triangular, correlation matrix). The reliability of test scores can be expressed as the ratio of the true-score and total-score (error plus true score) variances:

$$\rho xx = \sigma^2 T/\sigma^2 X$$

The theoretical value of alpha varies from zero to 1, since it is the ratio of two variances. Using statistical packages from the pilot study the Cronbach's Alpha was calculated to assess whether the instrument is reliable and ready to be administered.

Validity

Validity is occupied with how well the measuring instrument performs its function (Surucu and Maslakci, 2020). It is obtained through the careful interpretation of data obtained from the measuring instrument analytically. Validity has two main types namely content validity and construct validity. Content validity is a qualitative form of validity which evaluates whether the expressions contained in the measuring instrument represent the phenomenon intended to be measured. It reveals the extent to which every item in the measuring instrument serves its purpose.

CVR = (Ne-N/2)/N/2

Whereby

CVR =content validity ration

N = Total Number of experts evaluating items in the measuring instrument

Ne = Number of experts evaluating the relevant item as appropriate

Experts use a score determined as Appropriate, Appropriate but should be corrected and subtracted. Based on the above, if the opinion of experts is appropriate whereby CVR>0 and when less than half state 'appropriate' then CVR<0 meaning that expression must be removed from the measuring instrument. The content validity ration can also be tested through statistical methods such as Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA)> Sekaran (2003) points out that validity ensures that the instrument in use, measures what it is expected to measure. On one hand face validity assures that the interpretation or meaning of the given questions are measuring the underlying concepts. Thus, face validity determines the suitability of the questions posted to respondents. On the other hand, content validity will be done to ensure that the questionnaire has adequate components to represent the concept of the study. On processing the results, the Model will ascertain the content validity issue. EFA main role is to identify the few indicators that explain the scale structure and to increase the explanatory capacity of the scale structure. On the other hand, CFA is concerned with the accuracy of the previously validated scale.

Construct validity pertains to the degree to which the instrument measures the concept, idea or a theoretical construct it aims to measure. It has the ability to distinguish between participants exhibiting and not showing the quality being measured. If a measuring instrument has construct validity, it proves that the construct being measured can be revealed (Surucu and Maslaki, 2020).

This study adopted the technique proposed by Fornell and Larcker (1981) for measuring convergent and discriminant validity premised on the Average Explained Variance (AVE) value obtained from each factor so as to determine construct validity.

Procedure

The instrument was validated using the SPSS statistical package through a pilot study undertaken in Matabeleland North Province. The rest of the provinces were covered subsequently. A scale reliability coefficient of 0.8712 was obtained showing that the instrument was reliable and valid.

Table 4.2: Cronbach's Alpha

***(52 variables, 19 observations pasted into data editor**
Average interitem covariance: .8858208
Number of items in the scale: 48
Scale reliability coefficient: 0.8712

Source-Author (2023)

Table 4.3: Evaluation and Scoring of the Questionnaire

Scale	Responses	Mean	Interpretation
1	Strongly Agree	1.00-2.00	Highly Positive
2	Agree	2.01-4.50	Positive
3	Partly Agree	4.51-4.00	Indifferent
4	Do Not Agree	4.01-4.50	Negative
5	Strongly Disagree	4.51-5.00	Highly Negative

Source-Author (2023)

4.10 Ethical Considerations

Ethics is a part or unit of philosophy that pertains to categorising, defending and highlighting tenets of right and wrong behaviour (Mortimer, 1985). Peter, (2000) notes that in essence ethics attempts to respond to enquiries of human morality through explicating concepts such as good and evil, right and wrong, justice and crime, virtue and vice. Hoy (2009) notes that there are three major categories of ethics namely meta-ethics (theoretical meaning of moral situations), normative ethics (practical means to address a moral path of action) and applied ethics (pertaining to an individual obligations in a particular situation). When conducting this study, the researcher leaned on applied ethics though cognisant that the categories intersect due to its scope which includes tenets such as anonymity, beneficence, deception, voluntary consent and plagiarism.

4.10.1 Anonymity, confidentiality and privacy

Anonymity pertains to the practice of not identifying respondents by name, their culture or ethnic background. Mugenda (2011), recommends that a researcher should be secretive about any information regarding the respondents. In the event the information has to be disclosed, consent must be sought from the respondents. Akaranga and Makau (2016), further advise that the respondents should not be subjected to an embarrassing line of enquiry that may lead to physical or psychological harm. In this study the research instrument was designed in such a manner that there is no provision for the name and contact details of the respondents.

4.10.2 Beneficence

This is the practice of explaining to respondents the purpose of the study and the benefits thereof without understating or overstating the benefits that can accrue to the respondents. Mugenda (2011) insists that the guiding declaration on this ethical tenets is to approach the research with a mantra of 'do not harm, add value'. In this study the respondents were advised that the research and information gleaned from the instrument will fill a knowledge gap and ultimately benefit the agriculture industry. The researcher avoided extolling the benefits of the research on individual level and adopted a holistic approach.

4.10.3 Deception

The researcher avoided telling the respondents partly truthful information as this is akin to deception. Akaranga and Makau (2016) point out that this ethical issue can be a challenge in some types of studies where the researcher may not fully disclose information so as to protect, cover up or to safeguard interests of the sponsors. Deception breaches trust and leads to concerns by respondents on violation of their privacy. In this study the purpose of the research was fully communicated to the respondents and the enquiry was above board with no hidden or misrepresented inclinations.

4.10.4 Voluntary Consent

Respondents gave information truthfully with full consent and were not under any form of duress. Akaranga and Makau (2016) point out that respondents must be aware of the concept of voluntary consent or to be freely willing to be a participant in the study. For this study, the researcher explained that the research was for both academic and practical purposes so as to increase the scope of knowledge and assured the respondents that there was no risk whatsoever in partaking.

4.10.5 Plagiarism

Scollon, (1999) explains it as the conscious or subconscious action to disregard granting credit to another researcher or author's work included in one's publication. Serenko, Dumay, Hsiao and Choo (2021) further view plagiarism as the citation of other quotes as a 'third part' from published works without accessing the original works. The researcher avoided this ethical aberration or oversight so as to safeguard the integrity of this study.

4.11 CHAPTER SUMMARY

This Chapter discussed research philosophy, research strategy, research design, population and sampling, research instruments, data collection procedures, data analysis and presentation methods, reliability, validity and the procedure. It also discussed validity and reliability of this study. This Chapter also included a discussion on the different tests carried out in the data analysis which include, Spearman's Correlation Coefficient, Shapiro- Wilk Test, Kruskal-Wallis H-Test and Regression Analysis. The next Chapter pertains to the presentation of the results and their discussion.

CHAPTER 5

RESULTS AND DISCUSSION

5.0 INTRODUCTION

The previous chapter focussed on methodology, research philosophy, research design and sampling technique. This Chapter includes data analysis, presentations of the findings and the attendant discussion of the results. The sections are the descriptives which include demographic profiles, and the statistics. This Chapter sought to identify relationships from data analysis and to establish linkages to current and existing research and theory. The results are linked to the conceptual framework. This chapter comes up with findings pertaining to the set research objectives and hypothesis of the study.

Thus the study results are from the adoption of quantitative research analysis design using parametric statistics, inferential statistics, multivariate analysis and Structural Equation Modeling (SEM). SEM was used to analyse the extent to which the hypothetical model fit. The analysis also involved the use of the Confirmatory Factor Analysis to depict the relationship between the variables. As pointed out by Kang and Ahn, (2021), the data was analysed for goodness-of-fit as this indicates on whether the SEM shows the data output fairly and well. A poor goodness-of-fit means that the results are not reliable.

The statistical methods were used to answer the following research hypothesis:

H_1 There is a significant effect of Ideas and Opportunities Competences on Agricultural Performance.

H_2 There is a significant effect of Resources Competences on Agricultural Performance.

H_3 There is a significant effect of Into Action Competences on Agricultural Performance.

H_4 There is a significant impact of the combined effect of entrepreneurial competence areas on Agricultural Performance.

H_5 There is a direct or indirect effect of entrepreneurial competence areas on Agricultural Performance.

5.1 PRESENTATION OF DESCRIPTIVE DATA

5.1.0 Demographic Profiles

This section pertains to demographic traits of respondents. The aforementioned traits included information on the farm classification, marital status, Province of operation, family unit, School

attendance of dependents and the level of education of respondents. This information enabled the researcher to profile the individuals involved in farming or agriculture so as to give indicators for future planning.

5.1.1 Farm Classification

The table below shows the distribution of farm classifications in a population of 384 farmers.

Table 5.1: Your Farm classification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Communal	117	30.5	30.5	30.5
	Small Holder	77	20.1	20.1	50.5
	Medium Scale	87	22.7	22.7	73.2
	Large Scale	103	26.8	26.8	100.0
	Total	384	100.0	100.0	

Source: Author (2023) Adapted from SPSS Version 26.0

The cumulative percent column shows the percentage of farmers who fall into a particular category or lower. What is of interest in this table is that most farmers are communal, (30.5%). This finding confirms FAO (2016) publications which suggest that 49% of Zimbabwe's agricultural land is under communal farming as per earlier reviewed literature in this study and 50.5% of farmers are either communal or small holder. As alluded before in this study, Mkodzongi and Lawrence (2019) mentioned that the previous hectarage of communal farms remained static under the land reform programme at 16.4 million hectares. Thus it has maintained its dominance in terms of distribution.

5.1.2 Age Group of respondents

The table below shows the age distribution of respondents in a population of 384 farmers.

Table 5.2: Age group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25-29	10	2.6	2.6	2.6
	30-34	27	7.0	7.0	9.6
	35-39	30	7.8	7.8	17.4
	40-44	32	8.3	8.3	25.8
	45-49	29	7.6	7.6	33.3
	50-54	41	10.7	10.7	45.0
	55-59	33	8.6	8.6	52.6
	60-64	34	8.9	8.9	61.5
	65-69	49	12.8	12.8	75.2
	70-74	35	9.1	9.1	83.3
	75-79	30	7.8	7.8	91.1
	80-84	31	8.1	8.1	99.2
	>85	3	.8	.8	100.0
	Total	384	100.0	100.0	

Source: Author (2023) Adapted from SPSS Version 26.0

On age group, the dominant bracket was the 65-69 age group (12.8%) and the least was the 25-29 age group (2.6%). The least group was mostly comprised of succession farmers or heirs of deceased parents. The dominant age group consist of mostly the pioneer farmers at the onset of the land reform. By implication, they have the requisite experience and know-how which has accelerated the development of entrepreneurial competences with time. They also have a passion for the farming activity and this also encourages the development of entrepreneurial competences. This group besides a sentimental value approach to farming, has exhibited resilience and stamina a view noted by Cressy and Storey (1995) who asserted that in their research older business people exhibited higher survival rates. Cumulatively more than 80% of the farmers were found to be less than 74 years old. This finding mirrors that of the ZIMSTAT (2019) survey that found out that 92% of the farmers were less than 74 years old.

Cumulatively, the 25-59 age group was at 52.6%. This age group is the most active in terms of business activity and is well below the retirement age of 65. This group represents self-starters who are keen to approach farming as a business and a source of livelihood in a country where the unemployment rate is high. GoZ (2019) survey notes that the Median age for heads of

households in A1 farms ranges from 45-50 years thus confirming this finding. This group consists of goal getter and self-starters who view farming as an enterprise. This group does not have a 'political legacy' tag as they were too young or not yet born to partake in the war of liberation as frontliners pre 1980 thus Shonhe et al (2020) views them as emergent commercial farmers who have seized the opportunity and have been innovative in a Schumpeterian narrative and a display of Ideas and Opportunities competences.

This group is of interest to the researcher in that they could be key in adopting the recommendations this study proffers. This is a group which is looking for an economic solution to their livelihood. Ruis and Scholman (2012) implore researchers to study the effect of age on entrepreneurship and business performance and the possible macro-economic impact in areas such as employment creation. Earlier research by Watkins (1994) argues that younger business owners have more motivation, commitment and are risk takers thereby making them perform better in business. This is a view shared by this researcher and it explains the uptake of farming by the 25-59 age group.

Ruis and Scholman (2012), implore researchers to study the effect of age on entrepreneurship and business performance and possible macro-economic impact as in employment creation. Maebane (2023), argues that younger business owners have more motivation, commitment and are risk takers thereby making them perform better in business though they need government support. This is a view shared by this researcher and further studies are needed for a Zimbabwean context in the agricultural sector. Osunsan, Kinyatta, Baliruno and Kibirige (2015) on studies carried out in Uganda implore government to avail resources to the young as this will lead to employment creation.

Other research in support of these results by Atibioke et al, (2012), showed that 75% of the respondents in farming were in the age group of 30-50 years. They assert that younger people have a higher likelihood or inclination to embrace innovative and technological ways to improve farm performance. Research in Tanzania by Kulyakwave et al, (2019), showed that 52% of the respondents had an average of 45 years. Those within the mean age range had higher agricultural performance in terms of yields implying that the younger farmers are active and their participation in adopting novel practices render them effective. Also in another study, using regression analysis across three age groups of 15-19, 20-25 and 26-29, Ahmed and Kar (2019), showed that as the entrepreneur age increased, the business performance increased.

5.1.3 Distribution of Questionnaires in Provinces

The table below shows the distribution of questionnaires in a population of 384 farmers.

Table 5.3: Province

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Matebeleland North	48	12.5	12.5	12.5
	Matebeleland South	48	12.5	12.5	25.0
	Midlands	48	12.5	12.5	37.5
	Masvingo	48	12.5	12.5	50.0
	Manicaland	48	12.5	12.5	62.5
	Mashonaland East	48	12.5	12.5	75.0
	Mashonaland Central	48	12.5	12.5	87.5
	Mashonaland West	48	12.5	12.5	100.0
	Total	384	100.0	100.0	

The study adopted the stratified sampling method where the sample size was divided equally into homogenous subgroups or strata of 48 respondents per province selected at random. Proportional stratified sampling is a type of stratified sampling in which the sample size of each stratum is proportional to the size of that stratum in the population. This means that each stratum is represented in the sample in the same proportion as it is represented in the population.

5.1.4 Marital Status of respondents

The table below shows the marital status of respondents in a population of 384 farmers.

Table 5.4: Marital Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never married	1	.3	.3	.3
	Divorced	4	1.0	1.0	1.3
	Married	360	93.8	93.8	95.1
	Widowed	19	5.9	5.9	100.0
	Total	384	100.0	100.0	

Source: Author (2023) Adapted from SPSS Version 26.0

The findings of this study show that most of the respondents were married (93.8%). The farming pattern is exhibited by family run set ups. The farm units are operated by families and they are dependent on the farming activity for household incomes and livelihood. There is division of labour in the family set up reducing the need for external personnel who may be expensive to retain and who may not be dependable. This observation confirms the 'Jack of all trades Theory' adopted in this study to explain the Into Action Competences in the literature review of this study. Results by Kulyakwave et al, Yu (2019), show that married farmers exhibited higher yields and high performance. They attribute this to increased labour, knowledge sharing and capital. Due to family needs, the married farmers are more focussed on their sustenance and livelihood.

More studies carried out in South Africa, show that the marital status has a positive correlation with farming performance and there is household support and assistance in the activities (Mazibuko, Balarane, Antwi and Yeki, 2018). Wairimu et al, (2016), asserts that large households have the numbers in terms of labour thus they are willing to invest in farming to improve their livelihood and as such they exhibit growth in agriculture.

The results were further supported by Atibioke et al (2012), who found out that 75% of the respondents were married. They assert that marriage is a means of generating family labour who then participate in production, processing, marketing and the employment of technologies. Kulyakwave et al (2019), showed that married respondents had an advantage in their study where rice yields were higher and they attribute that to labour benefits.

5.1.5 Family Unit

The table below shows the distribution of respondents family unit in a population of 384 farmers.

Table 5.5: Do you live with your family?-yes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	2	.5	.5	.5
	1	382	99.5	99.5	100.0
	Total	384	100.0	100.0	

Source: Author (2023) Adapted from SPSS Version 26.0

The results concur with the earlier assertion on marital status that the farming units comprise of family operated set ups and therefore the farming activity becomes a source of livelihood and

there is division of labour in the family set up reducing the need for external personnel who may be expensive to retain and who may not be dependable thus improving incomes and providing consistency on farm performance. This finding is also consistent to Cliffe, Alexander, Cousins and Gaidzanwa (2011) who suggested that the dominant criteria for land allocation was centred on married couples or that women would seek land within a family unit capacity. Fitz-Koch et al (2018) noted that globally the family unit is an integral part of the entrepreneurial thrust in agriculture. The farms depend on the collective family contributions and commitment. This is of benefit on succession dynamics and it is highly probable that the successor generations will pursue and adopt modern technologies and they will exhibit a higher entrepreneurial competences aptitude. The researcher concurs with this observation and attests that all of the below 35 years old farmers (from the age demographics) were successors or heirs and the farms were a family inheritance.

5.1.6 Household size of respondents

The table below shows the household size of respondents in a population of 384 farmers.

Table 5.6: Household size

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	30	7.8	7.8	7.8
	3	41	10.7	10.7	18.5
	4	62	16.1	16.1	35.6
	5	73	19.0	19.0	53.6
	6	47	12.2	12.2	65.9
	7	45	11.7	11.7	77.6
	8	29	7.6	7.6	85.2
	9	32	8.3	8.3	93.5
	10	11	2.9	2.9	96.4
	11	10	2.6	2.6	99.0
	12	2	.5	.5	99.5
	13	1	.3	.3	99.7
	14	1	.3	.3	100.0
	Total	384	100.0	100.0	

Source: Author (2023) Adapted from SPSS Version 26.0

The dominant household size comprises of 5 members (19.0%). This resonates with the national average of an average of 4 members per household (ZIMSTAT, 2023). Households are at the core of the farming activity and they supply personnel for labour from within. Farming families

tend to have more children who may help out with chores and tasks since most of the activities are capital intensive. The farming families also tend to have extended family set ups due to cultural and religious considerations.

5.1.7 Children Attending School

The table below shows the distribution of respondent's children attending school in a population of 384 farmers.

Table 5.7: How many of your children attend school?-total

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	224	58.3	58.3	58.3
	1	10	2.6	2.6	60.9
	2	67	17.4	17.4	78.4
	3	46	12.0	12.0	90.4
	4	18	5.7	5.7	95.1
	5	18	5.7	5.7	99.7
	7	1	.3	.3	100.0
	Total	384	100.0	100.0	

On this demographic profile, 58.3% of the farmers no longer have the responsibility of school attending children. Those with school attending children are at 41.7%. The income from farming activities is used for educational expenses and household needs. The absence of children due to schooling implies that such farmers may need to outsource labour. Though child labour is prohibited under the laws of Zimbabwe, helping out by children is culturally encouraged as a form of grooming and is not regarded as a contravention of the law.

5.1.8 Highest Level of Education of Respondents

The table below shows the distribution of respondent's highest level of education attained in a population of 384 farmers.

Table 5.8: What is the highest level of education of you and your spouse?-self

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No formal education	1	.3	.3	.3
	Grade 1-7	7	1.8	1.8	2.1
	Form 1-4	124	32.3	32.3	35.4
	Form 5-6	144	37.5	37.5	71.9
	Tertiary	108	28.1	28.1	100.0
	Total	384	100.0	100.0	

Source: Author (2023) Adapted from SPSS Version 26.0

The literacy levels of the respondents were at a high of 99.7%. The dominant group of 37.5% had attained Advanced level studies and degreed or tertiary level respondents were at 28.1%. The literacy levels are confirmed by the ZIMSTAT (2023) report which places the national literacy levels at 95.1%. This means that the respondents have a better understanding on entrepreneurial competences which are cognitive and they have a higher aptitude to learn or to acquire them through training besides those who innately possess them. Lewa and Ndingu (2012) in studies done in Kenya note that respondents who practiced and learnt agriculture at secondary school exhibited a higher propensity to take up farming as a career. Though their study was on career options, they assert that the skills learnt have a positive bearing on future farm performance. Research by Paltasingh and Goyari (2018) in India show that education level has a positive effect on farm performance and that is attributed to a higher capacity to adopt modern technology. They view farmer educational level as a complementary to research, development and adoption of technologies in the farming sector which then becomes a precursor for improved yields and farm performance. The researcher concurs with this observation and as education levels in Zimbabwe imply a high aptitude towards adoption of technologies and consequently a better farm performance.

Furthermore, studies in Vietnam show that a low level of education attained, adversely affects agricultural output. Though the farmers in the Vietnamese study exhibited a low level of education, they have endeavored to send their children to school as it is their expectation that education will bring economic value to their farming business (Ninh, 2021). Thus, this researcher

contends that education attainment has positive implications for a better understanding on technologies, acumen and agricultural practices needed to bolster farm performance.

The results were further supported by Vallabh and Mhlanga (2015), show that demographic profiles such as gender, education and income have a positive impact on business performance. They proffer that education and training are essential for improved business performance as skilled personnel can be complementary to future needs of industry. Other studies in Nigeria by Tokula (2019), show that education and access to extension services have a significant positive impact to technology adoption in farming. They assert that educated farmers are receptive to innovative agricultural techniques. Kulyakwave et al (2019) also showed that 56% of the respondents who had accessed primary to tertiary education exhibited higher yields relative to respondents with less education.

From the researcher perspective these results imply that Zimbabwe can tap into the 95.1% literacy rate to introduce innovative agricultural techniques and there is a high probability that these will be well received by the farming community and adopted so as to improve the agricultural performance. Research on the dairy farming in Marirangwe and selected Eastern Highlands in Zimbabwe by Ngongoni, Mapiye, Mwale and Mupeta, (2006), concurs with this assertion by showing that the adoption of new and improved technologies in agriculture was positively related to education. In their research the calibre of dairy farmers were retired professionals who had a significant capital outlay to invest in modest infrastructure and good breeds.

5.2 Demographic Profiles Analysis

Table 5.9: Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
idea_ave	.297	384	.000	.752	384	.000
resources_ave	.301	384	.000	.759	384	.000
action_ave	.299	384	.000	.757	384	.000
profitability_ave	.316	384	.000	.767	384	.000

a. Lilliefors Significance Correction

Source: Author (2023) Adapted from SPSS Version 26.0

The Shapiro-Wilk test was used to assess the normality of the data. The test results show that the p-values for all five variables were less than 0.05, which indicates that the data is not normally distributed. Therefore, non-parametric tests were used for further analysis. The Shapiro-Wilk test is a statistical test that is used to test the null hypothesis that a data set is normally distributed. The test results are reported as a p-value. A p-value of less than 0.05 indicates that the null hypothesis can be rejected, which means that the data is not normally distributed.

Kruskal Wallis: Agricultural Performance vs Farm classification

Table 5.10: Test Statistics[a,b] Agricultural Performance vs Farm classification

	profitability_ave
Chi-Square	2.678
Df	3
Asymp. Sig.	.444

a. Kruskal Wallis Test

b. Grouping Variable: 1. Your Farm classification

Source: Author (2023) Adapted from SPSS Version 26.0

The Kruskal-Wallis H test showed that there was no statistically significant difference in the farmers agricultural performance margins between the farm classification $\chi^2(2) = 2.678$, $p > 0.05$. Previous research had shown resettled farmers to be more productive than communal farmers. This was attributed to a higher usage of inputs and better know how on maximisation of inputs such as fertilisers (Zikhali, 2008). However the results show otherwise and the researcher attributes the indifference on agricultural performance to innovative approaches targeting the communal farmer such as conservation agriculture and climate change mitigatory strategies such as *pfumvudza*. In concurrence Mavesere and Dzawanda (2023), in studies carried out in Mutare, assert that Pfumvudza has improved agricultural performance in communal areas through adoption of climate change resilient varieties. They further advocate for the adoption of this system nationally. Thus the communal areas have caught up on agricultural performance with other farmer classes notwithstanding the different approaches and capacity.

Kruskal Wallis: Agricultural Performance vs Province

Table 5.11: Test Statistics[a,b] Agricultural Performance vs Province

	profitability_ave
Chi-Square	67.101
Df	7
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: 3. Province

Source: Author (2023) Adapted from SPSS Version 26.0

Table 5.12: Provincial Agricultural Performance Rankings

Ranks

	3. Province	N	Mean Rank
profitability_ave	1	48	165.15
	2	48	160.58
	3	48	178.11
	4	48	115.99
	5	48	239.28
	6	48	253.08
	7	48	215.99
	8	48	212.81
	Total	384	

Source: Author (2023) Adapted from SPSS Version 26.0

Zimbabwe has different agro-ecological regions which cut out across the provinces. The resultant diversity means that the different provinces have unique farming systems peculiar to the natural conditions. The Kruskal-Wallis H test shows that there is statistically significant difference in the farmers profitability margins between the provinces $\chi^2(7)= 67.101$, $p < 0.05$. Mashonaland East Province rated higher on their profitability scores while Masvingo province had the lowest profitability scores. Mashonaland East has very stable rainfall and farmers are into cash crops hence their entrepreneurial focus is higher .Mashonaland East is predominantly in the agro-ecological region II. In studies done in the dairy sector, milk yield and quality was significantly higher in natural region II than other regions (Mavunga, Gororo and Tada, 2022).

Research conducted over a 19 year period by Sharara, Shekede, Gwitira, Masocha and Dube (2022), showed that in drought probability assessments agro-ecological regions 4 and 5 are predominantly drought prone with an estimated 40% chance of experiencing a drought in any season. This finding resonates with this study and explains the performance of Masvingo Province. Though literature places Matebeleland provinces in the same predicament, the reliance on livestock productive rather than cropping overall, mean they performed better than Masvingo. Research by Chingarande, Mugano, Chagwiza and Hungwe (2020) notes that from 2017, Masvingo province has had foot and mouth disease outbreaks and droughts leading to dependency on food aid in areas such as Mwenezi, Zaka, Chivi and Bikita. They note that the aforementioned districts exhibit low levels of resilience, poverty and low food security and the situation was worsened by Cyclone Idai in 2019 which damaged infrastructure and fields. According to reviewed literature Masvingo has high water insecurity and is a food deficit area and this is a factor contributing to low performance scores.

Kruskal Wallis: Agricultural Performance vs Education Level

Table 5.13: Test Statistics[a,b] Agricultural Performance vs Education Level

	profitability_ave
Chi-Square	58.323
Df	4
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: 8a. What is the highest level of education of you and your spouse?-self

Source: Author (2023) Adapted from SPSS Version 26.0

The Kruskal-Wallis H test shows that there is no statistically significant difference in the farmers profitability margins between the levels of education $\chi^2(4)$= 58.323, $p < 0.05$. Farmers that had reached tertiary level rated higher their profitability scores while those finished with 'O' level had the lowest profitability scores.

5.3. Testing of Research Hypothesis 1

H_1 There is a significant effect of Ideas and Opportunities Competences on Agricultural Performance.

Table 5.14: Correlations (Ideas and Opportunities Competences)

			idea_ave	profitability_ave
Spearman's rho	idea_ave	Correlation Coefficient	1.000	.946**
		Sig (2-tailed)	.	.000
		N	384	384
	profitability_ave	Correlation Coefficient	.946**	1.000
		Sig (2-tailed)	.000	.
		N	384	384

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Author (2023) Adapted from SPSS Version 26.0

A Spearman's rank order correlation was run to determine the relationship between ideas and opportunities competencies and farmers agriculture profitability. There was a strong, positive correlation between the ability to have ideas and profitability, $r_s = 0.946$, $p < 0.05$. This means that those with higher ideas and opportunities competencies ability are more likely to come up with innovative ideas that can lead to new products and services thereby leading to improved agricultural performance. There are various indicators for this variable or construct. These include propensity to spot opportunities, creativity, vision, valuing ideas, ethical and sustainable thinking. These results corroborate findings by Wahidi (2022) on an exploratory study in Lebanon shows that the co-efficient for spotting a great opportunity ahead of competition is statistically significant (0.02<0.05) showing that there is a positive relationship between it and entrepreneurial aptitude. Other empirical evidence confirming these findings by Van Stel et al (2021) their results show that entrepreneurs who were driven by need to seize opportunities had the highest earnings relative to necessity entrepreneurs.

Studies done in Africa by Adeyeye et al (2019) show a strong positive correlation between opportunity driven intentions and business growth. There was a significant and positive correlation between the opportunity-driven entrepreneurship at 0.434 significant at P<0.01 and the necessity driven motive at 0.247 at P<0.05. These findings resonate with this study.

Kenyan research by Ng'aru (2019) shows that opportunity seeking entrepreneur generates a higher revenue for the business. The results had a mean response of 3.04 and a standard

deviation of 0.88. Regression of coefficients showed that the opportunity entrepreneur and business growth had a positive and significant relationship. R=0.245 p=0.000.

Munizu and Hamid (2018) used creativity which is an indicator of ideas and opportunities competences and their results corroborate this study findings in that it showed that the coefficient of creativity on business performance was 0.411 implying that the higher the creativity the higher the business performance generated. Also on creativity Mujanah et al (2021), showed that creativity resulted in a significant increase on business performance and was depicted by the t-statistic of 5,383 (>1, 96) with a coefficient of 0,378.

This empirical evidence shows a strong confirmation of the findings on testing this hypothesis.

5.4 Testing of Research Hypothesis 2

$H_{2\ There}$ is a significant effect of Resources Competences on Agricultural Performance.

Table 5.15: Correlations (Resources Competences)

			resources_ave	profitability_ave
Spearman's rho	resources_ave	Correlation Coefficient	1.000	.947**
		Sig (2-tailed)	.	.000
		N	384	384
	profitability_ave	Correlation Coefficient	.947**	1.000
		Sig (2-tailed)	.000	.
		N	384	384

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Author (2023) Adapted from SPSS Version 26.0

A Spearman's rank order correlation was run to determine the relationship between resources competences and agriculture profitability. There was a strong, positive correlation between the ability to possess resources competences and profitability, $r_s = 0.947$, $p < 0.05$. This means that those with higher resources competences are more likely to come up with to exhibit an improved agricultural performance. There are various indicators for this variable namely self-efficacy, motivation, mobilisation of resources, financial and economic literacy and mobilisation of other stakeholders. These results confirm earlier findings on the self-efficacy indicator of resources competences by Maluda and Alias (2022) which showed that it had of a positive impact on entrepreneurship. The study showed that self-efficacy can be further enhanced through training. Msuga et al, (2008) showed that well organized small holder farmers with management skills have a higher likelihood to increase production and productivity. In their view, well organized smallholder farmers have adequate knowledge and understanding of productivity variation. These farmers exhibit farm-specific variables such as education, access to finance and extension services and tenancy.

In support of these findings, Hidayah et al (2013) further asserts that management aptitude and competences can improve productivity though they looked on technical efficiency for Indonesia. These results concur with findings in by Mujuru (2014) on studies conducted in Dotito, Mashonaland Central (Zimbabwe) that showed that farmers who exhibited indicators of resources competences and aptitudes such as management skills operated their agricultural businesses successful.

Fonger (2017), asserts that management competences such mobilisation of resources, financial management as an entrepreneurial focus that can lead to significant growth of a business. Studies by Al Mamum and Ali Fazali (2018) in Malaysia on entrepreneurial orientation, competences and micro-enterprise performance showed that resources competences had a mediating effect on the relationship between creativity, innovativeness, autonomy and micro-enterprise performance. They recommended that training programs in entrepreneurial competences could improve micro-enterprise performance.

Ng'aru (2019) in a study done in Kenya showed that independence, innovativeness, risk taking, proactiveness, self-efficacy and competences in management (which are indicators of resources competences) have a positive and significant effect on the growth of the business or enterprises. Another study that lends credibility to these findings by Tindika et al (2019) also in Kenya show that the indicators of resources competences such as indicated that alertness and inherent knowledge have a significant favourable influence on business growth. Similar studies in Kuwait showed that that the entrepreneurial leadership had positive and significant implication on business performance.

Studies in Pakistan though limited in scope to information technology industries done in 2019 and published in 2022, showed that manager competency through an entrepreneurial approach had a positive impact on project success (Ul Haq and Iqbal, 2022). Their study sought to fill the knowledge gap between project success and entrepreneurial orientation.

Machmud and Sidharta (2016) in their study of motivation an indicator of resources competences showed that high motivation leads to higher business performance and the multiple regression analysis showed this effect at a coefficient of 0,153 and p value of 0,036. Other studies by Riana (2015), also on motivation showed a predictive-relevance value of 0,832 (>0) implying that 83, 2% of variance in business performance (dependent variable) can be explained by the independent variable of motivation.

Usama and Yusoff (2019), studied financial literacy a key indicator of resources competences and used regression analysis to test their hypothesis on financial literacy as an independent variable and business performance as a dependent variable. The R^2 value of 0,656 implies that the effect of financial literacy explained 65, 6% of the variation of business performance confirming that it has a positive and significant effect on business performance. Fauzi, Wulandari and Lutfi (2018), also on financial literacy their study using logistic regression proved that financial literacy is a significant predictor of the overall business performance in medium sized enterprises.

This empirical evidence shows a strong confirmation of the findings on testing this hypothesis.

5.5 Testing of Research Hypothesis 3

$H_{3\ There}$ is a significant effect of Into Action Competences on Agricultural Performance.

Table 5.16: Correlations (Into Action Competences)

			action_ave	profitability_ave
Spearman's rho	action_ave	Correlation Coefficient	1.000	.954**
		Sig (2-tailed)	.	.000
		N	384	384
	profitability_ave	Correlation Coefficient	.954**	1.000
		Sig (2-tailed)	.000	.
		N	384	384

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Author (2023) Adapted from SPSS Version 26.0

A Spearman's rank order correlation was run to determine the relationship between Into Action competences and agriculture profitability. There was a strong, positive correlation between the ability to possess resources competences and profitability, r_s = 0.954, p <0.05. This means that those with higher Into Action competences are more likely to exhibit improved agricultural performance. There are various indicators for this variable such as the ability to take an initiative, planning and management, withstanding risk and ambiguity, team work, strategy and experiential learning. In conformity with these findings, studies by Eschker et al (2017) on rural enterprises in Hispanic countries, showed that those with networking support, marketing exhibited successful business performance.

More research on the indicator of networking, Vaskova (2007) noted that the high degree of a common purpose for the completion of a task leads to an achievement. Studies by Prasheenaa and Thavakumar (2021) in Sri Lanka, Kandy District found that there is a high level of team orientation and networking among employees giving their companies crucial competitive advantages inclusive of higher productivity, high quality products and low staff turnover.

In further support of the findings, Jamal and Chellakan (2020) in their study of entrepreneurial competences, showed that strategy had a positive significant relationship with small to medium enterprises success. They showed that strategy as a variable in their research demonstrated significant correlation results on business success as a dependent variable.

Further studies on small to medium enterprises by Amoako and Boateng (2022) showed that poor marketing strategy had a negative influence on the business performance. Other earlier

studies by Bergevoet et al (2004) among Dutch dairy farmers established that an increase in strategic skills improved entrepreneurial performance.

Sandada, Pooe and Dhurup (2014) looked at strategic planning as an indicator of into action competences. Their study showed in regression results that strategic planning factors had an adjusted R^2 value of 0.47 which implies that the strategic planning factors explained 47% of the variance in the business performance of SMEs. The beta coefficients showed that strategic planning made a significant contribution to the business performance of SMEs ($\beta = 0.27$, $p < 0.05$).

Karel, Adam and Radomir (2013) showed that the existence of a detailed written strategic plan had a significant positive effect on selected business performance indicators and the result was confirmed by 80% of the studied performance parameters.

Staniewski (2016) in a study of learning by experience as an indicator of into action competences employing stepwise regression to verify the predictive value of variables showed that entrepreneurs with managerial experience obtained higher mean scores in the dependent variable of entrepreneurial or business success.

This empirical evidence shows a strong confirmation of the findings on testing this hypothesis.

5.6 Testing of Research Hypothesis 4

H_4 There is a significant impact of the combined effect of entrepreneurial competence areas on Agricultural Performance.

Table 5.17: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.943[a]	.890	.890	.51534	.890	1542.612	2	381	.000	1.714

a. Predictors: (Constant), action_nw_2, action_nw

b. Dependent Variable: profitability_ave

Source: Author (2023) Adapted from SPSS Version 26.0

The summary table gives the R (0.943) and adjusted R square (0.890). Thus, this model is predicting 89% of the variance in profitability. The Durbin-Watson value of 1.714 shows that there is a positive autocorrelation in the residuals, meaning that the model did not fit fully well.

Table 5.18: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	819.344	2	409.672	1542.612	.000[b]
	Residual	101.182	381	.266		
	Total	920.527	383			

a. Dependent Variable: profitability_ave

b. Predictors: (Constant), action_nw_2, action_nw

Source: Author (2023) Adapted from SPSS Version 26.0

As can be seen from the ANOVA table (Table 5.18), the polynomial model of action significantly predicts a high agricultural performance, F (2, 381) = 1542.612, p <0.05.

Table 5.19: Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	3.444	.043		79.507	.000		
action_nw	1.100	.026	1.048	41.594	.000	.454	2.201
action_nw_2	.094	.016	.149	5.907	.000	.454	2.201

a. Dependent Variable: profitability_ave

Source: Author (2023) Adapted from SPSS Version 26.0

Multiple regression was conducted to determine the best linear combination of ideas and opportunities competencies, resources and action capabilities of the farmers for predicting profitability of the farms. The models shows high multicollinearity for the independent variables, hence they were dropped. After investigating the possibility of a polynomial model, it was shown that the higher dimensional values of action were fitting the data. The combination of variables significantly predicted profitability, F (2, 381) = 1542.612, p <0.05, with all two variables significantly contributing to the prediction. The positive beta weights show that the increase of into action competences also increases the profitability of farmers. The model achieved an adjusted R-square value of 0.89, indicating that the model explains 89% of the variance in agricultural performance. In support of these results, other research by Abaho et al (2016) shows that entrepreneurial competences and business performances were positively and significantly related (r=0.460 at 0.01 level, 2 tailed, p <0.01). They assert that the findings imply that when a business owner exhibits entrepreneurial competences, the business is likely to attain a higher sales volume. On regression analysis, their results showed that entrepreneurial competences have the capacity to predict 30.4% of the variance on business performance (Adjusted r^2=0.304). The implication is that a change in the entrepreneurial competences capacity causes a 30.4% change in the business performance that may be represented by sales, profits *ceteris paribus.*

Other research by Jamal and Chellakan (2020), showed that there is a moderate positive relationship between entrepreneurial competences and business performance (r = 0.539, p = <0.000). The regression analysis showed that 69.5% of the variance in business performance could be explained by entrepreneurial competences. Thus the combined entrepreneurial competences have a significant ability to influence business success. Pranowo et al (2020) in their study showed that entrepreneurial competences had a composite reliability CR of 0.89>0.70

and the Average Variance Extracted (AVE) of 0.501 > 0.50. By implication their data was valid and reliable and on hypothesis testing, they showed that entrepreneurial competences positively affect the business performance with a t-value = 2.166 > t-table = 1.967/ and p value of 0.008 < 0.05 thereby implying that the higher the possession of entrepreneurial competences by an entrepreneur then the business performance also tends to increase. Other studies support these findings as the research by Muniraju (2020) in India that showed that for combined entrepreneurial competences, the respondents among caste women entrepreneurs scored a low mean thus their business performance was deemed to be low further demonstrating the significant effect of entrepreneurial competences. Sumawidjaja, Ahman and Machmud (2019), in their study of the impact of entrepreneurial competences on industry performance in Indonesia showed in their regression model that R^2 was 0.52 suggesting that 52% of variations that occur in the firm performance can be explained by the combined effect of entrepreneurial competences. The results confirm that entrepreneurial competences have a positive effect on the business performance also lending credence to this study results.

Other corroborative findings are from the research by Sakib et al (2022) in their study of entrepreneurial competences and SMEs performance in a developing economy centred on Bangladesh showed that all the indicators or constructs of entrepreneurial competences were able to predict and explain 40.9% of the performance of SMEs since the R^2 was 0.409 and the predictive relevance (Q^2) was 0.247 indicating that all constructs of entrepreneurial competences have some extent of predictive relevance as the determined value was higher than 0. Their results show a positive relationship between entrepreneurial competences and business performance.

The results of this study are further supported by Kamuri (2023) in their study on leather industries in Kenya who found out that the independent variable (entrepreneurial competences) and the dependent variable (business performance) exhibited a linear relationship and the p-values were greater than the level of significance of 0.05. Entrepreneurial competence was regressed on business performance and the results interpreted through R^2 values and p -values at $p<0.05$ significance level. The coefficient of 0.539 implied that a unit increase in entrepreneurial competences increased performance by 0.539 units suggesting that there is a positive and significant relationship between entrepreneurial competence and performance. The multi regression analysis showed that the R^2 value of 0.637 implying that entrepreneurial competences explain 63.7% of the business performance.

5.7 Testing of Research Hypothesis 5

H_5 There is a direct or indirect effect of entrepreneurial competence areas on Agricultural Performance.

The table below shows the Root Mean Square Error of Approximation (RMSEA). Brown and Cudeck (1992) view RMSEA as an estimate or measure of deviation or difference between the envisaged model and the data model. If the value is less than 0.05, then the model is a good fit. For values between 0.05 and o.o8 the model is an acceptable fit.

Table 5.20: Root Mean Square Error of Approximation

Item	**Result**
Chi-Square	647.553
Df	167
P value	0.00
RMSEA	0.087
RMSEA CI	(0.08, 0.094)
RMSEA p value	0.00
CFI	1
SRMR	0.024

Source: Author (2023) Adapted from SPSS Version 26.0

The DWLS (Diagonally Weighted Least Squares) estimator was used for the analysis. The NLMINB (Nonlinear Minimization with Bounded Constraints) method was used for optimization. The model used in the analysis had 103 parameters, on a total of 384 observations. The Satorra-Bentler scaled chi-square for the model χ^2(df) =647.553(167) which was statistically significant at the p value scaled = 0.00 <0.05. This means that there is a difference between the model implied and the actual covariance matrices. Since the Root Mean Square Error of Approximation (RMSEA) is less than 0.1, but above 0.05, it is concluded that the model is an acceptable fit,

judging from the RMSEA estimate of 0.084 and the 90% CI [0.08, 0.094]. However, the p value less than 0.05, does not significantly support this claim of close fit. The Comparative Fit Index (CFI) value of 1 and Standardized Root Mean Square Residual (SRMR) of 0.024 threshold values offered evidence that the model is adequate and fitted the data reasonably well.

Table 5.21: Standardised Coefficients (Factor Loadings)

LV	Item	Coefficient	Lower CI	Upper CI	SE	Z	p-value
Ideas	ido7	0.999701	0.998757	1.000645	5.82E-04	2075.636	0
Ideas	ido8	0.997002	0.995863	0.99814	5.81E-04	1716.471	0
Ideas	ido9	0.998532	0.99747	0.999595	5.42E-04	1842.302	0
Ideas	ido10	0.998717	0.998021	0.999412	3.55E-04	2815.523	0
Ideas	ido11	1.000865	0.999969	1.001761	5.57E-04	2189.619	0
Resources	resoc12	1.009361	1.005532	1.01319	0.001954	516.6484	0
Resources	resoc13	0.981459	0.974692	0.988227	0.003453	285.2331	0
Resources	resoc14	0.997074	0.995347	0.9988	8.81E-04	1132.005	0
Resources	resoc15	0.993605	0.99146	0.99575	0.001094	907.9589	0
Action	into_ac16	0.999334	0.998312	1.000356	5.22E-04	1916.115	0
Action	into_ac17	1.000549	0.999289	1.00181	6.43E-04	1555.661	0
Action	into_ac18	0.998151	0.997136	0.999166	5.18E-04	1927.961	0
Action	into_ac19	0.997495	0.996071	0.998919	7.26E-04	1373.111	0
Action	into_ac20	0.992099	0.989193	0.995005	0.001483	669.0964	0
Profitability	profi26	0.999076	0.998548	0.999605	2.70E-04	3703.988	0
Profitability	profi27	0.999168	0.998659	0.999676	2.59E-04	3850.791	0
Profitability	profi28	0.999057	0.998523	0.999592	2.73E-04	3662.096	0
Profitability	profi29	0.999276	0.998847	0.999705	2.19E-04	4565.916	0
Profitability	profi30	0.99893	0.998375	0.999486	2.83E-04	3525.595	0
Profitability	profi31	0.999187	0.998608	0.999767	2.96E-04	3381.115	0
Profitability	ideas	0.994265	0.992161	0.99637	0.001074	925.9779	0
Profitability	Resources	0.992105	0.98924	0.99497	0.001462	678.7883	0
Profitability	Action	0.99261	0.990263	0.994956	0.001197	829.1457	0

Source: Author (2023) Adapted from SPSS Version 26.0

The table above shows the standardized coefficients (factor loadings) for items on latent variables (LV). The p-values testing the hypothesis that the coefficient = 0 is rejected. The factor loadings ranges from 0.98 to 1 suggesting that the level of relationship was significantly adequate. These standardized factor loadings are robust values meaning they are insensitive to non-normality problems.

Structural Equation Modeling (SEM) is used to verify complex phenomena in research. It explicates the structural relationships between cause and effect variables for the research focus into an equation and also to pint out relationships within the concepts. Hong (2000) states that the benefits of SEM include the capacity to manage measurement errors, to utilise mediating variables and to statistically evaluate the model. This then enables the researcher to adopt the model as valid or to adjust or change it if need be.

The Structural Equation Model for the Study (SEM)

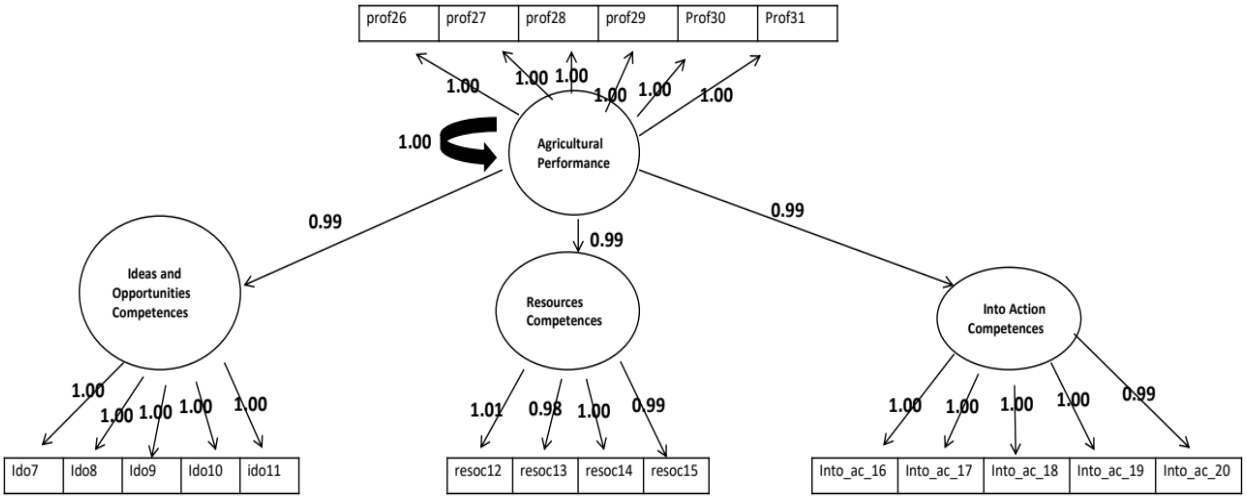


Figure 5.1 The Structural Equation Model for the Study (SEM)
Source-Author (2023)

The structural equation modelling is able to determine relationships and to suggest a general fit between the observed data and the research model. The model fit indices for the structural model were satisfactory. The factor loadings range from 0.98-1 suggesting that the level of relationship was significantly adequate. This implies that a unit increase in each of the variables results in a matching increase in the predictive capability of entrepreneurial competences towards improving agricultural performance.

5.8 CHAPTER SUMMARY

The Chapter analysed the data collected and presented the results. The presentation of results began with descriptive statistics showing the demographic profiles of respondents. This was followed by findings from quantitative analysis culminating in a model expressing the relationship of entrepreneurial competences and agricultural farm performance. The next Chapter deals with conclusions and implications of this study.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

The previous Chapter dealt with results presentation, analysis and interpretation of results. It looked at the demographic profiles and the testing of hypothesis. It culminated in a model showing the relationship of entrepreneurial competences and agricultural performance. This Chapter presents conclusions derived from the study findings. This Chapter gives a theoretical meaning and a contextual understanding on the relationship between entrepreneurial competences and agricultural performance. The conclusion is presented in relation to the objectives set out on Chapter 1 of this study. The Chapter also includes the study implications on theory, the implications on policy, the limitations and future research aspects.

6.2 CONCLUSION

6.2.1 Demographic Profiles and Agricultural Performance

The demographic profiles considered were farm class, province and educational levels. On farm classification levels, the results showed that there was no statistically significant difference in the agricultural performance between farm classification. This could be due to innovations on agriculture which are being carried out to include the communal farmer to mainstream agriculture. These innovations such as conservation agriculture and 'pfumvudza' entail improving productive capacity.

On the province, there was a significant difference in the performance of farmers. Mashonaland East Province exhibited higher performance scores and Masvingo ranked last. Mashonaland East has very stable rainfall and farmers are into cash crops hence their entrepreneurial focus is higher. They are able to enter into contract farming in some instances.

Lastly on education, farmers who reached tertiary level rated higher on agricultural performance than lower education level farmers. This may be due to a capacity to grasp technologies and innovative methods of farming. Since entrepreneurial competences are cognitive, these farmers have shown that they have a higher capacity to be trainable. Their approach to farming is not of a subsistence level but an income generating venture.

6.2.2 The effect of Ideas and Opportunities Competences Area on Agricultural Performance.

The results showed that farmers who have a high exhibition or possession of ideas and opportunities competences had a higher agricultural performance score. These farmers are likely to use their imagination, identify opportunities, develop creative ideas, work towards a vision and make the most of the opportunities thereby improving their agricultural performance.

Farmers need to be able to seize opportunities and create value through utilising the existing landscape. They should identify needs and have an aptitude to mitigate challenges. They should be innovative and creative in their approach to farming with the ability to combine knowledge and innovation to achieve a satisfactory agricultural performance. They need to be visionary through being able to see into the future (imagination) and transform that vision into ideas, assess its potential and gravitate towards maximisation of the idea. Farmers must embrace ethical approaches and be disciplined so as to adopt responsible activities.

The results are corroborated and confirmed by empirical evidence from other studies that show that there is a significant effect of ideas and opportunities competences and their sub competences or specific indicators on business performance (Adeyeye et al, 2019, Alvarez and Busenitz, 2001; Fong et al, 2018; Mujanah et al, 2021; Munizu and Hamid, 2018; Ng'aru, 2019; Syam et al, 2020;;; Ramli et al, 2019; Van Stel et al, 2021; and Wahid, 2022).

6.2.3 The effect of Resources Competences Area on Agricultural Performance.

The results showed that farmers who exhibit high resources competences scored higher on agricultural performance be due to core competences in this cluster such as belief in themselves against all odds, high level of focus, ability to manage limited resources, capacity for financial know how and the ability to foster inspiration to the team.

Farmers should practice self-belief and continuous improvement through evaluation of their strengths and weaknesses. They should stay focussed, patient and resilient against adversity and challenges. Farmers must make the most of scarce resources and continue to acquire skills they are deficient in so as to manage their competences. There is need for farmers to acquire financial skills so as to improve the capacity to measure and assess the cost of financial decisions. Farmers need to be able to 'sell' their ideas to external stakeholders so as to get resources support. To achieve this they must develop communication and negotiation skills to entice and inspire stakeholders to grant them support.

The results are corroborated and confirmed by empirical evidence from other studies that show that there is a significant effect of resources competences and their sub competences or specific indicators on business performance (Fauzi et al, 2018; Fonger, 2017;Hidaya et al, 2013; Machmud and Sidharta, 2016; Maluda and Alias, 2022; Mamum and Ali Fazali, 2018; Msuga et al, 2008; Mujuru, 2014; Ng'aru, 2019; Riana, 2015; Tindika, 2019; Ul Haq and Iqbal, 2022); Usama and Yusoff, 2019; .

6.2.4 The effect of Into Action Competences Area on Agricultural Performance.

Farmers who exhibited a higher score of into action competences showed an improved farm performance. This is due to inherent competences in this cluster such as the drive to take on initiatives, organisational skills, team work and continuous improvement due to learning from past experiences.

Farmers must be self-starters and goal getters by initiating projects independently consistently. There is need for sound planning with set goals and objective so that they remain focussed. The said plans and objectives must be adaptable to a changing environment yet maintain the goal. Farmers should be decisive in their activities and have structures or support staff to reduce risk of being overwhelmed or of failure. Teamwork must be emphasised as a necessity and cooperation with fellow farmers will lead to shared ideas, innovations and strategies which will improve agricultural performance. Farmers should not shy away from learning from experience or failures of themselves or others as there is a huge scope for value creation through learning.

The results are corroborated and confirmed by empirical evidence from other studies that show that there is a significant effect of into action competences and their sub competences or specific indicators on business performance (Amoako and Boateng, 2022; Bergevoet et al, 2004; Eschker et al, 2017; Jamal and Chellakan, 2020; Karel et al, 2013; Prasheenaa and Thavakumar, 2021;Sandada et al, 2014; Staniewski, 2016; Vaskova, 2007;

6.2.5 The impact of the combined effect of entrepreneurial competence areas on Agricultural Performance.

The results showed that the three classes of entrepreneurial competences significantly predicted improved agricultural performance. This means that a combination of all the entrepreneurial competences working in synergy and intersecting and overlapping at some points would contribute to an improvement in agricultural performance.

The results are corroborated and confirmed by empirical evidence from other studies that show that there is a predictive effect of the combined entrepreneurial competences and their sub competences or specific indicators on business performance (Abaho et al, 2016; Kamuri, 2023; Jamal and Chellakan, 2020; Muniraju, 2020; Pranowo et al, 2020; Sakib et al, 2022; Sumawidjaja et al, 2019;

6.2.6 The direct or indirect effect of entrepreneurial competence areas on Agricultural Performance.

The model suggested that the data fit showing that the relationship was significantly adequate. This implies that in an ideal set up, when all variables are combined in synergy they act transversal to any farm class and any unit increase in each of the variables will result in a matching increase in the predictive capability of entrepreneurial competences towards improving agricultural performance.

The results illustrate that to improve agricultural performance in the Zimbabwean farming context this can be achieved through increasing entrepreneurial competences on farmers. This can be achieved through intensive training.

6.3 RECOMMENDATIONS

This study is unique due to its thrust to establish through modeling entrepreneurial competence areas as a strategy to improve agricultural performance in Zimbabwe. The study findings raise pertinent issues on improvement of agricultural performance in Zimbabwe. The Government of Zimbabwe must increase the capacity of entrepreneurial competences among farmers so as to improve production and therefore agricultural performance. In this light, firstly the study recommends that the Government of Zimbabwe enacts and implements an ‘agro-entrepreneurial framework’ which will entail the training of farmers in entrepreneurial competences nationwide. On enacting of this recommended framework, the Government of Zimbabwe can commence the program through ‘training the trainers’ first before rolling out the program nationally. This can be achieved through broadening the scope of the existing departments such as the Extension services under the Ministry of Agriculture, lands and Rural Resettlement. This concept of training the extension officers first was also recommended by Agyei and Stringer (2021) in their works. The Government of Zimbabwe can adopt the encouragement and training in entrepreneurial competences as a strategy for poverty reduction and increased framer incomes. This can be accompanied by provision of funding at nominal interest rates to encourage farming. The envisioned agricultural performance has the ability to improve the country’s economy. Since

some entrepreneurial competences are cognitive, lack of formal training programmes can be a barrier to attaining an improved agricultural performance. The other entrepreneurial competences can be acquired through personal experiences and can be inherent or inborn to some individuals but training will need to be instilled as recommended by other researchers.

The researcher highlights the importance for policy planners and stakeholders such as contractors to explore and pay attention to the demographic profiles and entrepreneurial competences of farmers who are beneficiaries of government or private schemes. Farmers can also utilise the findings of this study to enhance their chances of an improved agricultural performance.

Though politically sensitive, secondly, the Government of Zimbabwe can wean off farmers from current input schemes such as the Presidential Input Scheme so as to foster a culture of a business approach to farming. The subsidies and inputs traditionally being doled out annually can gradually be eased off so as to reduce shocks on the vulnerable and to screen off undeserving beneficiaries. Alternatively the Presidential Inputs Scheme can be modified to be a loan scheme whereby beneficiaries are expected to pay back for the inputs. This will catalyse the morphing of the scheme to a revolving fund thus reducing the drain on the fiscus. Research by Muponda, (2012), recommended that the Government of Zimbabwe should desist from subsidizing funds to micro-enterprises and opt for the activation of an enabling environment whereby recurrent market failures are rectified as this will spur the private equity players to come on board. Whilst this research was on light industrial micro-enterprises, the recommendation resonates with the researcher assertion. A business approach which will safeguard against market failures remains an ideal recommendation by the researcher and this will cultivate the development of a performance based approach if inputs are not regarded as freebies.

Thirdly, the Government of Zimbabwe can identify a pool of farmers per province who will be trained in entrepreneurial competences and be supported with adequate capital in specific agricultural activities where their provinces enjoy a competitive advantage over others and be monitored so as to build a business culture to agriculture. In light of this recommendation, the researcher proposes the setting up of a specific program which has been named as JABEZ1000. This entails the recruitment and selection of 1000 farmers per province. These farmers will be selected according to the demographic profiles, exhibition of entrepreneurial competences and must undergo training and development in entrepreneurial competences and be state supported financially in their farming activities. Alluding to the literature review on agro-ecological zones these farmers will be tasked with agricultural production on sectors where they are domiciled and

where they have a competitive advantage. They will be under the direct supervision of a special national vehicle which will have multidisciplinary consultants in their ranks. As a strategic measure, besides the specific agricultural activities they will all be required to cultivate a mandatory hectarage of maize specifically for food security. The researcher believes this recommendation is feasible and manageable considering that the universe for farmers in Zimbabwe is in excess of 1,580,000 and proposed theoretical framework is targeting 8,000 farmers at 1,000 per province. This recommendation does not in any way or manner debase contract farming, command agriculture and other existing programmes, but is complementary towards achieving food security and reigniting the agricultural export potential of Zimbabwe. From this study it is possible to construct an original and unique theoretical framework from the study findings. The researcher contends that this framework is sustainable and as observed by Ritter, (2019), its interdisciplinary and transdisciplinary composition makes it withstand operating shocks.

Proposed Theoretical Framework

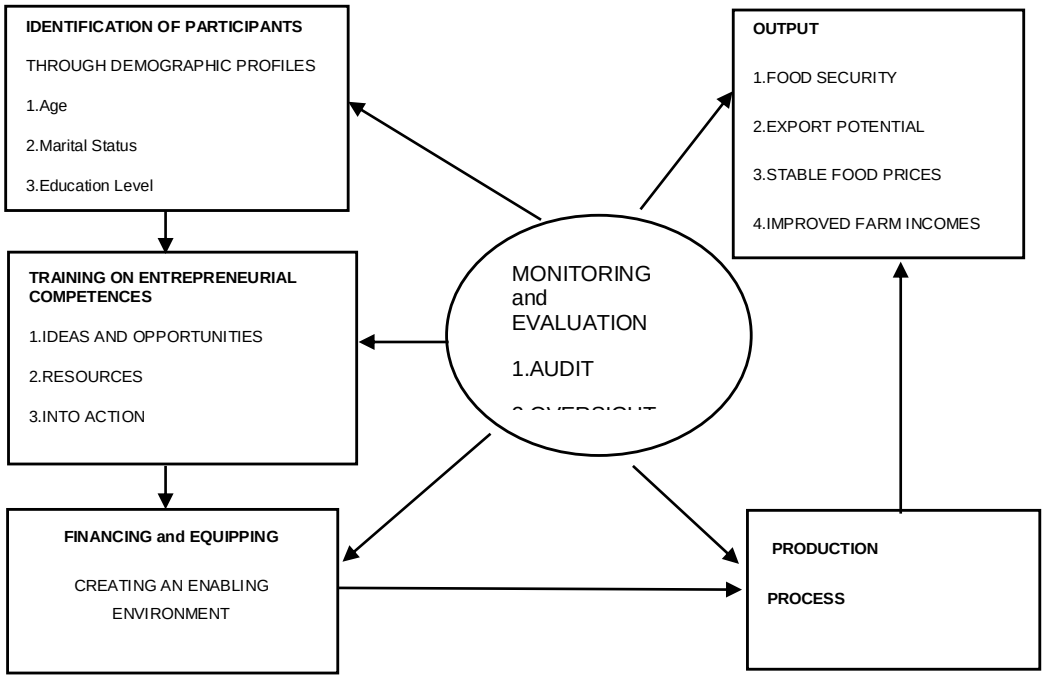


Figure: 5.2 Proposed Theoretical Framework

Source: Author, (2023)

Application of the Proposed Theoretical Framework

Identification of Participants

This will entail the recruitment and selection of farmer participants. The demographic profiles to be considered will be age, marital status and education level attained. This is envisaged to enable the selection of best fit profiles to enable a higher likelihood of replicating empirical data on agricultural performance expected as per the study findings.

Training on Entrepreneurial Competences

From the first stage of selection of participants, they will then undergo training in entrepreneurial competences. The proposed theoretical framework recognises that some entrepreneurial competences are inherent and some are cognitive. However it does not advocate for screening due to the practicability of such an undertaking and proffers training as the ideal certainty on improving participants aptitude to entrepreneurial competences

Financing and Equipping

This stage is critical as it is derived from extensive literature review which shows that there are challenges and impediments that reduce agricultural performance such as financial incapacity and lack of equipment. This framework theorise that participants who are proficient in entrepreneurial competences will perform better if finance and equipment challenges are addressed

Monitoring and Evaluation

Basing on literature reviewed on other interventions to improve agricultural performance, they have exhibited failure due to side marketing, misallocation of resources to divergent interests. Thus this section is important so as to provide oversight roles.

Production and Output

These stages become the dependent outcomes being indicators of agricultural performance. It is envisaged that the aforementioned stages working in synergy will predictably lead to increased production and subsequently to a higher agricultural performance with marked improvement in the attendant indicators such as food security, export potential, food price stability and individual farmer profitability.

Fourthly, the current prevailing Education 5.0 policy can be roped in so that Universities can be players who will train and incubate farmers in their localities on entrepreneurial competences. This can be done through vocational courses and mentoring in entrepreneurial competences.

The Government of Zimbabwe must continue promoting a culture of indoctrinating farmers with entrepreneurial learning and the practice so stimulated will lead to innovation in agriculture and subsequently an improvement in the agro-performance. The industrial hubs existing under education 5.0 (Simuka, 2022) can be adapted to be the commercial hubs for the agricultural business activities.

Fifthly and finally, there is a need to adopt severally already existing recommendations, (Munyanyiwa, Svotwa, Rudhumbu, and Mutsau, 2016; Nani, 2016; Nani and Mpofu, 2016), on the introduction of entrepreneurship teaching in the education curriculum in Zimbabwe. The country already has an agriculture curriculum from primary to secondary school. The education system has adopted practical subjects in the school curriculum from the 1990s. The practical subjects curriculum is based on the premise that graduates will be will be self-sufficient and create their own enterprises post formal education (Nani, 2016). However there is no entrepreneurial teaching and training in the school curriculum. In this regard the researcher recommends that there should be entrepreneurship courses or subjects from early learning and this will foster an entrepreneurial culture. Mwenje, (2018), on studies conducted in Zimbabwe, recommends that Universities should incorporate entrepreneurial curriculum into the degree programs. The researcher concurs with this recommendation and thus reinforces the call for such an action and policy shift to be undertaken. Mujuru, (2014), from studies conducted in Dotito, in the Mashonaland East Province, also recommends a curriculum revamp from primary to tertiary level education so as to foster what they term as ‘a spirit of entrepreneurship’. The researcher concurs with this recommendation.

6.4 IMPLICATIONS ON THEORY

The findings shows that the empirical data from other countries is applicable to Zimbabwe and this contributes to the body of knowledge. This study affirms the EntreComp framework in that the entrepreneurial competences can indeed work in synergy to better farm performance. The study also showed that farmers exhibiting innovation and opportunity ability conform to the Schumpeter Innovation Theory and their high score on Ideas and Opportunity competences versus farm performance.

The study further showed that the self-efficacy theory was confirmed when one looks at the high score of resources competences and farm performance. The self-efficacy theory has an element of innate capabilities and that is a plausible explanation as to why semi-literate farmers who however exhibited resources competences scored highly on farm performance. Also on

resources competences, farmers such as those in the commercial sector who had specialised workforce scored highly on resources competences versus farm performance to lend further credence to the Scientific Management Theory.

Most of the farmers were into mixed farming. They seemed to be able to handle both the livestock and cropping activities. Their farms were mostly household managed thereby reducing the need to hire 'experts' from elsewhere. This is an attribute of Into Action Competences and lends credence to the Jack of All Trades Theory. Also farmers who exhibited a higher demonstration of Into Action Competences, such as networking and teamwork scored highly on farm performance thus further asserting the tenets of the 'O' Ring Theory.

6.5 Limitations and Suggestions for Future Research

The study focusses solely on the Zimbabwean context and thus may not be generalised to other countries.

The majority of the respondents were pioneer beneficiaries of the land reform programme, thus further studies are needed to explore the entrepreneurial competences of successors, heirs and other entrants.

The study looked at entrepreneurial competences as one variable notwithstanding that other variables such as entrepreneurial orientation, leadership and extraneous variables among others. There is also a need to research on extraneous variables such and climate and finance on how they may affect entrepreneurial competences and agricultural performance.

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APPENDIX 1

QUESTIONNAIRE

THE PURPOSE OF THIS STUDY IS TO MODEL ENTREPRENEURIAL COMPETENCE AREAS AS A STRATEGY TO INDUCE BETTER AGRICULTURAL PERFORMANCE IN ZIMBABWE. This study is carried out in partial fulfilment of the requirements of a Doctor Of Philosophy Degree at Chinhoyi University Of Technology. Kindly answer the questions as honest as possible. All information given will be treated with utmost confidentiality.

Section A- Demographic Profile

1. Your Farm classification

i-Communal ❑ ii-Small Holder ❑ iii-Medium Scale ❑ iv-Large Scale ❑

2. Age?_____ Years 3. Your Province_____

4. Marital status?

Never Married ❑ Divorced ❑ Married ❑ Widowed ❑

5. Do you live with your family?

No ❑ Yes ❑

If yes, how many members does your household have? _____

6. How many children do you have? (Give numbers)

No ❑ Girls ❑ Boys ❑

7. How many of your children attend school? _____

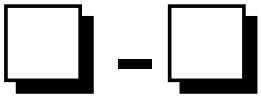
Primary School  Secondary School  College/ University 

8. What is the highest level of education of you and your spouse?

(Tick only one box in each column)

Yourself – Your Spouse

a) No formal education  (b) Grade 1-7 

(c) Form 1-4 

d) Form 5-6  (e) Tertiary 

Section B

Please take note of each of the following items using the scale given below by placing a tick in the column that you consider appropriate.

Description	**Scale**
S-Strongly agree	**1**
A-Agree	**2**
P-Partly agree	**3**
D- Do Not Agree	**4**
SD- Strongly Disagree	**5**

	Ideas and Opportunities Competences	1	2	3	4	5
7	I am able to identify and seize opportunities and to create value in my farming activity					
8	I am able to explore and be innovative in farming approaches					
9	My current activities are based on a vision which has turned my ideas into action					
10	I value my ideas hence I recognize the potential in an idea and make the most out of it					
11	I act responsibly in all my farming activities					
	Resources Competences					
12	I believe I have the ability to achieve my dreams in my farming activity against all odds					
13	I use any resources I have to make my farm activity stay operational					
14	I have financial knowledge to run my farming activity					
15	I am able to manage my work force and to share my vision with them					

	Into Action Competences					
16	I am focused towards sticking to my initiative to achieve goals					
17	I operate my farm activity on sound plans with goals for every season					
18	I admit farming can have uncertainties BUT I am capable to handle any challenges through decisions					
19	I believe in teamwork, networking and collaborations with other farmers					
20	I have benefitted a lot from learning from fellow farmers					
	Climatic Factors					
21	My farming activity is affected by climate factors such drought, frost, heat waves etc.					
22	I have an alternative water supply					
	Finance Issue					
23	Lack of Adequate Finance affects my farm activity					
24	I have sought for external finance in the past 3 years					
25	I have failed to get finance due to lack of collateral					
	Agricultural Performance **(Where the respondent is unsure of the questions on Profitability, please use the questionnaire guide)**					
	Profitability					
26	My farm has performed better financially for the past 3 years					
27	My farm has reached the expected profit in the last season/ year in livestock production					
28	I had an increase in crop sales income					
29	The crop yields this season are higher than the previous on					

30	I surpassed my fellow farmers in profitability					
31	I have always made a profit at my farm for the past 3 years					
	Sales					
32	Sales volumes have increased in the last 3 years					
33	I have an increase in the number of employees in the last 3 years					
34	My farm has experienced an increase in produce output in the last 3 years					
35	My customer base has grown					
	Competitiveness					
36	Other farmers copy from me on activities then compete again me					
37	My farm always comes up with innovativeness then others copy					
38	I am aware of my main rivals / competitors					
39	I gather information on what my fellow farmers are up to then I use it to better my activities					

Questionnaire Guide

Please note that the responses herein are to be used for questions on Profitability

Livestock

i) How many cattle ☐ goats ☐ other ☐ did you have in January 2022?

ii) How many cattle ☐ goats ☐ other ☐ did you buy in 2022?

iii) How many births for cattle ☐ goats ☐ other ☐ were recorded in 2022?

iv) How many cattle ☐ goats ☐ other ☐ were promoted from calves/ kids to weaners in 2022?

v) How many cattle ☐ goats ☐ other ☐ were promoted from weaners in 2022?

vi) How many cattle ☐ goats ☐ other ☐ were promoted breeders in 2022?

vii) How many cattle ☐ goats ☐ other ☐ died (not slaughtered) in 2022?

viii) How many cattle ☐ goats ☐ other ☐ were sold in 2022?

ix) How many cattle ☐ goats ☐ other ☐ went missing in 2022?

Cropping

x) What was the weight or quantity of the crop produce in the 2022 season? maize ☐ vegetables ☐ tobacco ☐ wheat ☐ other ☐

xi) What was the area planted in the 2022 season? maize ☐ vegetables ☐ tobacco ☐ wheat ☐ other ☐

APPENDIX 2

STATISTICS

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
idea_ave	.297	384	.000	.752	384	.000
resources_ave	.301	384	.000	.759	384	.000
action_ave	.299	384	.000	.757	384	.000
climate_ave	.401	384	.000	.673	384	.000
finance_ave	.305	384	.000	.745	384	.000
profitability_ave	.316	384	.000	.767	384	.000
sales_ave	.313	384	.000	.769	384	.000
competitive_ave	.308	384	.000	.760	384	.000
agric_perf_ave	.311	384	.000	.770	384	.000
entr_compet_ave	.285	384	.000	.761	384	.000

a. Lilliefors Significance Correction

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles		
						25th	50th (Median)	75th
profitability_ave	384	3.6476	1.55031	1.00	5.00	3.0000	5.0000	5.0000
1. Your Farm classification	384	2.46	1.182	1	4	1.00	2.00	4.00

Kruskal-Wallis Test

Ranks

	1. Your Farm classification	N	Mean Rank
profitability_ave	Communal	117	185.23
	Small Holder	77	209.03
	Medium Scale	87	190.46
	Large Scale	103	190.13
	Total	384	

Test Statistics[a,b]

	profitability_ave
Chi-Square	2.678
df	3
Asymp. Sig.	.444

a. Kruskal Wallis Test

b. Grouping Variable: 1. Your Farm classification

Descriptive Statistics

	N	Mean	Std. Deviation	Min	Max	Percentiles		
						25th	50th (Median)	75th
profitability_ave	384	3.6476	1.55031	1.00	5.00	3.0000	5.0000	5.0000
3. Province	384	4.50	2.294	1	8	2.25	4.50	6.75

Kruskal-Wallis Test

Ranks

	3. Province	N	Mean Rank
profitability_ave	1	48	164.15
	2	48	160.58
	3	48	178.11
	4	48	115.99
	5	48	239.28
	6	48	253.08
	7	48	215.99
	8	48	212.81
	Total	384	

Test Statistics[a,b]

	profitability_ave
Chi-Square	67.101
Df	7
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: 3. Province

Kruskal-Wallis Test

Ranks

	8a. What is the highest level of education of you and your spouse?-self	N	Mean Rank
profitability_ave	No formal education	1	178.00
	Grade 1-7	7	156.21
	Form 1-4	124	140.75
	Form 5-6	144	202.23
	Tertiary	108	241.42
	Total	384	

Test Statistics[a,b]

	profitability_ave
Chi-Square	58.323
df	4
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: 8a. What is the highest level of education of you and your spouse?-self

```
REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT profitability_ave
```

```
/METHOD=ENTER action_nw action_nw_2

/RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID).
```

Regression

Notes

Output Created		16-AUG-2023 10:03:36
Comments		
Input	Data	C:\Users\USER\Documents\Playground\agriculture_performance_zw\data\data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	384
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT profitability_ave /METHOD=ENTER action_nw action_nw_2 /RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID).
Resources	Processor Time	00:00:00.19
	Elapsed Time	00:00:00.21
	Memory Required	3380 bytes

Additional Memory Required for Residual Plots	648 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
profitability_ave	3.6476	1.55031	384
action_nw	.0000	1.47658	384
action_nw_2	2.1746	2.46779	384

Correlations

		profitability_ave	action_nw	action_nw_2
Pearson Correlation	profitability_ave	1.000	.938	-.625
	action_nw	.938	1.000	-.739
	action_nw_2	-.625	-.739	1.000
Sig (1-tailed)	profitability_ave	.	.000	.000
	action_nw	.000	.	.000
	action_nw_2	.000	.000	.
N	profitability_ave	384	384	384
	action_nw	384	384	384
	action_nw_2	384	384	384

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	action_nw_2, action_nw[b]	.	Enter

a. Dependent Variable: profitability_ave

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.943[a]	.890	.890	.51534	.890	1542.612	2	381	.000	1.714

a. Predictors: (Constant), action_nw_2, action_nw

b. Dependent Variable: profitability_ave

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	819.344	2	409.672	1542.612	.000[b]
	Residual	101.182	381	.266		
	Total	920.527	383			

a. Dependent Variable: profitability_ave

b. Predictors: (Constant), action_nw_2, action_nw

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.444	.043		79.507	.000		
	action_nw	1.100	.026	1.048	41.594	.000	.454	2.201
	action_nw_2	.094	.016	.149	5.907	.000	.454	2.201

a. Dependent Variable: profitability_ave

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	action_nw	action_nw_2
1	1	1.863	1.000	.06	.05	.07
	2	1.000	1.365	.15	.27	.00
	3	.137	3.685	.79	.68	.93

a. Dependent Variable: profitability_ave

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.1014	4.9111	3.6476	1.46263	384
Residual	-2.45397	1.89861	.00000	.51399	384
Std. Predicted Value	-1.741	.864	.000	1.000	384
Std. Residual	-4.762	3.684	.000	.997	384

a. Dependent Variable: profitability_ave

APPENDIX 3

PLAGIARISM REPORT

Similarity Report

PAPER NAME
MODELING ENTREPRENEURIAL COMPE TENCE AREAS AS A STRATEGY TO IND UCE BETTER AGRICULTURAL PERFORM ANCE

AUTHOR
Jabez Moyo

WORD COUNT
77365 Words

CHARACTER COUNT
454569 Characters

PAGE COUNT
254 Pages

FILE SIZE
2.3MB

SUBMISSION DATE
Jun 13, 2024 9:30 PM GMT+2

REPORT DATE
Jun 13, 2024 9:34 PM GMT+2

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- 7% Internet database
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- Crossref Posted Content database
- 8% Submitted Works database

Excluded from Similarity Report

- Bibliographic material
- Quoted material
- Cited material
- Small Matches (Less then 8 words)

Summary

APPENDIX 4

PUBLICATIONS

Publications Under Review

Moyo, J. Muranda, Z. & Chavunduka, D.M. (2024). *The Influence Of Demographic Characteristics Of Farmers On Agricultural Performance In Zimbabwe.* The Journal Of Agricultural Education And Extension **.** Taylor & Francis. ID is RAEE-2024-0198.

Moyo, J. Muranda, Z. & Chavunduka, D.M. (2024). *Modeling Entrepreneurial Competence Areas As A Strategy To Induce Better Agricultural Performance In Zimbabwe..* The Journal Of Agricultural Education And Extension **.** Taylor & Francis. ID is RAEE-2024-0278.