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Modeling Entrepreneurial Competence Areas of Farmers as Predictors of Agricultural Performance.

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Abstract

This paper explores the effect of entrepreneurial competences on Agricultural Performance. It provides a model to address knowledge gaps amid a continued decline in the agro-sector's contribution to Zimbabwe's gross domestic product (GDP). We sampled 384 farmers as the respondents. We analysed the data using Spearman's rank-order correlation to determine the relationship between the variables. The Spearman's rank-order correlation showed that there was a strong, positive correlation ($rs = 0.946$, $p < 0.05$). On the ANOVA (Analysis of Variance) the polynomial model of action significantly affects agricultural performance, $F(2, 381) = 1542.612$, $p < 0.05$ where $F_{critical} \approx 3.02$. The positive beta weights showed that an increase in entrepreneurial competence also increased farmers' agricultural performance. The study recommends that governments implement an 'agro-entrepreneurial framework' which entails the training of farmers in entrepreneurial competences. This paper fills a knowledge gap due to limited research in entrepreneurial competences and agriculture. This then gives significance to theories and frameworks that underpin this study in asserting that entrepreneurial competences can work in synergy to induce better agricultural performance. The theoretical framework derived from this study is of interest to policymakers to help design an effective entrepreneurial farmer training strategy.

Keywords: entrepreneurial competences, agricultural performance, agricultural training, agro-entrepreneurial framework

Introduction and Overview

Agricultural contribution to the Gross Domestic Product (GDP) continues to be in decline, leaving Zimbabwe in a net food-importing status. The reliance on government input support seems to have stifled innovativeness and creativity by downplaying entrepreneurial competency as a necessity, thus resulting in a skill gap. The reliance on input support with an expectancy of high output is oblivious to other factors that this study seeks to explore and provide a model to fill knowledge gaps in this area. Mutambara (2016) notes that free inputs have not been beneficial, and they created an unhealthy dependency syndrome among farmers. There is a high farm failure rate, poor performance and food security remains elusive. The farm failures exacerbate poverty likelihood which is against the expectations of the United Nations Sustainable Development Goals (SDGs) in particular SDG 1 which emphasises the eradication of poverty. This study intends to contribute to the body of knowledge by modeling entrepreneurial competencies as a strategy to induce better agricultural performance in Zimbabwe and to proffer solutions to the government and other stakeholders on improving agricultural performance. Indeed, economic growth through improved agricultural performance resonates with SDG 8 which focuses on decent work and economic growth. The study population comprised farmers of various capacities and capabilities picked at random from the eight provinces of Zimbabwe, excluding the metropolitan provinces of Bulawayo and Harare.

Zimbabwe is a landlocked country in Southern Africa. It covers an area of over 39 million hectares. Of this hectarage, 33.3 million hectares are used for agricultural activities. Thus, agriculture is the largest industry, comprising 75% of the country's employment capacity. Maiyaki (2010) noted that for the Zimbabwean economy, there is a need to revive the industry, although such a task hinges on a strong agricultural base so that agro-allied industries can be established.

The World Bank (2019) noted that the agricultural sector accounted for 8.3 per cent of Zimbabwe's GDP from both subsistence and commercial farmers, from 19.02 per cent in 2008. The value of the GDP share in 2018 for Zimbabwe was 8.3 per cent, against a global average of 10.43 per cent. The maximum ever attained in Zimbabwe was 21.86 per cent in 1967, and the lowest was 6.75 per

cent in 1992. (World Bank, 2019). Currently, the sectorial contribution of Agriculture to the GDP has marginally improved to 9.3 per cent (Zimstat, 2025).

To date, there has been an overall decline in the production of food security crops since the pre-land form era. Maiyaki (2010) notes that the decline from 1996 for maize is due to low production by the commercial farming sector and escalation of input costs. Other researchers have attributed low productivity to a variety of factors, such as insecurity of land tenure, financial issues, and climatic conditions, such as drought. (Chavunduka, Dipura & Vudzijena, 2020). This decline in agricultural output is contrary to the SDG 1 expectations which advocate for no poverty targets in a population and SDG 2 calls for the promotion of policies that promote zero hunger. Resettled farmers are still active on the farms, but land productivity is low. Moyo (2024) points out that this downward trend has continued with particular reference to maize production in Zimbabwe.

However, low productivity is not peculiar to Zimbabwe, as Sheahan and Barret (2017) observe 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 are low compared to those in Asia. This is, although entrepreneurship is key to stimulating rural and agricultural development through the exploitation of business opportunities.

Earlier researchers such as DeTienne and Chandler (2004), view the core of agricultural entrepreneurship as a focus on the identification and pursuit of opportunities, emphasizing the creative, alertness, and networking components of entrepreneurial undertaking. Other studies in Kwara State, Nigeria, show that agricultural entrepreneurship is low and significantly influenced by the socioeconomic characteristics of farmers. (Omotesho, Adesiji, Akanbi, Awoyemi and Ekwemuka, 2019). In concurrence, Ndlovu, Krüger and Meyer (2023) point out that women agricultural entrepreneurs are beset with challenges that impact on their productivity contributing to underachievement. The challenges include low entrepreneurial aptitude, capital constraints and gender discrimination. However, they contend that there is a need for capacity building through training and upskilling.

Thus, Deekor (2019) advocates for policies that include the training of current and prospective farmers in agricultural entrepreneurship. This advocacy hinges on the cognitive approach based

on empirical research, which shows a positive relationship between farm performance and entrepreneurial competences and skills. Deekor (2019), citing De Wolf and Schoorlemmer (2008), noted that production skills are a basic requirement for success in the farming business. SDG 4 emphasises quality education and this study acknowledges the impact of training or educating farmers in entrepreneurial competences so as to improve agricultural performance. There is an emphasis on farmers becoming businesspeople because of various input combinations and the growing complexity of farming as a business. The presence of entrepreneurial competence areas in agriculture is a precursor to the development of a sustainable rural economy. (Esiobu, Onubuogu, and Ibe, 2015). Thus, the influence of entrepreneurial competences in agriculture has the capacity to achieve SDG 11 through capacitating sustainable cities and communities driven by the economic gains from improved agricultural performance.

Objectives of the Study

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.

Theoretical Framework

The research leans on various theories that explicate the role of entrepreneurship as a basis for business performance. The theories illuminate the role of entrepreneurial competence areas through their attendant constructs as catalysts for improved agricultural performance. The ideas and opportunities competence areas relate to the recognition and seizing of opportunities through the adoption of innovation to foster a competitive edge. This resonates with Schumpeter's Innovation Theory (Sledzik, 2015) which postulates that an entrepreneur seizes an opportunity through innovativeness towards economic development. Innovation is also part of SDG 9 on the

cluster of industry, innovation and infrastructure. Thus, this theory is a pillar of the understanding of ideas and opportunities competence areas.

Resource competence areas have specific indicators such as steadfast focus and problem-solving. The Self-efficacy theory, whose proponent is Albert Bandura (1977) gives an understanding on how an entrepreneur's inherent competences and capabilities influence improved performance on confronting situations (Waddington, 2023). The theory resonates with the resource competence areas in that it explicates how the innate abilities have operational value through influencing a cause-and-effect reflection of the confidence needed to focus on achieving a desired outcome. Due to the broad spectrum of resource competence areas, the mobilisation, management and human resources constructs resonate with the Scientific Management Theory whose proponent is Frederick Winslow Taylor. (Mahmood et al, 2012). This theory extrapolates the role of specialisation of tasks in pursuit of improved performance.

Into Action competence areas have underlying competences such as networking and teamwork. The synergic relationship can be explained through the O-Ring Theory postulated by Michael Kremer (1993) though later developed by Oliver Fabel (2004). The theory has an integral value in action competence areas in that it reinforces teamwork impact as it shows that if one individual in the production process falters, the entire production may fail. Thus, this theory underscores the role of the other constructs such as communication, negotiation, teamwork and networking in business performance.

Conceptual Framework

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.

Conceptual Model

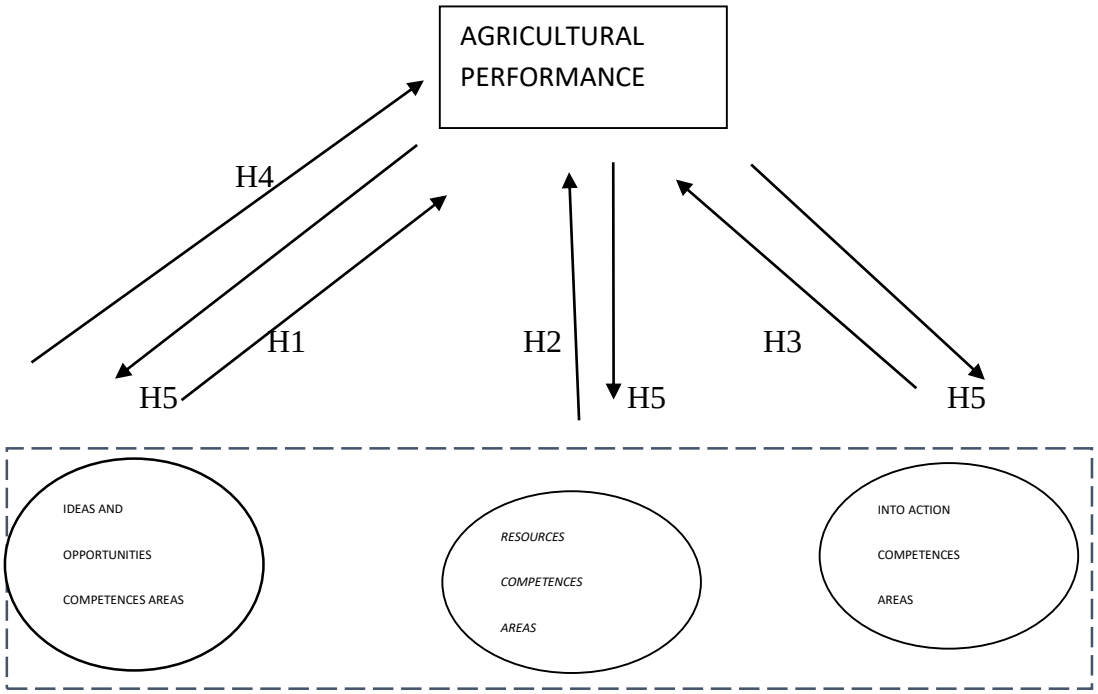

Figure 1 The conceptual model of the study

Source : Author (2023)

The following are the hypotheses derived from the conceptual framework as depicted in Figure 1.

H1 There is a significant effect of Ideas and Opportunities Competences Area on Agricultural Performance.

H2 There is a significant effect of Resources Competences Area on Agricultural Performance.

H3 There is a significant effect of Into Action Competences Area on Agricultural Performance.

H4 There is a significant impact of the combined effect of entrepreneurial competence areas on Agricultural Performance.

H5 There is a direct or indirect effect of entrepreneurial competence areas on Agricultural Performance.

Research Methodology

This study employed a positivist philosophy with an emphasis on knowledge, favourable sensory indications rather than negatives (Alakwe, 2017). In positivism reality is observable and measurable. Causal explanations and predictions are more critical as 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 that shows the cause-and-effect relationship of the entrepreneurial competence areas and agricultural performance.

Setting

The population for this study consisted of small-scale farmers and medium- and large-scale farmers numbering 1,580,000 (Kuhudzayi, 2018) scattered throughout the eight non-metropolitan provinces of Zimbabwe. A true value of 1,500,000 was deemed acceptable at 95% confidence. The study adopted stratified random sampling with a sample size of 384 farmers. Data were collected using, questionnaires with structured questions on a Likert scale. The research instrument was pretested in a pilot study in Matebeleland North Province, involving 48 respondents. The data collection was carried out in the years 2022 to 2023.

This study employed questionnaires as the main instrument to obtain data. The study employed survey research in which numeric descriptions of responses were captured for analysis. This study used a descriptive, exploratory, and explanatory cross-sectional survey. (Asenahabi, 2019). The data were analysed using quantitative methods employing descriptive statistics, inferential statistics, Spearman Correlation Coefficient, Shapiro-Wilk test, Kruskal-Wallis H-test, and regression analysis.

Sample Size Determination

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) work was used to determine the minimum required sample size.

It is given by

$$n = \frac{N}{1+Ne^2}$$

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 $n_o = \frac{z^2pq}{e^2}$

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

Ethical Considerations

Verbal Informed Consent

Respondents gave information truthfully with full consent and were not under any form of duress. 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. Verbal consent was preferred during the administration of the

questionnaire and respondents were advised of the research aims and given an assurance of the maintenance of anonymity. Written consent was not sought for. The respondents gave a verbal informed consent facilitated at the introductory segment of the questionnaire. Thus, a prospective respondent could decline to give consent and therefore not participate in the questionnaire responses.

This approach was chosen due to logistical challenges associated with written consent in rural Zimbabwean farming communities, where literacy levels and access to printing facilities are variable. Verbal consent was ethically justified as the study posed minimal risk, and participants were explicitly informed of their right to withdraw at any stage. Consent was recorded by researchers via annotated checkboxes on the questionnaire, confirming participation approval.

Ethics Approval and Consent to Participate

When conducting this study, the authors observed the following ethical tenets such as anonymity, beneficence, deception, informed consent and plagiarism. These ethical tenets are consistent with the expectations of the Graduate Studies Directorate at Chinhoyi University of Technology who granted approval for this study. Sawicka-Gutaj, Gruszczyński, Guzik, Mostowska and Walkowiak (2022) attest that these expectations or standards are consistent with the principles outlined in the 1964 Helsinki Declaration and all its attendant amendments on ethical tenets involving human subjects. In this study the research instrument was designed in such a manner that there was no provision for the name and contact details of the respondents. 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 authors avoided extolling the benefits of the research on individual level and adopted a holistic approach. 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. The authors acknowledged all information obtained from other works and shunned plagiarism so as to safeguard the integrity of this study.

Consent for Publication

All the Authors are willing for the publication of this manuscript.

Statement of Approval of The Manuscript

All the Authors attest their approval for this manuscript.

Results and Discussion

Testing of Research Hypothesis 1

H1 There is a significant effect of Ideas and Opportunities Competences on Agricultural Performance.

Table 1: Correlations for ideas and opportunities competences and agricultural performance

			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)

As depicted on Table 1, a Spearman's rank order correlation was run to determine the relationship between idea and opportunity competencies and farmers' agricultural performance, represented by profitability. There was a strong positive correlation between the ability to have idea competency areas and profitability (r_s = 0.946, p =*0.000*<0.05). This means that those with higher idea and opportunity competencies are more likely to come up with innovative ideas that can lead to new products and services, thereby leading to improved agricultural performance.

Studies conducted in Africa by Adeyeye et al. (2019) show a strong positive correlation between opportunity-driven intention and business growth. There was a significant and positive correlation between opportunity-driven entrepreneurship at 0.434, significant at $p<0.01$, and necessity-driven motive at 0.247 at $p<0.05$. These findings are consistent with those of the present study.
This empirical evidence shows a strong confirmation of the findings on testing this hypothesis.

Testing of Research Hypothesis 2

H2 There is a significant effect of Resources Competences on Agricultural Performance.

Table 2: Correlations for Resources Competences and Agricultural Performance

			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)

As alluded to in Table 2, a Spearman's rank order correlation was used to determine the relationship between resource competences and agricultural performance, represented by a proxy of profitability. There was a strong positive correlation between the ability to possess resource competences and profitability ($r_s = 0.947$, $p < 0.05$). Thus, those with higher resource competencies are more likely to exhibit improved agricultural performance. These results confirm earlier findings on the self-efficacy indicator of resource competences by Maluda and Alias (2022), who showed that it had a positive impact on entrepreneurship. This study showed that self-efficacy could be further enhanced through training. Msuga et al. (2008) showed that well-organized

smallholder farmers with management skills have a higher likelihood of increasing 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 asserted that management aptitude and competencies can improve productivity by examining technical efficiency in Indonesia. These results concur with the findings of Mujuru (2014) on studies conducted in Dotito, Mashonaland Central (Zimbabwe), which showed that farmers who exhibited indicators of resource competences and aptitudes, such as management skills, operated their agricultural businesses successfully.

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

Testing of Research Hypothesis 3

H3 There is a significant effect of Into Action Competences on Agricultural Performance.

Table 3: Correlations for Into Action Competences and Agricultural Performance

			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)

As shown in Table 3, a Spearman’s rank order correlation was run to determine the relationship between Into-Action competences and agricultural performance, represented by the proxy of

profitability. There was a strong positive correlation between the ability to possess resource 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. In conformity with these findings, studies by Eschker et al (2017) on rural enterprises in Hispanic countries, showed that those with networking support and marketing exhibited successful business performance.

Sandada et al. (2014) examined strategic planning as an indicator of action competences. Their study showed in the regression results that strategic planning factors had an adjusted R^2 value of 0.47, which implies that the strategic planning factors explained 47 percent of the variance in the business performance of SMEs. The beta coefficients show that strategic planning significantly contributes to business performance. (β =0.27, p<0.05). Karel et al. (2013) showed that the existence of a detailed written strategic plan had a significant positive effect on selected business performance indicators, and this result was confirmed by 80 percent of the studied performance parameters.

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

Testing of the Research Hypothesis 4

H4 There is a significant impact of the combined effect of entrepreneurial competence areas on Agricultural Performance.

Table 4: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df 1	df 2	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)

As expressed in Table 4, the summary table provides the R (0.943) and adjusted R-squared (0.890). Thus, this model is predicting 89 per cent of the variance in performance represented by profitability. The Durbin-Watson value of 1.714 shows a positive autocorrelation in the residuals, meaning that the model does not fit well.

Table 5: 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)

As can be seen from Table 5 depicting the ANOVA table, the polynomial model of action significantly predicts high agricultural performance, F (2, 381) = 1542.612, p <0.05.

Table 6: 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)

Thus the resultant Regression Equation will be:

$Y=\beta 0 + \beta 1X1 + \beta 2X2$

Substituting:

Agricultural Performance=3.444 +1.100action_nw + 0.094action_nw_2

Multiple regression was conducted to determine the best linear combination of idea and opportunity competencies, resources, and action capabilities of the farmers for predicting the profitability of the farms. The models show 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 fit the data. The combination of variables significantly predicted profitability, F (2, 381) = 1542.612, p <0.05, with both variables significantly contributing to the prediction.

From standard F-Tables:

F*critical* (2,381) ≈3.02

At α =0.01, it would be approximately:

F*critical* (2,381) ≈4.66

Therefore since 1542.612 >3.02 the model is statistically significant.

The positive beta weights in Table 6, show that an increase in in-action competencies also increases the profitability of farmers. The model achieved an adjusted R-squared value of 0.89 as shown in Table 4, indicating that the model explains 89 per cent of the variance in agricultural performance. In support of these results, other research by Abaho et al. (2016) shows that entrepreneurial competence and agricultural performance are 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 competence, the business is likely to attain a higher sales volume. The results of the regression analysis showed that entrepreneurial competence has the capacity to predict 30.4per cent of the variance in business performance. (Adjusted r^2=0.304). The implication is that a change in entrepreneurial competence causes a 30.4per cent change in business performance, which may be represented by sales and profits *ceteris paribus.*

The results of this study are further supported by Kamuri (2023), who found that the independent variable (entrepreneurial competence) 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 were interpreted using R^2 values and p -values at $p<0.05$. 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 multiple regression analysis showed that an R^2 value of 0.637 implies that entrepreneurial competences explain 63.7per cent of business performance.

Testing of Research Hypothesis 5

H5 There is a direct or indirect effect of entrepreneurial competence areas on Agricultural Performance.

Table 7: 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)

The diagonally weighted least squares (DWLS) estimator as depicted in Table 7, was used for the analysis. Nonlinear minimization with bounded constraints (NLMINB) method was used for optimization. The model used in the analysis had 103 parameters, on a total of 384 observations. The chi-square statistic was significant $\chi^2 = 647.553,\ \mathrm{df} = 167,\ \mathrm{p} <$

0.001 and this is expected given the sensitivity of χ^2 to sample size. The Satorra-Bentler scaled chi-square for the model χ^2/(df) =647.553/167=3.88, 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. At 3.88, the model demonstrates an acceptable but not excellent fit. 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 percent CI [0.08, 0.094]. However, a p-value less than 0.05 does not significantly support this claim of close fit. A Comparative Fit Index (CFI) value of 1 and a Standardized Root Mean Square Residual (SRMR) of 0.024 threshold values provided evidence that the model was adequate and fitted the data reasonably well.

Table 8: 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)

Table 8 shows the standardized coefficients (factor loadings) for the items on the latent variables (LV). 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 that they are insensitive to non-normality problems.

The Structural Equation Model for The Study (SEM*)*

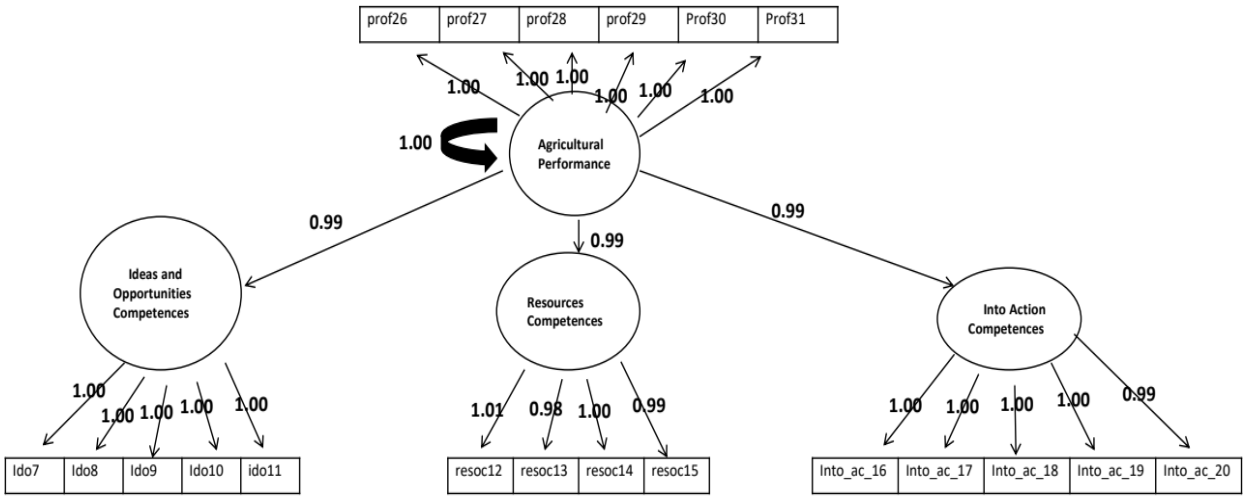

Figure 2 : The Structural Equation Model (SEM)

Source: Author (2023)

The structural equation modeling is able to determine relationships and to suggest a general fit between the observed data and the research model. The fit indices for the structural model were satisfactory. The factor loadings range from 0.98-1 as shown on Figure 2 suggesting that the level of relationship was significantly adequate. This implies that a unit increase in each variable results in a matching increase in the predictive capability of entrepreneurial competences to improve agricultural performance.

Conclusion And Recommendations

The Effect of Ideas and Opportunities Competence Area on Agricultural Performance.

The authors conclude that from the results, farmers who had a high exhibition or possession of idea and opportunity competencies had a higher agricultural performance score. The authors

conclude that these farmers are likely to use their imaginations, identify opportunities, develop creative ideas, work towards a vision, and make the most of the opportunities, thereby improving their agricultural performance.

The authors therefore proffer that the farmers must be able to seize opportunities and create value by utilizing the existing landscape. They should identify their needs and have the ability to mitigate challenges. They should be innovative and creative in their approach to farming, and have the ability to combine knowledge and innovation to achieve satisfactory agricultural performance. They need to be visionary by being able to see into the future (imagination) and transform that vision into ideas, assess its potential, and gravitate towards maximization of the idea. Farmers must embrace ethical approaches and be disciplined to adopt responsible practices.

The conclusion is 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 & Busenitz, 2001; Fong et al., 2018; Mujanah et al., 2021; Munizu & Hamid, 2018; Ng'aru, 2019; Syam et al., 2020; Ramli et al., 2019 & Van Stel et al., 2021).

The Effect of Resources Competences Area on Agricultural Performance.

The authors conclude that from the results, farmers who exhibit high resource competencies scored higher on agricultural performance because of core competencies in this cluster, such as belief in themselves against all odds, a high level of focus, the ability to manage limited resources, capacity for financial knowledge, and the ability to foster inspiration in the team.

The authors proffer that farmers should practice self-belief and continuous improvement by evaluating their strengths and weaknesses. They should stay focused, patient, and resilient against adversity and challenges. Farmers must make the scarce resources and continue to acquire skills that they are deficient in so as to manage their competences. The authors conclude that farmers need to acquire financial skills to improve their capacity to measure and assess the cost of financial decisions. Farmers need to be able to 'sell' their ideas to external stakeholders in order to obtain resources support. To achieve this, they must develop communication and negotiation skills to entice and inspire stakeholders to grant support.

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

The Effect of Into Action Competences Area on Agricultural Performance.

The authors conclude that from the results, farmers who exhibited a higher score on action competencies showed improved farm performance. This is due to inherent competencies in this cluster, such as the drive to take on initiatives, organizational skills, teamwork, and continuous improvement due to learning from past experiences.

Farmers must be self-starters and goal-getters by initiating projects independently. There is a need for sound planning with set goals and objectives, so that they remain focused. The said plans and objectives must be adapted to a changing environment while maintaining the goal. Farmers should be decisive in their activities and have structures or support staff to reduce the risk of being overwhelmed or failing. Teamwork must be emphasized as a necessity, and cooperation with fellow farmers will lead to shared ideas, innovations, and strategies that will improve agricultural performance. Farmers should not shy away from learning from their own 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 a significant effect of action competences and their subcompetences or specific indicators on business performance. ((Amoako & Boateng, 2022; Bergevoet et al., 2004; Eschker et al., 2017; Nasir & Chellakan, 2020; Karel et al., 2013; Ansar, 2028; Sandada et al., 2014; Staniewski, 2016; Vaskova, 2007)

The Impact of The Combined Effect of Entrepreneurial Competence Areas on Agricultural Performance.

The authors conclude that from the results, the three classes of entrepreneurial competence significantly predicted improved agricultural performance. This means that a combination of all

entrepreneurial competences working in synergy, intersection, and overlap at some points would contribute to an improvement in agricultural performance.

The conclusion is corroborated and confirmed by empirical evidence from other studies that show a predictive effect of combined entrepreneurial competences and their sub-competences or specific indicators of business performance. (Abaho et al., 2016; Kamuri, 2023; Nasir & Chellakan, 2020; Pranowo et al., 2020; Sakib et al., 2022; Sumawidjaja et al., 2019)

The Direct or Indirect Effect of Entrepreneurial Competence Areas On Agricultural Performance.

The authors conclude that since the model suggested that the data fit, this then showed that the relationship was adequate. This implies that in an ideal setup, when all variables are combined in synergy, they can act transversally 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 to improve agricultural performance.

The authors conclude that the results illustrate that improving agricultural performance in the Zimbabwean farming context can be achieved by increasing entrepreneurial competence among farmers. This can be achieved by intensive training.

Recommendations

This research highlights the importance of policy planners and stakeholders, such as contractors, to explore and pay attention to the entrepreneurial competences of farmers who are beneficiaries of government or private schemes. The Government of Zimbabwe can wean farmers from current input schemes, such as the Presidential Input Scheme, to foster a culture of a business approach to farming. The subsidies and inputs traditionally doled out annually can gradually be eased to reduce shocks to the vulnerable and to screen off undeserving beneficiaries. Alternatively, the Presidential Inputs Scheme can be modified to a loan scheme whereby beneficiaries are expected to pay back for the inputs. This can catalyse the morphing of the scheme into 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 private equity players to come on board. While this research focused on light industrial micro-enterprises,

the recommendation resonates with the author's assertion. A business approach that safeguards against market failures remains an ideal recommendation by the authors, and this will cultivate the development of a performance-based approach if inputs are not regarded as freebies.

Finally, the Government of Zimbabwe can identify a pool of farmers per province to 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 for agriculture.

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