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ASSESSMENT OF SAVINGS AND INVESTMENT BEHAVIOUR OF LIVESTOCK FARMERS IN EBONYI STATE, NIGERIA

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Abstract
This study assessed the savings and investment behaviour of livestock farmers in Ebonyi State, Nigeria. Primary data were collected from 216 livestock farmers using a structured questionnaire using a multistage sampling technique. Data were analyzed using descriptive and inferential statistics. Results showed that 62% of the respondents were male, with a mean age of 42 years, and 61% married as about 92% had formal education. The average household size was five persons, with a mean farming experience of 8 years. The mean annual farm income was ₦450,000. About 52.7% engaged in non-farm activities alongside livestock farming. Income was mainly derived from farming (55.1%) and livestock sales (36.1%). Most farmers (67.1%) belonged to cooperative societies, and 58.8% had access to credit. Poultry farming was the dominant enterprise (95.8%), followed by cattle, goats, and sheep. The result further revealed a positive relationship between livestock enterprises and savings methods at 1% and 5% level of probability ($p<0.01$ and $p<0.05$). A gap of ₦100,000 existed between savings (₦350,000) and investment (₦250,000) when compared. Result of OLS regression indicated that education, profit margin, and access to credit significantly influenced savings at 1%, while income, household size, health status, input cost, and risk factors influenced savings at 5%. Investment decisions were significantly influenced by education, income, diversification, credit access, output, farm size, and farming experience. Based on the finding, the study recommended for government and financial institutions to design flexible and farmer-friendly credit schemes tailored to livestock farmers to help bridge the gap between savings and actual investment, thereby promoting expansion of livestock enterprises.

Keywords: *Savings, Investment, Behaviour, Livestock, Constraints*

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Introduction

Nigeria's agricultural sector provides food for the country's growing population as well as income for millions of farming households. It also plays an important role in the rural economy as it is a source of food, employment opportunity and raw materials for industries. Agriculture is made up of different sub-sectors which include crop production**,** livestock**,** fishery**,** and forestry**.** Livestock sub-sector encompasses the breeding, raising, and management of domesticated animals (cattle, poultry, sheep, goats, pigs, camels, etc.) for meat, milk, eggs, wool, and leather production. This sector plays a vital role in socio-economic growth of a country. This sub-sector therefore is proved to be a boon for sustaining livelihood of the landless and marginal farmers (Harisha, *et al*., 2021).

Savings is normally considered in economics as disposable income minus personal consumption expenditure. It could also be regarded as income that is not consumed immediately for the purchase of goods and services. According to Azhar (2018), savings may be made in kind such as jewelry, land, livestock or dowry. It may also be in the form of currency notes deposited in banks or more often by hoarding. Savings are very imperative for supporting and developing rural industries. Directly, saving can be used for investment while indirectly, it represents repayment ability, increase credit ratings and as well serve as collateral security in the credit market (Brata, 2013). Savings is both a risk management strategy and determinant of magnitude of investment but its determinants and mobilization strategy are controversial issues in literature (Mkpado & Arene, 2014). Ayanwale & Bamire (2015) claimed that saving by farmers in developing countries is less dependent on the absolute level of aggregate income, but more dependent on other factors such as age, nature of business, household size, wealth, socio-economic and demographic factors.

Ajayi (2011) defined investment as an act of laying out money in return for a future financial reward or the sacrifice of something now for the prospect of later benefits. Again, Olofin (2012) inferred that investment is any form of producer durable that is capable of contributing to the production of goods and services. It can also be seen as spending or expenditure to him would be any form of outlay, either by individuals or corporate units as firms or institutions such as government, for the purchase of such durables. Therefore, investment in their context refers to the purchase of real tangible assets such as machines, factories or stock of goods and services for future use as opposed to present consumption. Investment is a process of exchanging income for assets or converting its forms into productive economic unit base for higher return or higher rate of economic value in future period for the purpose of gaining income. Odoemenem (2018) inferred that small scale farmers invested their savings in two major areas; the agricultural and non-agricultural sectors. Investment in the agricultural sector or farm activity includes the purchase of fertilizer and chemicals, hired labour for farming while non-agricultural sectors are mainly centered on education, trade expansion, buildings, dowry obligation and on procurement of durable assets.

One of the basic problems confronting the development of agricultural sector in Nigeria could be attributed to inadequate savings and investment by the livestock farmers. Agriculture in Nigeria like in most developing countries is predominated by small farm producers and several constraints and barriers which appears insurmountable, limit the overall farming activities. Low saving capacity of farmers is one of the predominant factors responsible for stagnation of agricultural sector in Nigeria. Despite this problem, policy makers have not really drawn up an adequate and comprehensive rural savings scheme that will ginger the farmers to save and invest their capital productively (Odoemenem *et al*., 2013). Available researches on this area of study have concentrated on the determinants and patterns of savings by smallholder farmers. For instance, Ayamolowo *et al*., (2023) examined

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the determinant of saving among Rural Farming Households in Udu Local Government Area, Delta State, Nigeria and found out that low savings in an economy could lead to ineffective mobilization of funds for domestic investment and is the reason for developing countries heavy dependence on external borrowing for developmental and investment projects.

Also, Ogheneruemu *et al*., (2014) who carried out a study on savings determinants among rural households in Southwest Nigeria noted that savings is important in developing a strong rural financial system but its mobilization by peasant farmers for their farming activities have become difficult because of the peculiarities associated with the sector and the conditions of the small-scale farmers. Odoemenem *et al*., (2013) in their study on saving and investment pattern of small farmers in Makurdi Local Government Area of Benue State, Nigeria were of the view that when small scale farmers save, they are able to invest their savings in the agricultural and non-agricultural sectors.
In the same vein, Emmanuel (2015) in his study titled factors affecting household saving of rural agro-based firm workers in the south-south region of Nigeria found that age, education level, household size, farming experience, farm income and non-farm income has direct impact on farmer's capacity to save and invest in the area he studied. However, in spite of these studies on this area, it seems that there are still little or no handy empirical studies on savings and investment behaviour by livestock farmers in Ebonyi State. In view of this, the study described the socio-economic characteristics of the respondents and types of livestock kept by the livestock farmers in the study area; correlated the savings methods and investment areas of the livestock farmers in the area; compared the amount of money saved and invested by the livestock farmers in the area; and determined the factors influencing the savings and investment among livestock farmers in the area.

METHODOLOGY

Study Area

The study was conducted in Ebonyi State. In 1996, the State of Ebonyi was created. The State coordinate is approximately 6°15^{1}N 8°05'E and located in the eastern part or Nigeria. The State shares boundary with Benue State to the North, Enugu State to the West, Abia State to the south and Cross River to the East (EBMOI, 2015). The State capital and largest city is Abakaliki, followed by Afikpo and Onueke. Ebonyi State is divided into three (3) senatorial zones that are *intern dem* with the agricultural zones of the State and they include Ebonyi North comprising of Abakaliki, Ebonyi, Ohaukwu and Izzi L.G.As, Ebonyi central comprising of Ikwo, Ishiclu, Ezza North and Ezza South L.G.As and Ebonyi South comprising of Afikpo North, Afikpo South, Ivo, Ohazara and Onicha L.G.As. Ebonyi State last known population was 2,504,100 (NBS, 2017). If population growth rate would be same as in the period 2006-2011 (+2.84%), Ebonyi population in the period of 2024-2026 is estimated to be 4,339,136 (NBS, 2017).

The vegetation of Ebonyi State is a mixture of savanna and semi-tropical forest with the people of the State predominately farmers and traders. The main crops grown in this area are rice, yam, palm, maize, groundnut, plantain, banana, cassava, melon, vegetables. Livestock such as poultry, pigs, rabbit, cattle etc. are mostly reared in the area. Fishing is carried out mostly in the southern region of the state especially in Afikpo. Lead, limestone, zinc and marble are the major Mineral resources found in the state. The state experiences two main seasons; the rainy season which spans from April to early November and dry season, which starts from late November to early April. There are available large lowland areas popularly called FADAMA which serve as good sites for rice farming and dry season, vegetable farming (Ekpe, Okorie, Ogbodo & Nwite, 2005). There are non-farm activities in the state

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which include petty trading, pottery, blacksmith, weaving, etc. Industries found in the state include the fertilizer blending plant, quarry factories, one of Nigeria's largest poultry farm (Nkaliki Hatchery), one of Nigeria's foremost cement industries (the Nigerian cement company at Nkalagu), Abakaliki rice milling industries and the building materials industry.

Sampling Technique

Multistage sampling procedure was employed in the selection of livestock farmers. Stage 1 involved the purposive selection of two (2) Local Government Areas (LGAs) from each of the three agricultural zones of the State to give a total of 6 LGAs. This was done to ensure that only LGAs with high intensity of livestock farming activities were selected. Based on this, Ikwo and Ezza North LGAs from Ebonyi Central, Ivo and Onicha from Ebonyi South and Ohaukwu and Izzi LGAs from Ebonyi North were selected. Stage II involved the random selection of three (3) communities from the 6 LGAs already chosen to make a total of 18 communities. In stage III, random samplings of three (3) villages were done to select from the 18 communities already chosen to make a total of 54 villages.

In stage IV, four (4) farmers were purposively selected from each of the 54 villages already selected to make a total of 216 respondents used for the study.

Data Collection

Data for this study were collected only from primary source. The data were collected using structured questionnaire and interview schedule.

Analytical Techniques

Both descriptive and inferential statistics were employed to achieve the objectives of the study. Specifically, Descriptive statistics such as frequency counts, tables and percentages, etc. were employed to achieve the objectives (i) and (iii). Objective (ii) was achieved using correlation analysis. Objective (iv) was achieved using Ordinary Least Square (OLS) multiple regression analysis.

OLS Multiple Regression Model

The OLS multiple regression models were used to determine the factors influencing the savings and investment behaviour of livestock farmers in the area stated as follows:

$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8)$……Implicit

$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + et$...Explicit

Where;

Savings model

Yi = Savings (Amount of money saved)

b_0 = Constant

b_1-b_{14} = Parameters

X_1 = Age of the farmer (years)

X_2 = Level of Education (years)

X_3 = Income level (Naira)

X_4 = Household size (number of persons living together and feeding from the same pot)

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X_5= Marital Status (married = 1, single = 0)

X_6 = Health status (healthy = 1, unhealthy = 0)

X_7 = Inflationary trends (%)

X_8 = Cost of inputs (Naira)

X_9 = Level of farm diversifications (1= farming, 0 if otherwise)

X_{10} = Farming Experience (Years)

X_{11} = Interest rate (%)

X_{12} = Level of profit margin (%)

X_{13} = Credit access (1= Yes, 0 if otherwise)

X_{14} = Risk and uncertainty (%)

et = error term

Investment model

Y= Investment (amount of money invested)

b_0 = Constant

b_1-b_{13} = Parameters

X_1 = Age (years)

X_2 = Level of Education (years)

X_3 = Income (Naira)

X_4 = Household size (number of persons living together and feeding from the same pot)

X_5= Farm size (hectares)

X_6 = Marital Status (married = 1, single = 0)

X_7 = Sex (1 for Male, 0 for Female)

X_8 = farming experience (years)

X_9 = Interest rate (%)

X_{10} = Level of farm diversification (1 for farming, 0 for others)

X_{11} = Inflation rate (%)

X_{12} = Access to credit (1 for yes, 0 for No)

X_{13} = Output (Kg)

et = error term

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Correlation Model

$$r = \frac{\sum(xi-\bar{x})(yi-\bar{y})}{\sqrt{\sum(xi-\bar{x})2\ \sum(yi-\bar{y})2}}$$

where;

r = correlation coefficient

xi = values of the x-variables in a sample

$\bar{x}$ = mean of the values of the x-variables

yi = values of the y-variables in a sample

$\bar{y}$ = mean of the values of the y-variables

Decision rule

If the p-value is less than the significance level (α=0.05), there will be a sufficient evidence to conclude that there is a significant linear relationship between savings methods and investment areas of the livestock farmers.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of the Respondents and Types of Livestock Kept by the farmers

Result of the analysis as presented in Table 1 showed that most (62%) of the livestock farmers were male while only (38%) were female. The higher proportion of male livestock farmers suggests that men are more actively involved in livestock production and related financial decisions such as savings and investment. This may be attributed to better access to productive resources, including land ownership, livestock assets, credit facilities, and extension services, which are traditionally more accessible to men. Men are also more likely to engage in large-scale livestock enterprises that generate higher income, thereby enhancing their capacity to save and reinvest in the business.

Result of age indicated that majority (40.3%) of the farmers were aged 36-45 years, followed by 22.2% of the farmers aged from 25-35 years, 19% aged between 51-65 years while only few (2.3%) of them were above 65 years of age. This is an indication that the farmers in the study area were mostly middle aged and still active. This has implication on agricultural production because of the ability of this segment of the population to effectively withstand the rigours, strain and stress involved in livestock production (Onyenucheya & Ukoha, 2017). Entries on Table 1 showed that more than half of the farmers were married while only few (6.9%) were divorced. The dominance of married respondents suggests that marital status plays an important role in shaping savings and investment among livestock farmers. Married farmers are often more economically stable and motivated to save and invest in livestock enterprises due to family responsibilities, such as household upkeep, children's education, and long-term welfare. These responsibilities may encourage prudent financial planning, leading to higher participation in savings schemes and reinvestment in livestock production. This finding agrees with (Adegboye *et al.*, 2018) who reported male dominance in small scale farming.

More than half (91.7%**)** of the respondents had attained one form of formal education or the other**,** indicating a relatively high level of literacy among farmers in the study area. The high

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level of formal educational qualifications among the farmers (91.7%) suggests that most respondents possess basic literacy, which are essential for effective farm management, record keeping, and informed decision-making related to savings and investment and could further enhance financial inclusion and sustainable investment in the agricultural sector. This finding is in line with the findings of Emmanuel *et al;* (2025) who suggested that the level of education has direct impact on farmer's capacity to save and invest. Result further revealed that majorities (53.7%) of the livestock farmers had household sizes of between 4 to 6 persons, while only smaller proportion (4.2%) had household size ranged from 10-13 members and with a mean household size of 5 persons. The mean household size of five persons suggests a favourable household structure for livestock farming in the study area. This size is likely to enhance efficient labour use while maintaining manageable household consumption levels, thereby supporting better savings and investment among livestock farmers. The result of this finding agrees with the findings of Shitu (2022).

The results on the farming experience showed that a greater percentage (50.5%) had between 6 and 10 years of livestock farming experience**,** while only afew farmers (4.2%) had farming experience ranging from 16 to 20 years**.** The study recorded a mean farming experience of 8 years**,** indicating that most respondents were moderately experienced in livestock production. The mean farming experience of eight years indicates a balanced mix of experience and adaptability among livestock farmers, which is likely to support positive savings and investment by the farmers. This also suggests that the livestock sector in the study area is largely driven by active and economically productive farmers who have acquired sufficient practical knowledge and skills over time. Moderate farming experience is often associated with better management practices, improved decision-making, and greater willingness to save and reinvest income generated from farming activities (Orebiyi, 2020).

The result further revealed that when there was no investment, the mean annual farm income was ₦450,000**,** indicating a moderate-income level among the livestock farmers. The farmer's income distribution suggests that the most of them operate at a small to medium scale, with earnings sufficient to sustain household consumption and allow limited savings and investment. Farmers within the dominant income bracket of (₦400,001–₦500,000) are more likely to reinvest part of their earnings into livestock production, such as purchase of feeds, veterinary services, and expansion of stock size. According to Ellis (2020), income level is a key determinant of rural households' capacity to save and invest, particularly in agriculture-based livelihoods. Meanwhile, theme an annual income of the livestock farmers when they invest was ₦550,000. This implies that, on average, livestock farmers who save and invest in the study area operate within a moderate-income bracket. This finding suggests that livestock farming in the study area provides a reasonable but not exceptionally high level of income. The findings also mean that income level plays a significant role in determining farmers' capacity to save and reinvest in their enterprises. This finding corroborates Obasi *et al.,* (2024) who posited that rural households with stable but moderate income are more likely to engage in incremental savings and small-scale investments rather than large capital expansion.

The result further showed that greater proportion (52.7%) of livestock farmers who save and invest combined farming with other non-farming activities, while a slightly lower proportion (47.2%) engaged in full-time farming. This finding suggests that livestock farming in the study area is largely practiced as a part-time or diversified livelihood activity rather than as a sole occupation. This means that by combining livestock farming with non-farm activities such as trading, civil service, or artisanry activities are in better positioned to generate steady

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cash flow, which may enhance their ability to save and invest. Most (55.1%) of the farmers had their source of capital for savings and investment through farming activities**,** followed by livestock sales (36.1%)**,** while off-farm income accounted for only (8.8%)**.** The dominance of farming as a source of capital suggests that crop and livestock production remain the primary means through which farmers generate funds for savings and reinvestment. Income from farming enables farmers to meet household needs and accumulate surplus capital, which can be channeled into savings and investment decisions. This finding aligns with Ellis (2020), who noted that rural households in developing economies largely rely on farm-based activities as their main income source, which directly influences their financial behaviour.

It has been recognized that membership of cooperative society is very strategic in improving the economic wellbeing of the members. On this note, the result showed that majorities **(**67.1%) of the livestock farmers were members of cooperative societies**,** while only **(**32.9%) were not members**.** Cooperative societies often provide members with better access to credit**,** savings platforms, market information, input supply, and extension services**,** which can significantly enhance farmers' savings and investment capacity. According to Birchall (2024), agricultural cooperatives play a crucial role in strengthening farmers' bargaining power and reducing transaction costs, thereby improving income stability.

The result further revealed that majority of the respondents (58.8%) had access to credit**,** while a substantial proportion (41.2%) had little or no access to credit**.** This result indicates that although more than half of the respondents are able to obtain credit, a significant number still face challenges in accessing financial services. Access to credit is critical for agricultural and livestock farmers, as it enhances their capacity to invest in productive inputs, expand scale of operation, and improve savings and investment by the farmers. Farmers with access to credit are better positioned to adopt improved technologies, purchase livestock, and manage production risks, which ultimately improves income generation and capital accumulation (Binswanger & Khandker, 2021).

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Table 1: Distribution of the Respondents based on their Socio-economic Characteristics

Variables	Categories	Frequency (N=216)	Percentage (100)	Mean ($\bar{X}$)
Sex	Male	134	62.0	
	Female	82	38.0	
Age	25-35	48	22.2	
	36-45	87	40.3	42
	46-55	35	16.2	
	51-65	41	19.0	
	Above 65	5	2.3	
Marital Status	Single	46	21.3	
	Married	132	61.1	
	Divorced	15	6.9	
	Widowed	23	10.6	
Educational Qualification	No formal education	18	8.3	
	FSLC	24	11.1	
	SSCE	74	34.3	
	OND/NCE	43	19.9	
	HND/Bachelor degree	57	26.4	
Household Size	1-3	34	15.7	
	4-6	116	53.7	5
	7-9	57	26.4	
	10-13	9	4.2	
Farming Experience	1-5	57	26.4	
	6-10	109	50.5	8
	11-15	41	19.0	
	16-20	9	4.2	
Annual farm income	100,000-200,000	24	11.1	
	200,001-300,000	37	17.1	
	300,001-400,000	51	23.6	
	400,001-500,000	83	38.4	450,000
	500,001-600,000	11	5.0	
	≥600,000	10	4.8	
Primary Occupation	Fulltime livestock Farming	102	47.2	
	Farming/trading	74	34.3	
	Farming/Artisans	21	9.7	
	Farming/public service	19	8.8	
Source of Capital	Farm income	119	55.1	
	Off-farm income	19	8.8	
	Livestock sales	78	36.1	
Membership of Cooperative	Yes	145	67.1	
	No	71	32.9	
Access to Credit	Yes	127	58.8	
	No	89	41.2	

Source: Field survey, 2025

Types of Livestock Kept

Table 2 presents the results of the types of livestock kept. The result showed that poultry which accounted for 95.8% of the farmers were the major livestock kept. However, the livestock farmers engaged in the rearing of different animal species, either as sole enterprises or in mixed livestock systems. Poultry was the most commonly kept livestock, with (95.8%) of the respondents involved in its production. This may be attributed to the relatively low start-up capital, short production cycle, and quick returns associated with poultry farming. Small ruminants, particularly goats and sheep, were also widely kept. This could be because these animals are well adapted to local environmental conditions and are commonly used as a source of income and household security. The results further reveal that cattle were kept by (84.3%) of the farmers. Cattle production was less common compared to poultry and small ruminants, likely due to higher capital requirements, land constraints, and management

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challenges. A smaller proportion of respondents engaged in the rearing of pigs (62%), while other livestock species such as rabbits, pigeon and donkey were less reared by the farmers. The presence of mixed livestock systems suggests diversification strategies aimed at spreading production and income risks by the livestock farmers.

Table 2: Types of Livestock Kept in the Area

Livestock kept	Frequency (216)	Percentage
Poultry	207	95.8
Cattle	182	84.3
Sheep	200	92.6
Goats	198	91.7
Pigs	134	62.0
Pigeon	55	25.5
Horses	76	35.2
Turkey	98	45.4
Rabbits	56	25.9
Donkey	62	28.7
Ducks	98	45.4
Grass cutter	95	44.0

Source: Field survey, 2025. ***Multiple response recorded**

Correlation between Savings Methods and Investment of the Livestock Farmers

This section showed the relationship between savings methods and investment areas. From the Pearson's correlation analysis poultry production (X_1) had correlation coefficient (r) of 0.101, cattle production (X_2) had a coefficient of 0.106, pig production (X_3) 0.131, sheep production (X_4) 0.157 and rabbitry (X_7) 0.376 and showed a positive sign indicating a significant association with savings methods at 0.01, 0.05 and 0.10 per cent level of probability while other variables including; Goat production X_5 (-0.112), purchase of farm inputs X_6 (-0.140), purchase of improved livestock varieties X_8 (-0.183) and horse production X_9 (-0.280) were negatively signed and did not show any significant relation with the farmer's savings method used. The coefficient of poultry production (X_1) was $r = 0.101$, indicating a weak positive relationship between savings methods and investment in poultry production. This suggests that although savings may encourage investment in poultry, the influence was minimal. Poultry production is often characterized by relatively low capital requirements and quick turnover, which may reduce farmers' reliance on structured savings before investing (Adeleke *et al.,* 2020). Similarly, a moderate positive correlation was observed for rabbitry (X_7) with $r = 0.376$. This suggests that savings methods significantly influence investment in rabbit production.

Rabbitry is often perceived as an emerging and commercially oriented enterprise, requiring planned capital outlay, which aligns closely with deliberate savings behaviour (Adeyemo & Ajiboye, 2020). In contrast, goat production (X_5) exhibited a weak negative correlation ($r = -0.112$). This implies that increased savings do not necessarily translate into higher investment in goat production. Goats are commonly reared using traditional methods and are often financed from household income rather than formal savings (Nwibo & Okorie, 2021). The overall findings of the study suggest that savings methods have a limited but enterprise-specific influence on livestock investment decisions. While savings positively influence emerging and capital-sensitive enterprises such as rabbitry, their effect on traditional livestock enterprises remains weak or negative. This underscores the need for complementary financial instruments such as credit access and cooperative financing to enhance livestock investment among farmers. This finding agrees with the findings of Ojo *et al*., (2018) which

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reported that improved savings capacity marginally enhances farmers' ability to invest in different livestock enterprises.

Similarly, Table 4 presented the result of inter-correlation matrix of the variables involved in correlation analysis. Result showed a very strong positive relationship between poultry and pig production X_1–X_3 (0.911*)**. This means that farmers who engaged in poultry are very likely to also invest in pig production. This may be due to shared management practices, feed systems, or market opportunities. Very strong correlation with sheep production X_1–X_4 (0.919*)** indicates that poultry farmers also diversify into small ruminants. Extremely strong relationship with purchase of farm inputs X_1–X_6 (0.991*)** implies that poultry production is input-intensive (feed, vaccines, equipment), so increased poultry activity strongly drives investment in farm inputs. Strong relationship with purchase of improved livestock varieties X_1–X_8 (0.785) means that poultry farmers are more likely to adopt improved breeds, reflecting commercialization and modernization. Furthermore, moderate positive relationship with sheep production X_2–X_4 (0.587)** exists suggesting that mixed livestock systems exist where cattle and sheep are raised together. Moderate relationship with goat production indicates integration of cattle with goats, typical of pastoral or semi-intensive systems. Moderate association exists with purchase of farm inputsX_2–X_6 (0.543)** implying that cattle farmers also invest in inputs, though less intensively than poultry farmers. Also, moderate link with rabbitry X_2–X_7 (0.513)** reflects diversification even into smaller livestock enterprises. Sheep production moderately correlates with rabbitry X_4–X_7 (0.511)** suggesting that farmers raising sheep may also diversify into small livestock like rabbits.

Table 3: Pearson's correlation on savings methods and investment areas of the livestock farmers

Variable code	Variables name	Coefficient (r)
X_1	Poultry production	0.101***
X_2	Cattle Production	0.106**
X_3	Pig Production	0.131**
X_4	Sheep Production	0.157**
X_5	Goat production	-0.112
X_6	Purchase of farm inputs	-0.140
X_7	Rabbitry	0.376*
X_8	Purchase of improved livestock varieties	-0.183*
X_9	Horse production	-0.280**

Source: Field survey, 2025
**** Correlation is significant at 0.05 level**
***** Correlation is significant at 0.01 level**

Table 4: Inter-correlation matrix of the variables involved in the correlation model

Variables	1	2	3	4	5	6	7	8	9
X_1	1.00								
X_2	0.233	1.00							
X_3	0.911	0.412	1.00						
X_4	0.919	0.587	0.491	1.00					
X_5	-0.910	0.512	0.131	0.078	1.00				
X_6	0.991	0.543	0.210	0.109	-0.607	1.00			
X_7	-0.517	0.513	0.331	0.511	0.115	0.321	1.00		
X_8	0.785	0.073	0.205	0.823	0.202	0.432	0.233	1.00	
X_9	-0.880	-0.760	-0.329	-0.432	-0.440	-0.522	-0.806	-0.356	1.00

Source: Field survey, 2025

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X_1 * X_3	=	0.911***
X_1, X_2 * X_4	=	0.919***, 0.587**
X_2 * X_5	=	0.512**
X_1, X_2 * X_6	=	0.991***, 0.543**
X_2, X_4 * X_7	=	0.513**, 0.511**
X_1 * X_8	=	0.785**

Legend:
X_1 = Poultry production
X_2 = Cattle Production
X_3 = Pig Production
X_4 = Sheep Production
X_5 = Goat production
X_6 = Purchase of farm inputs
X_7 = Rabbitry
X_8 = Purchase of improved livestock varieties

Difference in Amount Saved and Invested by the Livestock Farmers

The results as presented in Table 5 revealed that livestock farmers in Ebonyi State earned an average annual farm income of ₦450,000 from livestock activities. Of this amount, the farmers were able to save ₦350,000, while ₦250,000 was re-invested in livestock production and other enterprises. The difference between the amount saved and the amount invested was ₦100,000, indicating that the funds saved were not fully channeled into productive livestock investments. This ₦100,000 gap between savings and investment suggests relatively low investment intensity among the farmers, despite a high rate of savings compared to total income. Although farmers appear to save a significant proportion (78%) of their income while only about 56% of their income was directed back into livestock investments. The underinvestment relative to available savings may reflect constraints such as limited access to investment opportunities, risk aversion, or lack of credit support systems that could enhance productive investment in the livestock sector. This finding is to the findings of Nwibo & Mbam (2013) which reported that out of ₦463,200 earned by farming households, they were able to save ₦238,990.83 while ₦224,209.17 was invested in various investment areas.

Table 5: Distribution of the Respondents according to the amounts saved and invested from livestock farming in the area

Amounts (₦)	**Saved (%)**	**Invested (%)**
100,000-200,000	58(26.9)	75(34.7)
200,001-300,000	74(32.4)	76(35.2)
300,001-400,000	75(34.7)	29(13.4)
400,001-500,000	9(4.2)	19(8.8)
≥ 500,000	4(1.8)	17(7.9)
Mean	**350,000**	**250,000**

Source: field survey, 2025.

Factors Influencing Savings by Livestock Farmers

It has been identified that there are push factors to savings among livestock farmer in Ebonyi State as seen in Table 6. From the result, coefficient of multiple determination(R^2)was 0.786, indicating that approximately 79% of the variation in the savings of livestock farmers was explained by the explanatory variables included in the model. This high explanatory power

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suggests that the model adequately captured the key factors influencing savings decisions among livestock farmers. The goodness of fit of the model, as indicated by an F-ratio of 92.4, further confirms the robustness of the estimated model. The F-statistic indicated that the explanatory variables were jointly significant at the 1%, 5%, and 10% levels, implying that the variables collectively exerted a statistically significant influence on the savings behaviour of the livestock farmers. However, the individual analysis of the factors revealed that the coefficients of level of education (0.254), income level (0.081), household size (0.911), health status (5.603), cost of inputs (0.044), profit margin (0.028), access to credit (0.150), and risk and uncertainty (0.043) were positively signed and statistically significant. This implies that increases in these variables lead to a corresponding increase in the level of savings among livestock farmers.

The positive and significant effect of education suggests that educated farmers are more likely to understand the importance of savings and adopt better financial planning strategies. This corroborates findings by Adegbite *et al*. (2017), who reported that education enhances farmers' financial decision-making capacity. Also, the positive influence of income level on savings posits that higher income increases the capacity to save. Larger household size, though often associated with higher consumption, was found to positively influence savings in this study, possibly due to increased labour contribution to farm activities and income generation, as observed by Obasi *et al*. (2024). The strong positive effect of health status implies that healthier farmers are more productive and earn higher income, thereby improving their ability to save. Access to credit was also found to significantly enhance savings, suggesting that farmers with better access to financial services are able to stabilize their income and allocate part of their earnings to savings. This supports the findings of Nwaru *et al*. (2021), who emphasized the role of rural credit in strengthening farm households' financial resilience.

Likewise, the positive significance of profit margin indicates that higher farm profitability encourages savings accumulation. However, marital status (8.004), although positively signed, was not statistically significant, implying that marital status did not have a meaningful influence on savings in the study area. In contrast, age of farmers (-0.011), inflationary trends (-0.021), level of farm diversification (-0.021), and experience/technical know-how (-0.088) were negatively signed and statistically insignificant. This suggests that these variables did not exert a significant effect on savings. The negative effect of age may indicate that older farmers tend to save less due to increased household responsibilities and health-related expenditures, although the insignificance implies that age differences were not strong enough to influence savings patterns. The negative but insignificant influence of inflation reflects the eroding effect of rising prices on real income and savings, a trend commonly reported in developing economies (Todaro & Smith, 2025). This finding aligns with earlier empirical studies which reported strong joint significance of socio-economic variables in explaining farmers' savings and investment (Oluwasola & Alimi, 2018).

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Table 6: Regression Estimate on the Factors that Influencing savings by livestock farmers

	Unstandardized Coefficients		
Variables	**Coefficient**	**Standard error**	**t-value**
Constant	0.177	0.440	0.402
Age of the farmer (X_1)	-0.011	0.006	-1.799
Level of Education (X_2)	0.254	0.146	1.734***
Income level (X_3)	0.081	0.084	0.965**
Household size (X_4)	0.911	0.132	6.902**
Marital Status (X_5)	8.004	1.209	6.620
Health status (X_6)	5.603	4.112	1.363**
Inflationary trends (X_7)	-0.021	0.015	-1.382
Cost of inputs (X_8)	0.044	0.068	0.638**
Level of farm diversifications (X_9)	-0.021	0.076	-0.282
Experience/technical know-how (X_{10})	-0.088	0.074	-1.201
Interest rate (X_{11})	-1.144	0.128	-1.132
Level of profit margin (X_{12})	0.028	0.122	0.231***
Credit access (X_{13})	0.150	0.040	3.786***
Risk and uncertainty (X_{14})	0.043	0.076	0.564**
R square = 0.786			
Adjusted R^2 = 0.757			
SEE = 53.11			
***** at 1% significant**			
**** at 5% significant**			
*** at 10% significant**			

Source: field survey, 2025

Factors Influencing Investment Behaviour of Livestock Farmers

The propensity of farmer to invest is function of many underlining variables. This section examines those peculiar variables that influence livestock farmers to invest part of their income as can be seen in Table 7. From the analysis, it was noted that the coefficient of multiple determination (R^2) was0.662**,** indicating that approximately 66.2% of the total variation in investment by the livestock farmers was explained by the explanatory variables (β_1–β_{13}) included in the model. The goodness-of-fit of the model were further supported by the relatively low standard error of estimate (0.640)**,** implying minimal dispersion of the observed values from the regression line. The F-statistic was statistically significant at 1%,5%, and 10% levels, confirming the overall significance and reliability of the regression model. The individual analysis of the variables revealed that income level, level of education, farm size, farming experience, access to credit, and output level exerted positive and statistically significant effects on the investment behavior of the livestock farmers. The positive coefficient of income level suggests that farmers with higher income are more capable of committing resources to productive investments. This finding aligns with Adegbite *et al*., (2017) who argued that increased income enhances farmers' investment capacity and risk-bearing ability. Similarly, the positive and significant influence of education indicates that educated farmers are better positioned to access information, evaluate investment opportunities, and adopt improved production practices, thereby enhancing their investment. This finding corroborates Onyenweaku & Okoye, (2017) who identified education as a critical driver of agricultural investment decisions.

Farm size also showed a positive and significant relationship with investment, implying that farmers operating on larger farm holdings tend to invest more due to economies of scale and

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higher expected returns. This result is consistent with the findings of Rahji & Adeoti (2020), who reported that farm size positively influences capital investment in agriculture. Likewise, farming experience exhibited a positive and significant effect, suggesting that experienced farmers are more confident in making investment decisions due to accumulated knowledge and improved managerial skills. Access to credit positively influenced investment by the farmers, highlighting the importance of financial liquidity in facilitating investment in livestock enterprises. Credit availability reduces capital constraints and enables farmers to acquire improved inputs and technologies, thereby enhancing productivity and investment intensity (Ololade & Olagunju, 2023). The positive significance of output level further indicates that higher production outcomes encourage reinvestment, as farmers are motivated to expand or intensify their operations when returns are favourable. Conversely, household size, marital status, and inflation trend exhibited negative coefficients, indicating an inverse relationship with investment by the farmers. The negative influence of household size suggests that larger households may divert farm income towards consumption expenditures rather than productive investment, thereby limiting capital accumulation. This observation agrees with earlier studies which reported that high dependency ratios constrain farmers' investment capacity (Amaza & Maurice, 2015). The negative coefficient of marital status implies that marital responsibilities may increase financial obligations, reducing disposable income available for farm investment. Similarly, the negative and significant effect of inflation trend suggests that rising inflation reduces purchasing power, increases production costs, and discourages long-term investment decisions among livestock farmers. This finding aligns with macroeconomic literature which emphasizes the adverse effect of inflation on agricultural investment and capital formation (Iyoha & Oriakhi, 2022).

Table 7: Regression Estimate on the Factors that Influenced Investment by Livestock Farmers

	Unstandardized Coefficients		
Variables	**Coefficient**	**Standard error**	**t-value**
Constant	5.889	1.067	5.519***
Age (X_1)	0.015	0.018	0.865
Level of Education (X_2)	0.218	0.362	0.602***
Income level (X_3)	0.014	0.224	0.061***
Household size (X_4)	-0.085	0.092	-0.921*
Farm size (X_5)	0.305	0.144	2.110**
Marital Status (X_6)	-1.223	0.951	-1.28
Sex (X_7)	1.160	0.870	1.333
Farming experience (X_8)	0.036	0.046	0.790**
Interest rate (%) (X_9)	2.950	0.911	3.238
Level of farm diversification (X_{10})	1.728	0.712	2.427***
Inflation trend (X_{11})	-1.277	0.802	-1.592
Access to credit (X_{12})	0.102	0.015	0.680***
Output level (X_{13})	1.693	1.239	1.366***
R square = 0.662			
Adjusted R^2 = 0.608			
SEE = 64.03			
***** at 1% significant**			
**** at 5% significant**			
*** at 10% significant**			

Source: Field survey, 2025

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CONCLUSION AND RECOMMENDATIONS

Based on the findings of the study, it could be concluded that savings behavior of livestock farmers was significantly influenced by education, income, access to credit, health status, profit margin, and cost of inputs while factors such as income level, education, farm size, output, farming experience, diversification and credit access were the major determinants of investment behaviour of the livestock farmers.

Based on the findings, the study recommended that;

- Government and financial institutions should design flexible and farmer-friendly credit schemes tailored to livestock farmers. This will help bridge the gap between savings and actual investment, thereby promoting expansion of livestock enterprises.
- Policies aimed at increasing farmers' income such as market access, price stabilization, and value chain development should be implemented to boost both savings and investment.

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