

DETERMINANTS OF SHEEP FARM PROFITABILITY: EVIDENCE FROM SMALLHOLDER FARMS IN TEGAL REGENCY, INDONESIA

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Abstract

This study examines the effects of feed cost, farm size, selling price, education level, farming experience, and access to credit on the profitability of sheep farming enterprises in Tegal Regency, Indonesia. A quantitative approach with an associative research design was employed using survey data collected from 40 sheep farmers selected through purposive sampling. Data were analyzed using descriptive statistics, classical assumption tests, and multiple linear regression with IBM SPSS. The findings indicate that all independent variables have positive and statistically significant effects on farm profitability ($p < 0.05$). Feed cost is identified as the most influential determinant ($\beta = 0.841$), followed by selling price, education level, farm size, farming experience, and access to credit. Furthermore, the simultaneous regression analysis confirms that these variables collectively have a significant effect on profitability ($F = 356.970$; $p < 0.001$). The coefficient of determination ($R^2 = 0.685$) indicates that 68.5% of the variation in farm profitability is explained by the proposed model, while the remaining 31.5% is attributable to other factors beyond the scope of this study. These findings suggest that improving sheep farm profitability requires an integrated strategy emphasizing efficient feed management, appropriate business scale, competitive selling prices, human capital development, and improved access to financial resources. The study provides practical implications for farmers, policymakers, and extension agencies in promoting sustainable and competitive smallholder sheep farming.

Keywords: access to credit; farm profitability; farm size; feed cost; sheep farming.

INTRODUCTION

The sheep farming industry plays a strategic role in the agribusiness sector by supplying animal protein while serving as an important source of income for rural households. Beyond its contribution to food security, sheep farming also supports rural economic development through livestock production and marketing activities (Purnama et al., 2025). The increasing demand for sheep meat, driven by population growth and changing dietary preferences toward diversified sources of animal protein, indicates that sheep farming possesses substantial market potential for further development in both rural and peri-urban areas of Indonesia (Apriani & Muhtadi, 2025). Nevertheless, many smallholder farmers have yet to manage their enterprises efficiently, resulting in suboptimal profitability due to limited managerial capabilities and inadequate business planning.

In practice, sheep farmers continue to face numerous managerial challenges, particularly in controlling production costs and optimizing operational efficiency. Financial records are often incomplete, especially for feed costs, labor expenses, and other operational expenditures that constitute the largest components of production costs. In addition, inefficient feed management and weak marketing strategies frequently prevent farmers from obtaining optimal selling prices, leading to unstable profitability that is highly sensitive to fluctuations in production costs and market prices (Saputra et al., 2025; Intyas, 2022). These conditions highlight the need for more systematic and efficient farm management practices to improve the long-term sustainability and competitiveness of sheep farming enterprises. From a global perspective, small ruminant farming has become increasingly important in ensuring food security, particularly in developing countries. According to FAOSTAT (2025), the global sheep population is estimated at approximately 1.3–1.4 billion head, producing around 15–16 million tons of mutton and lamb annually. Global consumption remains particularly strong across Asia, the Middle East, and parts of Europe, where per capita

consumption substantially exceeds the global average. Likewise, the OECD–FAO Agricultural Outlook emphasizes that production efficiency is a critical determinant of farm profitability, highlighting feed costs, production scale, and selling prices as key drivers of economic performance in livestock farming.

Indonesia possesses considerable potential for sheep farming due to abundant natural resources, labor availability, and continuously increasing domestic demand, particularly during religious celebrations such as Eid al-Adha. According to the Ministry of Agriculture (2025), Indonesia's sheep population ranges between 17 and 19 million head, predominantly concentrated on Java Island. However, national productivity remains relatively low because most sheep farms operate on a smallholder scale with fewer than 10–20 animals per household. High feed costs and volatile market prices further constrain farmers' profitability and limit economies of scale.

Central Java represents one of Indonesia's largest sheep-producing regions, with an estimated population of 2.3–2.6 million sheep (Statistics Indonesia, 2024). Within the province, Tegal Regency has emerged as an important production area, accommodating approximately 60,000–90,000 sheep raised primarily by smallholder farmers managing between three and fifteen animals. Despite this substantial livestock population, farm profitability remains relatively low because feed expenses account for approximately 60–70% of total production costs, while selling prices fluctuate considerably depending on seasonality and market conditions (Rusdiana, 2023; Saputra et al., 2026). These circumstances create significant variability in farmers' income and business performance.

Besides economic factors such as feed costs, production scale, and selling prices, farmer characteristics also influence business performance. Educational attainment affects farmers' ability to adopt modern production technologies, maintain financial records, and make rational managerial decisions. Farming experience enhances farmers' capacity to cope with production risks, disease outbreaks, and feed shortages, while access to credit enables investment in improved feed, technology adoption, and business expansion (Hartono et al., 2021; Nugroho & Widiati, 2022; Wahyuni & Prasetyo, 2023). Consequently, farm profitability depends not only on production efficiency but also on human capital and financial accessibility.

Previous empirical studies have demonstrated that feed costs, business scale, and selling prices significantly influence livestock profitability. However, inconsistent findings remain. Jelita (2023) reported that larger production scales improve profitability through economies of scale, whereas Haloho (2021) found that feed costs do not necessarily reduce profitability when feed resources are managed efficiently. Similarly, Mulyadi and Sari (2022) argued that expanding production scale alone does not guarantee higher profits without effective managerial practices. Moreover, limited attention has been given to the combined influence of farmers' education, farming experience, and access to credit on sheep farming profitability, particularly within the context of smallholder production systems.

Based on these inconsistencies, a clear research gap remains. Most previous studies have examined only a limited number of variables and have rarely integrated production-related and farmer-related determinants into a comprehensive analytical framework. Furthermore, empirical evidence focusing specifically on sheep farming in Tegal Regency remains scarce. Therefore, this study contributes to the literature by simultaneously examining the effects of feed costs, farm size, selling prices, educational level, farming experience, and access to credit on the profitability and business feasibility of sheep farming. This integrated approach represents the primary novelty of the study and provides a more comprehensive understanding of the economic and managerial factors influencing sheep farming performance.

The findings are expected to contribute theoretically by extending the literature on livestock business management through a multidimensional analysis of profitability determinants. From a practical perspective, the results will provide evidence-based recommendations for farmers, policymakers, and agricultural extension agencies to formulate strategies aimed at improving production efficiency, enhancing profitability, and strengthening the long-term sustainability of smallholder sheep farming in Indonesia.

METHOD

This study employed a quantitative approach with an associative research design to examine the effects of feed costs, farm size, selling price, education level, farming experience, and access to credit on the profitability of sheep farming enterprises in Tegal Regency, Indonesia. A survey method was adopted to collect primary data through structured questionnaires administered to sheep farmers. The target population comprised all sheep farmers operating in Tegal Regency, while respondents were selected using a purposive sampling technique. The inclusion criteria required participants to be actively engaged in sheep farming and to conduct livestock production and marketing activities on a regular basis. A total of 30–60 farmers participated in the study. In addition to primary data, secondary

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data were obtained from books, peer-reviewed journal articles, previous empirical studies, and official publications issued by relevant government institutions to support the analysis.

The independent variables consisted of feed costs (X_1), farm size (X_2), selling price (X_3), education level (X_4), farming experience (X_5), and access to credit (X_6), whereas farm profitability (Y) served as the dependent variable. Data were analyzed using IBM SPSS through descriptive statistics, instrument validity and reliability testing, and classical assumption tests, including normality, heteroscedasticity, and multicollinearity assessments. Subsequently, multiple linear regression analysis was employed to evaluate the effects of the independent variables on farm profitability. Hypotheses were tested using t -tests, F -tests, and the coefficient of determination (R^2) at a 5% significance level to assess both partial and simultaneous effects among the study variables. The study also adhered to established research ethics by obtaining informed consent from all participants, ensuring respondent anonymity and confidentiality, and using the collected data exclusively for academic and research purposes.

RESULTS AND DISCUSSION

Descriptive Statistics

Table 1. Descriptive Statistics of the Study Variables

Variables	N	Minimum	Maximum	Mean	Standard Deviation
Feed Cost	40	4,218,062.00	23,740,364.00	15,050,623.80	6,102,206.19
Farm Size	40	20.00	117.00	63.60	32.31
Selling Price	40	1,799,405.00	2,467,870.00	2,115,767.03	210,765.10
Education Level	40	9.00	16.00	11.45	2.67
Farming Experience	40	1.00	7.00	3.83	2.06
Access to Credit	40	0.00	1.00	0.53	0.51
Farm Profitability	40	34.00	71.47	53.15	9.87
Valid N (listwise)	40				

Source: Processed using IBM SPSS Statistics (2026).

Normality Test

Tabel 2 Normality Test

One-Sample Kolmogorov-Smirnov Test			
			Unstandardized Residual
N			40
Normal Parameters ^{a,b}	Mean		0.0000000
	Std. Deviation		1.21555107
Most Extreme Differences	Absolute		0.107
	Positive		0.107
	Negative		-0.107
Test Statistic			0.107
Asymp. Sig. (2-tailed) ^c			.200 ^d
Monte Carlo Sig. (2-tailed) ^e	Sig.		0.293
	99% Confidence Interval	Lower Bound	0.281
		Upper Bound	0.304

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

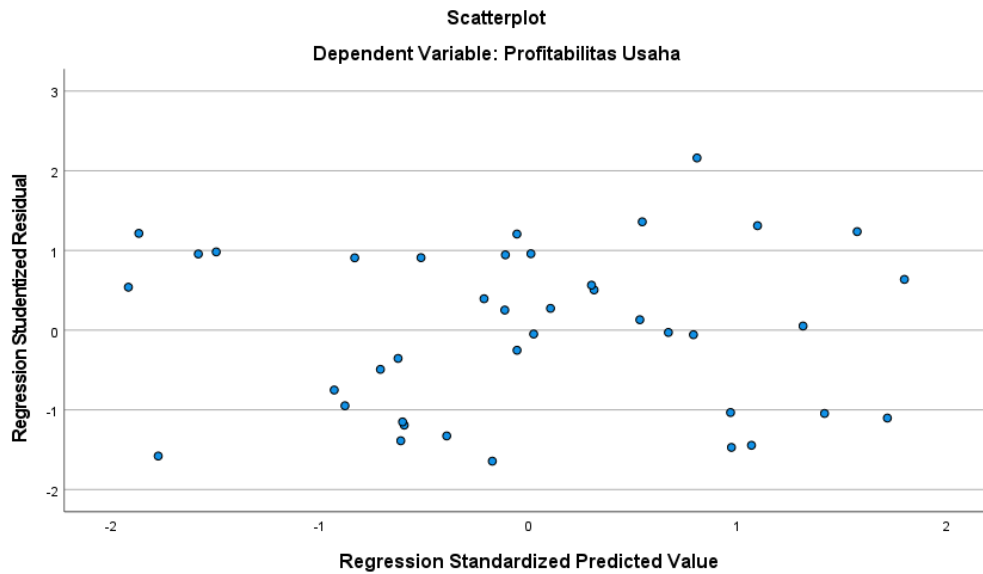
d. This is a lower bound of the true significance.

e. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 2000000.

Source: Processed using IBM SPSS Statistics (2026).

Heteroscedasticity Test

Figure 1. Heteroscedasticity Test



Source: Processed using IBM SPSS Statistics (2026).

Multicollinearity Test

Table 3. Multicollinearity Test

Model	Variables	Collinearity Statistics	
		Tolerance	VIF
1	(Constant)	—	—
	Feed Cost	0.964	1.037
	Farm Size	0.787	1.271
	Selling Price	0.747	1.339
	Education Level	0.955	1.047
	Farming Experience	0.941	1.063
	Access to Credit	0.928	1.078

Dependent Variable: *Farm Profitability*

Source: Processed using IBM SPSS Statistics (2026).

Multiple Linear Regression Analysis

Table 4. Multiple Linear Regression Analysis

Model	Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-21.925	2.979	—	-7.359	0.000
	Feed Cost	1.360E-06	0.000	0.841	38.528	0.000
	Farm Size	0.057	0.007	0.186	7.711	0.000
	Selling Price	1.621E-05	0.000	0.346	13.950	0.000
	Education Level	1.116	0.081	0.302	13.765	0.000
	Farming Experience	0.703	0.106	0.147	6.640	0.000
	Access to Credit	2.328	0.434	0.119	5.360	0.000

Dependent Variable: *Farm Profitability*

Source: Processed using IBM SPSS Statistics (2026).

$$Y = -21.925 + 0.000001360X_1 + 0.057X_2 + 0.00001621X_3 + 1.116X_4 + 0.703X_5 + 2.328X_6$$

The regression equation indicates that the intercept is -21.925 , representing the baseline level of farm profitability when all independent variables are assumed to be zero. The regression coefficients for feed cost (X_1), farm size (X_2), selling price (X_3), education level (X_4), farming experience (X_5), and access to credit (X_6) are all

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positive, indicating positive relationships with farm profitability. Specifically, a one-unit increase in feed cost, farm size, selling price, education level, farming experience, and access to credit is associated with increases of 0.000001360, 0.057, 0.00001621, 1.116, 0.703, and 2.328 units in farm profitability, respectively, assuming that all other variables remain constant.

Furthermore, all independent variables were found to have statistically significant effects on farm profitability, as evidenced by p-values below 0.05. Feed cost, farm size, selling price, education level, farming experience, and access to credit each yielded significance values of 0.000, indicating strong statistical support for their respective effects. Based on the standardized regression coefficients (β), feed cost ($\beta = 0.841$) exerted the strongest influence on farm profitability, followed by selling price ($\beta = 0.346$), education level ($\beta = 0.302$), farm size ($\beta = 0.186$), farming experience ($\beta = 0.147$), and access to credit ($\beta = 0.119$). These findings suggest that feed cost is the most influential determinant of sheep farm profitability among the variables included in the regression model.

Partial Significance Test (*t*-Test)

Table 5. Partial Significance (*t*) Test

Model	Variables	Unstandardized Coefficients		Standardized Coefficients	t	p-value
		B	Std. Error	Beta		
1	(Constant)	-21.925	2.979	–	-7.359	0.000
	Feed Cost	1.360E-06	0.000	0.841	38.528	0.000
	Farm Size	0.057	0.007	0.186	7.711	0.000
	Selling Price	1.621E-05	0.000	0.346	13.950	0.000
	Education Level	1.116	0.081	0.302	13.765	0.000
	Farming Experience	0.703	0.106	0.147	6.640	0.000
	Access to Credit	2.328	0.434	0.119	5.360	0.000

Dependent Variable: *Farm Profitability*

Source: Processed using IBM SPSS Statistics (2026).

Table 5 presents the results of the partial significance (*t*) tests. All independent variables exhibit p-values below 0.05, indicating that feed cost, farm size, selling price, education level, farming experience, and access to credit each have a positive and statistically significant effect on farm profitability. Among these variables, feed cost demonstrates the strongest influence, with the highest standardized coefficient ($\beta = 0.841$) and *t*-value (38.528), followed by selling price ($\beta = 0.346$), education level ($\beta = 0.302$), farm size ($\beta = 0.186$), farming experience ($\beta = 0.147$), and access to credit ($\beta = 0.119$). These findings indicate that all proposed hypotheses are supported, with feed cost emerging as the most influential determinant of sheep farm profitability in Tegal Regency.

Simultaneous Significance Test (*F*-Test)

Table 6 Simultaneous Significance (*F*) Test

Model	Sum of Squares	df	Mean Square	F	p-value
Regression	3740.076	6	623.346	356.970	0.000
Residual	57.625	33	1.746		
Total	3797.701	39			

Dependent Variable: *Farm Profitability*

Predictors: (Constant), Access to Credit, Farm Size, Education Level, Feed Cost, Farming Experience, and Selling Price.

Source: Processed using IBM SPSS Statistics (2026).

Table 6 presents the results of the simultaneous significance (*F*) test. The regression model produced an *F*-value of 356.970 with a p-value of 0.000, which is below the significance threshold of 0.05. These results indicate that feed cost, farm size, selling price, education level, farming experience, and access to credit jointly have a statistically significant effect on farm profitability. Therefore, the overall regression model is statistically significant and appropriate for explaining variations in the profitability of sheep farming enterprises in Tegal Regency. The findings confirm that the combined effects of the independent variables significantly contribute to farm profitability, thereby supporting the proposed simultaneous hypothesis.

Coefficient of Determination (R^2)

Table 7 Results of the Coefficient of Determination (R^2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin–Watson
1	0.692	0.685	0.682	1.32144	1.881

Predictors: (Constant), Access to Credit, Farm Size, Education Level, Feed Cost, Farming Experience, and Selling Price.

Dependent Variable: *Farm Profitability*

Source: Processed using IBM SPSS Statistics (2026).

Table 7 presents the results of the coefficient of determination (R^2). The model yielded an R Square (R^2) value of 0.685, indicating that 68.5% of the variation in farm profitability can be explained by the independent variables, namely feed cost, farm size, selling price, education level, farming experience, and access to credit. The remaining 31.5% of the variation is attributable to other factors not included in the regression model. The Adjusted R Square value of 0.682 indicates that, after adjusting for the number of predictors and sample size, the model explains 68.2% of the variance in farm profitability. Furthermore, the R value of 0.692 suggests a strong positive relationship between the independent variables and farm profitability. Overall, these results demonstrate that the proposed regression model possesses substantial explanatory power and is appropriate for explaining the determinants of profitability among sheep farming enterprises in Tegal Regency.

Effect of Feed Cost on the Profitability of Sheep Farming Enterprises in Tegal Regency

The hypothesis testing results indicate that feed cost has a positive and statistically significant effect on the profitability of sheep farming enterprises in Tegal Regency ($p < 0.05$), supporting Hypothesis 1 (H1). This finding suggests that effective feed cost management is essential for improving farm profitability. Feed represents the largest component of production costs, and its efficient utilization enhances livestock growth, productivity, and market value, whereas inefficient feed expenditure reduces profit margins (Pratama & Murnawan, 2024). These findings are consistent with the financial management perspective of Brigham and Houston (2022), which emphasizes that business profitability depends on efficient production cost management. Likewise, Kariuki and Muriithi (2021) argue that profitability is achieved through the effective management of both revenues and production costs. Therefore, improving feed efficiency enables farmers to increase productivity while maintaining cost effectiveness.

The results are also supported by previous studies. Perwitasari (2024) found that feed cost is the most influential determinant of sheep farmers' income, while Demirhan (2019) identified feed efficiency as a key driver of profitability in small-ruminant production systems. Both studies indicate that efficient feed management substantially improves farm performance and profitability. From a practical perspective, sheep farmers should prioritize efficient feed management by optimizing feed formulation, utilizing locally available feed resources, and minimizing feed wastage. In addition, extension services should strengthen farmers' technical capacity through training on feed management and nutrition. Overall, these findings confirm that efficient feed cost management is a strategic factor for enhancing the profitability, competitiveness, and sustainability of sheep farming enterprises in Tegal Regency.

Effect of Selling Price on the Profitability of Sheep Farming Enterprises in Tegal Regency

The results indicate that selling price has a positive and statistically significant effect on the profitability of sheep farming enterprises in Tegal Regency ($p < 0.05$), supporting Hypothesis 3 (H3). Higher selling prices increase farmers' revenue and ultimately improve business profitability, whereas lower prices reduce financial returns. From an economic perspective, selling price is a key determinant of farm income because it directly influences total revenue. When production costs remain relatively constant, higher selling prices lead to greater profits. Therefore, farmers need to improve livestock quality, select appropriate marketing channels, and determine the optimal timing for sales to maximize market value and profitability.

These findings are consistent with the farm management theory of Kay, Edwards, and Duffy (2020), which emphasizes that profitability depends on effective revenue and cost management. Likewise, the Food and Agriculture Organization (FAO, 2023) highlights that improving product quality and market access enhances the competitiveness and profitability of livestock enterprises. The results are further supported by previous studies. Setiawan (2025) reported that selling price significantly improves the profitability of sheep fattening enterprises, while Rusdiana (2023) found that higher selling prices increase farmers' income, particularly when combined with larger production scales. These findings consistently identify selling price as a major determinant of livestock farm profitability.

From a practical perspective, sheep farmers should focus on improving livestock quality through better feeding, health management, and breeding practices while strengthening market access to obtain more competitive prices. Overall, these findings confirm that selling price is a critical factor influencing the profitability and long-term sustainability of sheep farming enterprises in Tegal Regency.

Effect of Education Level on the Profitability of Sheep Farming Enterprises in Tegal Regency

The results indicate that education level has a positive and statistically significant effect on the profitability of sheep farming enterprises in Tegal Regency ($p < 0.05$), supporting Hypothesis 4 (H4). Farmers with higher educational attainment tend to possess better managerial skills, enabling them to allocate production resources more efficiently and improve farm profitability. From a human capital perspective, education enhances farmers' knowledge, decision-making ability, and capacity to adopt new technologies and management practices. These competencies improve production efficiency, financial management, and marketing performance, ultimately leading to higher profitability (Nugroho & Widiati, 2022). These findings are consistent with Human Capital Theory (Becker, 1993), which views education as an investment that improves knowledge, skills, and productivity. Likewise, the Food and Agriculture Organization (FAO, 2023) emphasizes that education and continuous capacity building are essential for improving productivity and the competitiveness of livestock enterprises.

The findings are further supported by previous studies. Jobirov et al. (2022) found that better-educated farmers manage production inputs more efficiently, resulting in higher profitability. Similarly, Erubun (2024) reported that sound financial management, which is closely associated with educational attainment, significantly improves the performance of small-scale livestock enterprises. From a practical perspective, improving farmers' knowledge through extension services, technical training, and capacity-building programs is essential for strengthening managerial competence and technology adoption. Overall, these findings confirm that education is an important determinant of farm profitability, highlighting the need for continued investment in human capital to improve the productivity, competitiveness, and long-term sustainability of sheep farming enterprises in Tegal Regency.

Effect of Farming Experience on the Profitability of Sheep Farming Enterprises in Tegal Regency

The results indicate that farming experience has a positive and statistically significant effect on the profitability of sheep farming enterprises in Tegal Regency ($p < 0.05$), supporting Hypothesis 5 (H5). Farmers with greater experience tend to possess stronger managerial and technical skills, enabling them to improve production efficiency and achieve higher profitability. Farming experience represents an important component of experiential learning, allowing farmers to develop practical knowledge in breeding, feed management, disease control, and marketing decisions (Putra et al., 2024). These competencies improve resource allocation, reduce production risks, and enhance overall farm performance.

These findings are consistent with Human Capital Theory (Becker, 1993), which considers work experience an important form of human capital that enhances productivity and decision-making. Likewise, the Food and Agriculture Organization (FAO, 2023) emphasizes that farmers' technical capacity and practical experience are essential for improving livestock productivity and operational efficiency. The findings are further supported by previous studies. Bao et al. (2022) reported that farming experience significantly improves livestock farm profitability through more efficient resource management. Similarly, Fenger et al. (2023) found that experienced farmers achieve higher productivity and income by utilizing production resources more effectively.

From a practical perspective, strengthening farmers' technical knowledge through extension services, mentoring, and continuous training can accelerate technology adoption and improve managerial capacity, particularly for less experienced farmers. Overall, these findings confirm that farming experience is an important determinant of farm profitability, highlighting the value of experiential learning and continuous capacity development in improving the productivity, competitiveness, and long-term sustainability of sheep farming enterprises in Tegal Regency.

Effect of Access to Credit on the Profitability of Sheep Farming Enterprises in Tegal Regency

The results indicate that access to credit has a positive and statistically significant effect on the profitability of sheep farming enterprises in Tegal Regency ($p < 0.05$), supporting Hypothesis 6 (H6). Farmers with access to external financing are better able to invest in productive resources, resulting in higher productivity and profitability than those relying solely on personal capital.

Access to credit enables farmers to expand herd size, improve housing facilities, purchase quality feed, and meet operational needs, thereby enhancing production efficiency and farm income (Haryanto et al., 2023). However,

effective financial management remains essential to ensure that borrowed funds generate sustainable returns. These findings are consistent with the farm management framework of Kay, Edwards, and Duffy (2020), which identifies capital availability as a key determinant of agricultural business success. Likewise, the Food and Agriculture Organization (FAO, 2023) emphasizes that access to formal financial services promotes technology adoption, productivity growth, and the sustainable development of livestock enterprises.

The findings are further supported by previous studies. Jobirov et al. (2022) found that access to credit significantly improves livestock farm profitability by increasing investment in productive inputs. Similarly, Haryanto et al. (2023) reported that formal credit enhances farm productivity and technical efficiency through greater production capacity and improved resource utilization. From a practical perspective, expanding access to affordable financial services and strengthening farmers' financial literacy are essential for improving business performance. Overall, these findings confirm that access to credit is an important determinant of farm profitability, highlighting the role of financial inclusion in improving the productivity, competitiveness, and long-term sustainability of sheep farming enterprises in Tegal Regency.

Simultaneous Effects of Feed Cost, Farm Size, Selling Price, Education Level, Farming Experience, and Access to Credit on the Profitability of Sheep Farming Enterprises in Tegal Regency

The results of the F-test indicate that feed cost, farm size, selling price, education level, farming experience, and access to credit jointly have a positive and statistically significant effect on farm profitability ($p < 0.05$), supporting Hypothesis 7 (H7). These findings suggest that farm profitability is determined by the combined effects of production efficiency, managerial capability, and financial resources rather than by a single factor. Efficient feed management reduces production costs, larger farm size creates economies of scale, higher selling prices increase revenue, while education and farming experience enhance managerial decision-making. In addition, access to credit enables farmers to invest in productive resources and expand their farming operations (Berhe et al., 2024). Therefore, improving profitability requires the integrated management of production, human capital, and financial resources.

These findings are consistent with Russel (2024), who argues that agricultural profitability depends on the efficient management of production inputs, capital, and managerial capacity. Similarly, Shanmugam (2024) emphasizes that integrating production efficiency, human resource development, financial access, and market participation is essential for improving livestock competitiveness and profitability. The findings are further supported by Wiranata (2024), who reported that production factors, education, farming experience, and access to credit jointly improve livestock business performance. Likewise, Arnold et al. (2024) identified production costs, farm size, and managerial efficiency as the primary determinants of sheep farm profitability. From a practical perspective, improving profitability requires an integrated strategy that combines efficient resource management, capacity building, financial inclusion, and market development. Overall, these findings confirm that the sustainable profitability of sheep farming enterprises depends on the effective integration of production, managerial, and financial factors.

CONCLUSION

This study examined the effects of feed cost, farm size, selling price, education level, farming experience, and access to credit on the profitability of sheep farming enterprises in Tegal Regency. The empirical findings demonstrate that each independent variable exerts a positive and statistically significant influence on farm profitability. Specifically, efficient feed cost management contributes to improved profitability by enhancing production efficiency, while larger farm size enables economies of scale that increase operational performance. Higher selling prices directly increase farm revenue, whereas higher levels of education strengthen farmers' managerial capabilities and improve decision-making processes. Likewise, extensive farming experience enhances farmers' technical competence and resource management, leading to greater production efficiency and profitability. Furthermore, access to credit provides farmers with the financial resources required to expand production capacity, adopt improved technologies, and invest in productivity-enhancing inputs, thereby generating higher economic returns.

The simultaneous regression analysis further confirms that these six variables collectively have a significant effect on the profitability of sheep farming enterprises. The regression model is statistically significant ($F = 356.970$, $p < 0.001$) and explains 68.5% of the variation in farm profitability ($R^2 = 0.685$), indicating substantial explanatory power. The remaining 31.5% of the variation may be attributed to other determinants not incorporated into the present study. Overall, these findings suggest that improving the profitability of sheep farming enterprises requires an integrated management approach that simultaneously addresses production efficiency, business scale, pricing

strategies, human capital development, farming experience, and financial accessibility. Such a comprehensive strategy is expected to enhance the long-term productivity, competitiveness, and sustainability of sheep farming enterprises in Tegal Regency.

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