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**Influence of Entrepreneurial Skill on Commercialization of Livestock Farming in Narok County, Kenya**

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**ABSTRACT**

The Narok County has a very large population that owns large number of livestock but they still remain poor in terms of accessing health services, taking their children to school and access to other basic needs which this study attributes to poor commercialization of their domestic animal farm products for wealth maximization. The aim of this research was to examine the influence of entrepreneurial skill on commercialization of livestock farming in Narok County, Kenya. Descriptive research was adopted based on its reliability and systematic description of a population. The population of the study included households that engage in livestock farming where a sample size of 384 households was obtained. Primary data was collected from the field through structured self-administered questionnaires. Binary logistics regression analysis. Results showed that holding other factors constant, entrepreneurial skill had a positive and significant effect ( $B = 1.14$ ,  $\exp B = 3.128$ ,  $P=0.002$ ). The implication of the result is that entrepreneurial skill has significant effect on commercialization of livestock farming in Narok County, in Kenya. The study concluded that entrepreneurial skills significantly and positively influenced the commercialization of livestock farming in Narok County based on the

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aforementioned outcomes. These attributes include the ability to effectively manage finances for farming activities, develop business plans for farming enterprises, regularly attend training sessions where farmers are taught entrepreneurship, and make sure to cultivate entrepreneurial abilities that allow farmers to effectively manage livestock farming.

**Key Words: Entrepreneurial Skill, Livestock, Commercialization, Narok, Kenya**

## **BACKGROUND OF THE STUDY**

Kenya is among the top five countries in Africa with the largest number of livestock population. The estimated Kenyan animal population is clustered into some 18.8 million cattle (of which 14.3 million is made up of beef cattle with the remaining 4.5 million being cows), 26.7 million goats, 18.9 million sheep, 3.2 million camels, 44.6 million poultry, 1.9 million donkeys and 0.5 million pigs (KNBS, 2020). However, the commercialization of livestock farming remains very low compared to that of crop farming (FAO, 2015; Auma, Omondi, Githinji, Lukuyu & Baltenweck, 2018). From 2015-2018 livestock reported 27%, 30%, 30% and 28% while cash crop was 69%, 70% 71% and 72% (KNBS, 2018; Kenya Markets Trust, 2019). In 2019, the recorded marketed production from livestock farming was Kshs 147.8 billion which was half the recorded marketed production from crop farming which was Kshs 317.8 billion (KNBS, 2020). A report by FAO (2017) shows that agriculture accounts for 26.27% of the GDP of which livestock farming only contributes 2.01% despite the huge potential. Low commercialization of the livestock is widespread throughout the country but severely affect counties such as Narok that most of their households relied on livestock farming as their main source of livelihood. Out of the 7 million total households in Kenya that engaged in the keeping and commercializing of livestock products, 75% are very poor and mostly found in rural communities (FAO, 2017). Despite the numerous benefits from livestock, the pastoral society is challenged with poverty. Livestock enterprises across the Country are privately own including the commercialization of products but poverty is on the increase in the sector (FAO, 2018). In order to achieve Sustainable Development Goal on poverty eradication, enhancing commercialization of livestock farming is one of the strategies that government may adopt to eradicate poverty. Addressing low commercialization will further address the challenges of unemployment because the livestock value chain will create numerous job opportunities. This area has received considerable attention from previous researchers. For instance, Arero (2018; Komen, Kariuki, and Kaitho, 2019; Henriksen and Rota's, 2014). However, there is little attention on the impact of entrepreneurial skills on the commercialization of livestock farming in Kenya. Entrepreneurship is also a critical component for the commercialization and growth of any business venture. Hence there exists both a conceptual gap and a knowledge gap on influence of entrepreneurial skills on the commercialization of livestock farming in Kenya.

## **STATEMENT OF THE PROBLEM**

There exists a continuous trend in low commercialization of livestock products of total agriculture output despite the constant increase in livestock species. From 2015-2018 livestock reported 27%, 30%, 30% and 28% while cash crop was 69%, 70% 71% and 72% (KNBS, 2018; Kenya Markets Trust, 2019). In 2019, the recorded marketed production from livestock farming was Kshs 147.8 billion which was half the recorded marketed production from crop farming which was Kshs 317.8 billion (KNBS, 2020). A report by FAO (2017) shows that agriculture accounts for 26.27% of the GDP of which livestock farming only contributes 2.01% despite the huge potential. Similarly, of the 7 million total households



in Kenya that engaged in the keeping and commercializing of livestock products, 75% are very poor and mostly found in rural communities (FAO, 2017).

Low commercialization of the livestock is widespread throughout the country but severely affect counties such as Narok that most of their households were mostly supported by raising livestock. Out of the 7 million total households in Kenya that engaged in the keeping and commercializing of livestock products, 75% are very poor and mostly found in rural communities (FAO, 2017). Despite the numerous benefits from livestock, the pastoral society is challenged with poverty. Livestock enterprises across the Country are privately own including the commercialization of products but poverty is on the increase in the sector (FAO, 2018).

## **OBJECTIVE OF THE STUDY**

The objective of the study was to establish the influence of entrepreneurial skill on commercialization of livestock farming in Narok County, Kenya.

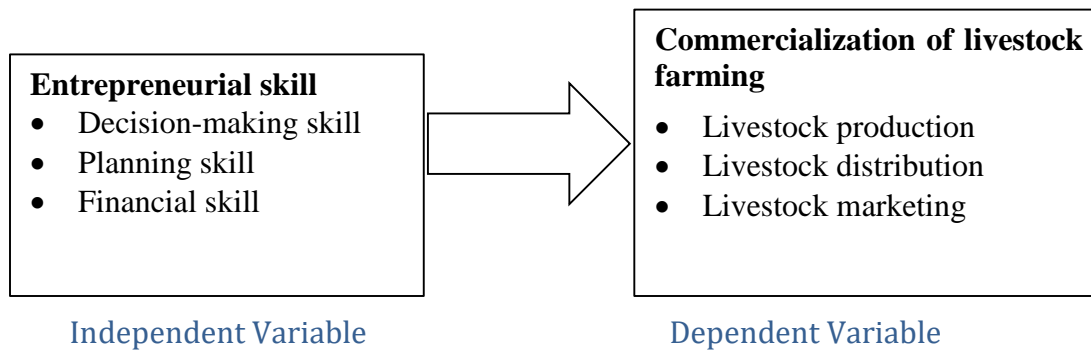
## **THEORETICAL LITERATURE REVIEW**

The study was anchored on Human Capital Entrepreneurship Theory which was proposed by (Becker 1964) and later advanced by Rosen (1989). The theory is an economic approach for understanding human behavior mentioned in management studies. It talks about how human behavior can influence education and training for self-efficacy to curtail poverty (McKernan & Ratcliffe, 2002; Olaniyan & Okemakinde, 2008; Teixeira, 2014; Holden & Biddle, 2017). The theory is a framework for formulating education policy and analyzing the cost and benefit associated with acquiring education. It is useful in understanding the importance of investing in schooling to understand economic variables such as employment, investment, income, loss, and poverty. Entrepreneurial skills contribute to market orientation, which involves understanding and meeting customer needs effectively. Livestock farmers with strong entrepreneurial skills can conduct market research, analyze consumer preferences, and develop marketing strategies that align with market demands. This customer-centric approach enhances the commercialization process by ensuring that farmers produce and market livestock products that are in high demand. Entrepreneurial skills are essential in managing risks associated with livestock farming. Farmers not only need to assess risks, but also mitigate risks such as market fluctuations, disease outbreaks and environmental challenges. Effective risk management practices, facilitated by entrepreneurial skills, minimize potential losses and disruptions, ensuring the continuity and sustainability of livestock farming businesses. This, in turn, supports their commercialization efforts. Entrepreneurial skills help livestock farmers optimize their resources, including financial capital, human capital, and physical assets. Skills in financial management enable farmers to allocate resources efficiently, make informed investment decisions, and manage cash flow effectively. Entrepreneurial skills facilitate networking and collaboration among livestock farmers and with other stakeholders in the industry. Through effective networking, farmers can access valuable information, share knowledge and experiences, and forge partnerships that enhance market access and business opportunities. Collaborations contribute to the commercialization of livestock farming by expanding market reach and establishing mutually beneficial relationships. In summary, human capital entrepreneurship theory recognizes the critical role of entrepreneurial skills in the commercialization of livestock farming. By leveraging entrepreneurial skills, livestock farmers can identify market opportunities, adopt market-oriented approaches, manage risks, optimize resources, innovate, and collaborate effectively. These factors collectively contribute to the growth, profitability, and sustainable development of livestock farming enterprises, ultimately enhancing the commercialization of the sector



## CONCEPTUAL FRAMEWORK

Adom, Hussein and Agyem (2018), said the ground plan of the study is the framework that contains the variables important to the study. It gives a picture of how the variables might relate to each other. It is also the analytical tool used to understand a given phenomenon. The frame is the basis for analyzing the relationship among a set of ideas. The main benefit of the structure is establishing a body of concepts and objectives used in solving new and emerging practical problems.



*Figure 1: Conceptual Framework*

## EMPIRICAL LITERATURE REVIEW

Commercialization refers to the production, distribution, and marketing of domestic farm animals' products to meet both the customers' demands and market needs. It requires the use of entrepreneur strategies to achieve commercial success in marketing the products or services to market. Effective commercialization requires input, output, and market participants (Chandio, et al. 2018; Linderhof, Janssen & Achterbosch, 2019). Spacey (2017) mentions four categories of commercialization: arts, government, business capabilities, and innovation. Artistic works involving music, painting, film, and sculpture can be commercialized as well as government business type's activities and innovation. Business capabilities involve the entrepreneur having the competencies and skills to perform business tasks and achieve success. Livestock production has always been commercially oriented and the smallholder producer has to participate as a partner so as to be included in the value chain. For the past 40 years, industrialized nations have concentrated on producing farm animal products in big units thereby reducing the size of smallholders (FAO, 2018; Linderhof, Janssen & Achterbosch, 2019). Smallholders commercializing of livestock products has been on for a long time and is still in process. It allows moving from producing for household consumption with the option of selling surplus, into market-oriented production for profit. Livestock in Kenya is one of the six subsectors of the agriculture sector. The others are industrial crops, food crops, horticulture, fisheries, and forestry. The sector is rural inhabitants' surviving point in economies of developing nations. It plays an important role in creating employment, income, saving for households through domestic animal farming. In 2019, the animal agriculture sector contributed 32% of the total output of agriculture commodities, about 39% to agriculture GDP, and approximately 7 % to the country's GDP (KALRO, 2021; FAO, 2019). Livestock is classified as a capital asset because it is capable of generating revenue over more than one year. This asset does not only provide three products, namely meat, milk, and eggs for marketing or household consumption. It also produces wool,



manure, fur, and leather. The skins of agricultural animals are very useful. Wool is animal skin used to manufacture materials such as sweaters and coats. Camel, goat, rabbit, and sheep are four of the domesticated animals that produced wool. Manure is the by-products used as fertilizer to feed crops and other plants. Fur is the hair of dogs, cats, foxes, pigs, beaver, and horse for producing coat, hat, and jacket. The hide or skin of sheep, goats, cattle, calves, and lamb can produce leather (PETA, 2020; Gupta, Gupta & Dhamija, 2019; PETA, 2021). Livestock can be small and big. The small category is comprised of poultry animals including beehives, pigs, sheep, goats, and rabbits. The larger animals are camel, cattle, donkey, and horses. Of the 7 million Kenyans holding livestock about 55% are smallholders keeping small animals only, and 45% holding both small and large animals. The advantages of the small animals include higher demand, quick sale for cash, fast breeding, backyard rearing, and the ability to survive in harsher terrain. The poultry animals are less costly, fast sales, and bring the highest return on investment (FAO, 2015; Omondi, 2018). In Kenya, domestic animal farming supports the economy to growth. Products and values in livestock increased in 2019 to KSh 147.9 billion from KSh 146.8 billion in 2018. Sixty percent or 7 million of total households keeping livestock makes Kenya become the third-biggest holder of livestock after Ethiopia and Botswanan in Africa. Within the agriculture sector, 50% or 8 million of the labor force worked with the livestock sector (KNBS 2019; FAO, 2019; KNBS 2020; Kenya Markets Trust, 2019). The pastoral communities controlled 67,334,689 species of animals comprising of cows or cattle, sheep, goats, camels, and pigs. There are 31 million poultry animals, chickens, and other types of birds (FAO, 2017).

## RESEARCH METHODOLOGY

Descriptive pattern of research was adopted based on to its reliability and systematic description of a population. The population of the study included all farmers that practice livestock in Narok County. The study targeted households. Narok County has 150,415 households comprising 721,992 individuals involved in livestock farming. The sample size was determined by use of Cochran's formula, with sample size of 384 households being used. The study adopted mixed sampling design, stratified and random sampling so as to settle on the specific households for inclusion in the study. Primary data was collected from the field through structured self- administered questionnaires. The study adopted drop and pick methodology during data collection. Data analysis was done through both inferential and descriptive statistics using SPSS v24. Inferential statistics that include Pearson correlation and Multivariate binary logistics regression analysis were used to determine the magnitude and nature of the relationships between the variables as well as testing the hypothesized relationships.

## RESEARCH FINDINGS AND DISCUSSION

The study collected data from 384 households involved in livestock farming in Narok County who were the respondents of the study. Findings on the response rate are as presented in table 1.

**Table 1: Response Rate**

Response Rate	Frequency	Percent (%)
Returned Questionnaires	288	0.75
Unreturned Questionnaires	96	0.25
<b>Total</b>	<b>384</b>	<b>100</b>



Out of the 384 (three hundred and eighty-four) respondents who were sampled, 288 (two hundred eighty-eight) responded to the questionnaires. Based on the findings of Mugenda and Mugenda (2003), the response rate achieved was 75%, a level deemed adequate for conducting data analysis and interpreting the results.

## Descriptive Results

The purpose of the study was to determine how entrepreneurial skills influenced commercialization of livestock. As a result, respondents were asked to rate how much they agreed or disagreed with various statements about entrepreneurial skills on a scale from 1 to 5. To analyse the responses, the study used mean and standard deviation. Table 2 presents the findings.

**Table 2: Descriptive Statistics for Entrepreneurial Skills**

Statements	SD	D	N	A	SA	Mean	Std Dev
I have high skills rewarding decisions in my livestock farming	38.5%	50.3%	5.6%	0.0%	5.6%	1.84	0.96
I have skills to develop business plan for my farming business	41.0%	47.9%	5.6%	0.0%	5.6%	1.81	0.97
I effectively manage finances for my farming activities	38.2%	42.4%	8.3%	5.6%	5.6%	1.98	1.09
I frequently attend programs/training where we are taught entrepreneurship	38.2%	45.1%	0.0%	8.3%	8.3%	2.03	1.21
I have entrepreneurial skills that enable me to effectively manage my livestock farming	51.7%	39.9%	5.6%	2.8%	0.0%	1.59	0.72
<b>Aggregate score</b>						<b>1.85</b>	<b>0.99</b>

A mean value of 1.84 was an indication that majority of the respondents disagreed with the statement. Some of the entrepreneurial skills mentioned by the respondent that assisted them to turn their farming operations into profitable business ventures include; Business Planning and Financial Management: Developing a solid business plan was mentioned as crucial for any entrepreneur. Livestock farmers need to have a clear vision for their business, set goals, and outline strategies for achieving profitability. Additionally, understanding financial management principles, such as budgeting, cash flow management, and cost analysis, helped farmers make informed decisions about resource allocation and investment opportunities. The findings of the study supported those of Ndlovu (2019) whose study found that livestock farmers majorly rely on moisture-sensitive coping strategies, and this is an indication that rural farmers are yet to embrace contemporary livestock management practices. The study further supported Abdullah, Hadi and Dana (2018) whose study reported that entrepreneur skills positively contributed to the success of marble manufacturing industry in Pakistan. This implies that entrepreneur skills affect the production, distribution and marketing of goods and services which is commercialization.





## 4.2 Correlation Analysis

The results were supported by a Pearson correlation coefficient of 0.623 and a significance level of 0.000, which is lower than the predetermined significance level of 0.05 used in this study. This finding implies that the improvement of entrepreneurial abilities among households involved in livestock farming in Narok County leads to a significant and positive advancement in the commercialization of livestock farming.

**Table 3: Pearson Correlation Matrix**

		Entrepreneurial Skills (X)	Commercialization of Livestock Farming (Y)
Entrepreneurial Skills (X)	Pearson Correlation	1	
Commercialization of Livestock Farming (Y)	Pearson Correlation	0.623	1
	Sig. (2-tailed)	0.000	
	N	288	288

\* Correlation is significant at the 0.05 level (2-tailed).

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

## 4.3 Binary Logistics Regression Results

The binary logistics regression model coefficient results in Table 4 show that holding other factors constant, entrepreneurial skill has a positive and significant effect on commercialization of livestock farming in Narok County ( $B = 1.14$ ,  $\exp B = 3.128$ ,  $P=0.002$ ). The null hypothesis was therefore rejected. The implication of the result is that entrepreneurial skill has significant effect on commercialization of livestock farming in Narok County, in Kenya. Accordingly, a unit increase in entrepreneurial skill results in an increase in the probability of commercialization of livestock farming in Narok County.

**Table 4: Coefficients for Multivariate Binary Logistics Model**

Coefficients	$\beta$	S.E.	Wald	Sig.	Exp (B)
Entrepreneurial Skills	1.140	0.376	9.175	0.002	3.128
Constant	9.536	2.299	17.2	0.000	0.000

a Variable(s) entered on step 1: b Predictors: (Constant), Entrepreneurial Skills.

Coefficients of binary logistic regression indicated that entrepreneurial skills positively and significantly influenced commercialization of livestock farming in Narok County. This study supported Bercu, *et al* (2020) results that showed that effective models for entrepreneurial education enhances the attitudes and behaviors of entrepreneurship students and this positively impact their social benefit of job-related activities. Additionally, their engagement in business-related pursuits is influenced by what they learn about entrepreneurship in higher education. This suggests that schools that focus on entrepreneurship can affect how products are made and where they are sold. The present study corroborates the findings of Mortonb *et al* (2018), which indicated that individuals from China exhibited a strong belief in their capacity to enhance animal welfare. Moreover, it was observed that veterinarians displayed greater confidence in this regard compared to livestock team leaders. The participants in the study exhibited divergent levels of intentions and confidences



regarding animal welfare. They attributed these attitudes to a range of factors, including workplace behavior, differing organizational priorities, and their own limited understanding of the subject matter. Stalgiene *et al.* (2018) found farmers with higher levels of competence exhibited greater receptiveness to change, displayed a higher degree of optimism regarding their future prospects, managed larger agricultural holdings, and reported higher levels of satisfaction with their household incomes and farm outcomes. According to Chandio *et al.* (2018) livestock entrepreneurs encounter challenges in maintaining an effective financial record-keeping system. A limited number of dairy livestock farmers maintain documentation of their dairy farms, exhibit a deficiency in the adoption of contemporary dairy techniques in livestock management, and encounter challenges in devising effective milk marketing strategies. The region experiences a dearth of veterinary services and encounters limited access to loan facilities provided by banking institutions for the purpose of investment.

## **4.2 Correlation Analysis.**

This suggests that the competencies possessed by entrepreneurs have an impact on the processes of producing, distributing, and marketing goods and services, ultimately leading to their commercialization. The researchers reached the conclusion that resilience skills exerted a significant influence on the development of other entrepreneurial skills. This study provides further support for the findings of Boldureanu *et al.* (2020), which demonstrated that the implementation of effective models for entrepreneurial education has a positive influence on the attitudes and behaviors of students in entrepreneurship programs. Consequently, this leads to a favorable impact on their engagement in job-related activities that contribute to social benefit. Moreover, the engagement of entrepreneurs in business-related endeavors is influenced by their acquisition of knowledge through higher education. Entrepreneurial education has the potential to exert influence over the processes of production and distribution of goods and services. According to Verhees, et al (2018) the findings of their study indicate that dairy farmers in the countries included in the sample exhibit a strong focus on production and tend to prioritize the expansion of dairy production and a greater level of specialization in dairy farming as their preferred farm strategies for the next five years. Farmers who demonstrated a high level of competence exhibited a greater propensity to adopt change, displayed more optimistic outlooks regarding their future, managed larger-scale farms, and derived greater satisfaction from their household income and agricultural outcomes.

## **CONCLUSION**

The study's conclusion is that entrepreneurial skills significantly and positively influenced the commercialization of livestock farming in Narok County based on the aforementioned outcomes. These attributes include the ability to effectively manage finances for farming activities, develop business plans for farming enterprises, regularly attend training sessions where farmers are taught entrepreneurship, and make sure to cultivate entrepreneurial abilities that allow farmers to effectively manage livestock farming.

## **RECOMMENDATIONS**

By creating prerequisite systems and structures that enable entrepreneurial competencies, the study presented a number of recommendations that, if implemented by various stakeholders, would significantly improve the success of commercializing livestock farming address challenges Kenya has been facing in commercialization one its key subsector. The study recommends that ministry of livestock and relevant state department at national government should work closely with county government of Narok in development learning programs for households in livestock farming to equip





them with skills on developing business plan for their farming business, management of finances and other entrepreneurial skills. This will enable them to slowly add value addition of livestock and related product and in the process enhancing commercialization of their livestock farming.

## **AUTHOR'S CONTRIBUTIONS**

Elizabeth S. Lolchoki, authored the article with supervision from Dr. Dorothy Kirimi and Dr. Hellen Mugambi. All ethical research practices were factored and relevant authorization sought during the research process.

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## **CONFLICT OF INTEREST DECLARATION**

The author declares that there exists no conflict of interest concerning this publication. High ethical standards were observed in the course of the whole research.

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