



# **Entrepreneurship Competency Required by Farmers in Harnessing Opportunities in Livestock Feed Industry for Socio-Economic Improvement in North Central Nigeria**

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**Abstract:** *This study is an investigation into entrepreneurship competency required by farmers in harnessing opportunities in livestock feed industry for socio-economic improvement in North Central Nigeria. The study was guided by five research objectives, five related questions and five null hypotheses formulated and tested at 0.05 level of significance. The study adopted a Survey Research Design with a population of 1,302, made up of 76 Lecturers; 767 Agricultural Extension Agents and 459 Livestock Feeds Entrepreneurs. The sample size for the study was 306 respondents resulting from Multistage Sampling Procedure. A structured questionnaire titled: Entrepreneurship Competency Questionnaire in Livestock Feeds' Industry (ECQ-LFI) was used for the study. Using Cronbach Alpha Reliability Method, the reliability coefficient of the questionnaire was determined to be .94. Seven research assistants helped in collecting the research data. The research questions were answered using mean and standard deviation while Analysis of Variance ANOVA was used for test of hypotheses. Findings of the study revealed a total of 53 items required by farmers in harnessing entrepreneurship opportunities across five different occupational areas in livestock feed industry for socio-economic improvement in North Central Nigeria. The study concluded with a package of entrepreneurship competency required by farmers in harnessing opportunities across different occupational areas in livestock feed industry for socio-economic improvement in North Central Nigeria.*

**Keywords:** *Livestock Feed Industry; Farmers; Entrepreneurship Competency; Harnessing Opportunities; Socio-economic Improvement.*

## **1.0 INTRODUCTION**

### **1.1 Background to the Study**

Feed is food for animal especially livestock. Feed for livestock in turn provides food for man and a pathway to socio-economic sustenance of human life. The experiencing feed scarcity in North Central Nigeria with multi-dimensional causes in milieu of abundant feed productive resources is devastating. The people are ignorant, incompetent and structurally unemployed; engages in crises and are economically poor which required entrepreneurship intervention. Acquisition of entrepreneurship competency in harnessing opportunities in different occupational areas in livestock feed industry to quit the devastation of feed scarcity in North

Central Nigeria is sacrosanct. Feed could be any edible material grown or developed for feeding of livestock. According to Holden (2021), materials referred to as feed in most cases are made of single or multiple substances, such materials are either raw, semi-processed or fully processed which must be edible, digestible, absorbed and used by the bodies of food producing animals known as livestock. Studies by Herdge (2018) revealed that livestock are farm animals that are raised either for food, sale or pleasure, livestock includes animals such as dairy cow, cattle, goat and pig; others are sheep, horse and mules. The author stated that, the term livestock as used does not include poultry or farmed fish; however, the inclusion of these within the meaning of livestock is common. Livestock could produce labour and commodities such as meat, milk, fur, leather and wool. As such here in North Central Nigeria livestock include cattle, sheep, goat and pig others are horses, asses and mules among others.

Livestock feed could thus, be referred to any material that is naturally managed, purposively produced, processed or may be distributed by marketing to supply the nutritional requirement of domestic animal. Salman, El-Shargi, Al-Habsi and Al-Sadairi (2017) pointed that the main factors limiting ruminants' productivity is the shortage of feed resources resulting from the declining natural pasture; the major source of feeds in the traditional feeding system. Shortage of feed could have negative effects on livestock productivity and performance; low birth and growth, loss in milk, meat and fur as well as high sustainability of flock to diseases and death. Observation has shown that the traditional feeding practices that are based on natural pasture cannot support the large number of livestock and produce the desired output for economic development. For instance, Tanko (2021) posited that in recent times the free-range grazing system popularly known as open grazing has been facing prohibition in most parts of Nigeria due to associated challenges such as ignorant, incompetent, structural unemployment among other devastations as such sustainable improvement measures are urgently required for the livestock feed industry.

An industry comprises of all the enterprises and their relevant skills through which people can practice and make sustainable living. BYJU'S Exam Prep (2023) define industry as the economic activity that converts resources to useful materials. An industry is, therefore, an economic activity responsible for delivering valuable finished goods that are used in our daily lives. It relates to improving, producing, processing, marketing and financing or manufacturing of products. Regarding entrepreneurship opportunities in livestock feed industry; in North Central Nigeria, farm animals are moved from one part to another grazing on a vast uncultivated pasture or free rangeland; hence, opportunities are lying in sedentary practices where natural pastureland could be managed for improvement or purposively produced. Pasture grasses and legumes as well as agricultural by-products after harvest can also be processed into fodder as hay or silage and many other products as animal feed, these could be an enterprising opportunity. On entrepreneurship opportunities in marketing, livestock feed entrepreneurs could benefit through distribution of feed materials hence, Research and Markets (2020) in a global market report presented that, the animal feed market is projected to grow at a cumulative average growth rate (CAGR) of 4.90 percent by 2026. The perception here implies that, the animal feed market projected growth report could have a positive impact on new ventures as well as the existing ones if all things been

equal to profitably change their business and the overall economic status. Furthermore, on entrepreneurship opportunities in marketing, Okojie and Ayinde in Olorok and Ibrahim (2017) acknowledged that financial management includes obtaining funds, procuring inputs to the best advantage, keeping assets in good working order, ensuring adequate cash flow for current activities and in long terms, obtaining capital growth. Though, these operations in the livestock feed industry are relatively intensive to benefit from, requiring high occupational, technical and capital management competences among farmers in livestock feed industry.

A farmer as conceptualized by Olaitan in Jimoh (2017) is a person who grows crops and rears animals for the benefit of mankind. The author defined a farmer as a person who has the knowledge and skills required to produce crop and rearing of animals for human consumption. A farmer is therefore somebody who own or operates a farm. In harnessing different opportunities in livestock feed industry for socio-economic improvement of farmers, some farming procedures, inputs, methods and technologies are required. Nwachukwu and Olaitan (2017) testifies that improvement means progress towards what is better. It also means the difference between what one has and what is expected. This difference is called the need gap. In this study, improvement means what farmers possess and what they should possess in order to overcome their socio- economic problems.

Ukonze, Odo and Ogu (2017) asserted that to overcome socio-economic crises, people should engage themselves in entrepreneurship. Entrepreneurship as described by Uzuagulu and Uzuagulu (2013) is taking a bold heart and hand to enter a business, bear the business risk until progress and profits are achieved. Mohammed (2018) stated that an entrepreneur is a person while entrepreneurship is the process; entrepreneurship is a process under taken by an entrepreneur to create incremental value and wealth by discovering investment opportunities, organizing enterprises, undertaking risks and economic uncertainty and there by contributing to economic growth. The four key elements of entrepreneurs are: Visioning opportunities, innovation of new business, risk bearing in facing uncertainty and organization of the necessary resources. Egbule (2018) generally viewed the objectives of entrepreneurship education to include: To offer functional education that will enable students to be self-employed and self-reliance; to train students to recognize, create and be able to act on business opportunities; to apply creative and innovation that is moved from idea to action in business activities and to help students acquire vocational skills and develop linkages with business, industry and the community among others. In order to effectively achieve these entrepreneurship objectives in the area of livestock feed industry, education and training must be competency based.

Competency as explained by Ekele (2019) can be summarized thus: Knowledge +Skill + Attitude = Competency. Competency as an approach involves knowledge, skills, attitudes and judgment generally required for the successful performance of a task (Agbulu, 2019). Thus, competency could be explained to represent series of knowledge, abilities, skills, experiences and behaviors, which leads to effective performance in an individual's activities. It is also like capability; capacity; proficiency accomplishment; expertise; mastery; talent; aptitude; artistry; virtuosity and know-how required for effective performance of a task. McClelland in Wong (2020) proposed that it is desirable to measure not only the traditional cognitive skills and knowledge (e.g., reading, writing, and calculating skills), but also the personality

variables “that are more generally useful in clusters of life outcomes” while determining the performance levels of individuals in the workplace. These variables include leadership, interpersonal skills, communication skills, ego development, patience, goal-setting ability, and so forth. Gervais (2016) stated that Competency-Based Education (CBE) reform has been considered among “innovative approaches and best practices” by the US Department of Education. In theory it pledges that most students will achieve competence in the specified content area if they are given the opportunity and freedom to progress at their own pace and their learning experiences are structured according to their interests and needs. CBE challenges that learning takes place at a certain speed and place. In CBE, students gain mastery at the desired level, to some, this will take a short time, while others will need more time to do so. In addition, some students may have achieved these competencies through their previous experiences. The aim of CBE has been not only to turn knowledge into a pool, but also to enable students to develop certain skills. Thus, competency in-conjoin cognitive, psychomotor and affective experiences required for effective performance of a task.

In recognition of the importance of entrepreneurship competency as a drive toward socio-economic emancipation, the Federal Government of Nigeria (2013), in her National Policy on Education prescribed agriculture as an entrepreneurial vocational enterprise. Thus, obliged for promotion of, entrepreneurship education through which entrepreneurship competence in livestock feed production is domiciled. In the non-formal training. Anthony (2021) Illuminated that the Federal Government through Central Bank of Nigeria approved Entrepreneurship Development Centers (CBN-EDC) all over the geopolitical region in the country to include: Ibadan (South West); Port Harcourt (South South); Maiduguri (North East); Kano (North West); Makurdi (North Central); Minna (North Central); Enugu (South East) and Centre for Entrepreneurial Development Murtala Mohammed International Airport Road, Lagos. This revealed demonstrated concern for promotion of entrepreneurship competence in Nigeria. The purpose for developing entrepreneurship competence with livestock feed farmers inclusive is to empower the trainee livestock farmers gain useful knowledge, salable skills and attitudes; pick up employment and overcome socio-economic challenges in livestock feed industry.

On the contrary, the real situation is different, a mirage, much pathetic, as it masquerades and contravenes the intension hitherto. Thus, in recent times prospective farmers on formal and non-formal training programmes in livestock feed industry upon completion are often seem roaming the streets in search for employment opportunities in areas other than the livestock feed industry. This situation prompts questions such as: What specific competencies are required for socio-economic improvement in Livestock Feed Industry and What are the occupational areas in the livestock feed industry requiring the competencies? These questions and attempt to answer them led the researcher to embark on the study as an attempt to fill the gap supposedly caused by lack of competency required for harnessing entrepreneurship opportunities in livestock feed industry for socio-economic emancipation in North Central Nigeria.

## **1.2 Statement of the Problem**

Livestock feed industry could provide a pathway to socio-economic sustenance of human lives. However, the relevant entrepreneurship competency required by livestock farmers in harnessing the available opportunities for their socio-economic improvement is missing.

Observation has showed that though, the competency providers in both formal and non-formal education and training institutions are performing. On the contrary, farmer-entrepreneurs in Livestock feed industry are seem roaming streets in search for employment in areas other than the livestock feed industry, despite abundant productive resources in the livestock feed industry. A preliminary interaction with resource personnel in the livestock feed industry in North Central Nigeria confirmed that, there is lack of competency among prospective farmer-entrepreneurs in harnessing the available opportunities in livestock feed industry for socio-economic improvement. Thus, the quest for investigation into the abnormally.

### **1.3 Objectives of the Study**

The study sought to identify:

- i. Entrepreneurship competency required by farmers in harnessing opportunities in rangeland management for socio-economic improvement in North Central Nigeria
- ii. Entrepreneurship competency required by farmers in harnessing opportunities in pasture and forage crop production for socio-economic improvement in North Central Nigeria.
- iii. Entrepreneurship competency required by farmers in harnessing opportunities in processing livestock feed products for socio-economic improvement in North Central Nigeria.
- iv. Entrepreneurship competency required by farmers in harnessing opportunities in marketing livestock feed products for socio-economic improvement in North Central Nigeria.
- v. Entrepreneurship competency required by farmers in harnessing opportunities in financing livestock feed enterprise for socio-economic improvement in North Central Nigeria.

### **1.4 Research Questions**

The following research questions were raised to guide the study.

1. What are the mean ratings of the responses of Lecturers, Agricultural Extension Agents and Livestock Feed Entrepreneurs on entrepreneurship competency required by farmers in harnessing opportunities in rangeland management for socio-economic improvement in North Central Nigeria?
2. What are the mean ratings of the responses of Lecturers, Agricultural Extension Agents and Livestock Feed Entrepreneurs on entrepreneurship competency required by farmers in harnessing opportunities in pasture and forage crop production for socio-economic improvement in North Central Nigeria?
3. What are the mean ratings of the responses of Lecturers, Agricultural Extension Agents and Livestock Feed Entrepreneurs on entrepreneurship competency required by farmers in harnessing opportunities in livestock feed processing for socio-economic improvement in North Central Nigeria?
4. What are the mean ratings of the responses of Lecturers, Agricultural Extension Agents and Livestock Feed Entrepreneurs on entrepreneurship competency required by farmers in harnessing opportunities in marketing livestock feed products for socio-economic improvement in North Central Nigeria?



5. What are the mean ratings of the responses of Lecturers, Agricultural Extension Agents and Livestock Feed Entrepreneurs on entrepreneurship competency required by farmers in harnessing opportunities in financing livestock feed enterprise for socio-economic improvement in North Central Nigeria?

## **2.0 METHODOLOGY**

The study adopted a Survey Research Design, with the study population of one thousand three hundred and two (1302) made up of 3 groups: 76 Lecturers in Colleges of Agriculture, 767 Agricultural Extension Agents and 459 Livestock Feed Entrepreneurs. A Multistage Sampling Procedure was adopted to arrive at the sample size of three hundred and six (306) respondents. The study employed a structured questionnaire titled: Entrepreneurship Competency Questionnaire in Livestock Feeds' Industry (ECQ-LFI). The questionnaire was made of part I and II; part I had 2 items to elicit biodata information of the respondents while part II had 53 items with adjusted Likert scale of four options response categories of Highly Required (HR), Moderately Required (MR), Not Required (NR) and Highly Not Required (HNR). The questionnaire was validated by five experts: One from animal nutrition, one again from animal production, two from test measurement and evaluation and another one from agricultural education all in Joseph Sarwuan Tarka University Makurdi, Benue State, Nigeria. The reliability coefficient for the questionnaire was estimated at .94 using Cronbach alpha reliability method: By trial testing, thirty (30) respondents were chosen in Taraba state North Eastern Nigeria, Taraba State was chosen for trial-test because of its proximity in the context of the problem under study. The respondents to the trial-test were not the real parts of the study sample but had the same characteristics of the population of the study. Multistage Sampling Procedure was adopted, this was to allow for selection of a random sample size and to ease in collection of primary data from a geographically dispersed population. Data were collected by the researcher with the help of seven research assistants. Three hundred and three (303) copies of the questionnaire were administered and all were retrieved. Data analyses was carried out using statistical package for science and social sciences (SPSS). Thus, means and standard deviation estimates were used in answering research questions, whereas hypotheses were tested, and inferences made by Analysis of Variance ANOVA. The decision rule for acceptance or rejection of an item based on the mean value was 2.50. Using real number limit value, any item with a mean value of between 3.50-4.00 was regarded as Highly Required (HR), while a mean of between 2.50-3.49 was regarded as Moderately Required (MR). Also mean values between 1.50-2.49 were regarded as Not Required (NR) and mean values between 1.00-1.49 were regarded as Highly Not Required (HNR). For test of hypotheses, where the Sig. value (equal P-value) is greater than the alpha value of 0.05%, the null hypothesis was accepted otherwise rejected.

### 3.0 RESULTS

#### 3.1 Data Presentation and Analysis

##### Research Question 1

What are the entrepreneurship competencies required by farmers in harnessing opportunities in rangeland management for socio-economic improvement in North Central Nigeria.?

**Table 1. Mean Ratings of Respondents on Entrepreneurship Competency Required by Farmers in Harnessing Opportunities in Rangeland Management for Socio-Economic Improvement in North Central Nigeria (N=305)**

S//N 0	Item Description	N	Mean	SD	Decision
1	Explain the meaning of rangeland	302	3.39	.80	Required
2	List the importance of rangeland	302	2.91	.68	Required
3	State characteristics of rangeland	302	3.70	.66	Required
4	Identify common grasses and legumes of livestock	302	2.62	.73	Required
5	State factors affecting the level of production of herbage.	302	3.75	.52	Required
6	List and explain different methods of rangeland improvement	302	2.96	.75	Required
7	Identify the common rangeland feeding practices in North Central Nigeria	302	2.69	.68	Required
8	Discuss the nature and implication of rangeland feeding practice in North Central Nigeria	302	2.70	.86	Required
9	Explain the term open grazing	302	3.60	.76	Required
10	State the primary causes of open grazing crises	302	3.19	.82	Required
11	State the strategy for mitigating open Grazing crises	302	3.70	.67	Required
12	Identify characteristics and traits of entrepreneurs for rangeland management	302	3.60	.74	Required
13	Set management plans for rangeland enterprise establishment	302	3.19	.84	Required
14	Express proficiency in management of rangeland enterprise for improvement	302	3.70	.58	Required

Data in Table 1 revealed 14 items with their mean ranged from 2.62 to 3.75 which were all greater than the cutoff point of 2.50. This indicated that the respondents agreed that all the items were entrepreneurship competencies required for rangeland management in livestock feeds industry. The Table also showed standard deviation values of the same items ranged from .52 to .86 which indicates that the respondents were not far from the mean and one another in their opinion.

## Research Question 2

What are the entrepreneurship competencies required for harnessing opportunities in pasture and forage crop production?

**Table 2. Mean ratings of Respondents on Entrepreneurship Competency Required by Farmers in Harnessing Opportunities in Pasture and Forage Crop Production for Socio-Economic Improvement in North Central Nigeria (N=305)**

S/NO	Item Description	N	Mean	SD	Decision
1	Explain meaning of pasture and forage crops.	302	2.59	.82	Required
2	State the uses of forage crops.	302	2.91	.80	Required
3	List the different types and characteristics of pasture	302	3.70	.58	Required
4	List some common and botanical names of grasses and legumes for a good pasture	302	2.81	.80	Required
5	Identify factors affecting distribution of pasture.	302	3.75	.60	Required
6	List factors affecting productivity of pasture	302	2.96	.78	Required
7	State factors to be considered before establishment of pasture	302	3.69	.64	Required
8	Identify characteristics and traits of entrepreneurs for pasture and forage crop production	302	3.08	.66	Required
9	Know-how to Plan for pasture and forage crop production establishment enterprise.	302	3.60	.52	Required
10	State sequence for establishment of pasture production enterprise.	302	3.19	.82	Required

Data in Table 2 revealed 10 items with their mean ranged from 2.59 to 3.75 which were all greater than the cutoff point of 2.50. This indicated that the respondents agreed that all the items were entrepreneurship competencies required for harnessing opportunities in pasture and forage crop production. The Table also showed standard deviation values of the items ranged from .52 to .82 which indicates that the respondents were not far from the mean and one another in their opinion.



### **Research Question 3**

What are the entrepreneurship competencies required by farmers in harnessing opportunities in processing livestock feed products for socio-economic improvement in North Central Nigeria?

**Table 3. Mean Ratings of Respondents on Entrepreneurship Competency Required by Farmers in Harnessing Opportunities in Processing Livestock Feed Products for Socio-Economic Improvement in North Central Nigeria (N=305)**

<b>S/NO</b>	<b>Items Description</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Decision</b>
1	Define livestock feed processing and advance reasons for livestock feed processing	302	2.66	.88	Required
2	State the four basic steps in making animal feed	302	2.91	.82	Required
3	State sources of nutrients for livestock feeds processing	302	3.70	.52	Required
4	State the importance of livestock feeds processing	302	2.52	.67	Required
5	Classify livestock feed stuffs	302	3.75	.75	Required
6	Discuss the general methods of processing	302	3.42	.72	Required
7	Identify the characteristics and traits of entrepreneur in livestock feed processing enterprise	302	2.96	.74	Required
8	Set plan for livestock feed processing	302	3.42	.72	Required
9	Demonstrate abilities in hay processing	302	3.76	.68	Required
10	Demonstrate abilities in silage processing	302	3.66	.64	Required

Data in Table 3 revealed 10 items with their mean ranged from 2.52 to 3.76 which were all greater than the cutoff point of 2.50. This indicated that the respondents agreed that all the items were entrepreneurship competencies required for harnessing opportunities in processing livestock feeds products. The Table also showed standard deviation values of the items ranged from .52 to .88 which indicates that the respondents were not far from the mean and one another in their opinion.

#### **Research Question 4**

What are the entrepreneurship competencies required by farmers in harnessing opportunities in marketing livestock feeds enterprise for socio-economic improvement in North Central Nigeria?

**Table 4. Mean Ratings of Respondents on Entrepreneurship Competency Required by Farmers in Harnessing Opportunities in Marketing Livestock Feeds Products for Socio-Economic Improvement in North Central Nigeria (N=305)**

<b>S/NO</b>	<b>Item Description</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Decision</b>
1	State meaning and importance of marketing livestock feeds	302	2.59	.78	Required
2	List the various agents of marketing livestock feeds	302	2.94	.74	Required
3	Identify the various channels of marketing livestock feeds industry	302	3.70	.68	Required
4	State the various stages of marketing livestock feeds	302	2.31	.80	Required
5	State the problems and ways of encouraging marketing of livestock feeds	302	3.75	.52	Required
6	Explain the various marketing functions in livestock feed industry	302	2.96	.62	Required
7	State characteristics and traits of entrepreneurs for marketing in livestock feed industry	302	2.50	.84	Required
8	State plans for livestock feed product marketing	302	3.44	.64	Required
9	Implement strategic plans for marketing livestock feed products	302	3.42	.70	Required

Data in Table 4 revealed 9 items with their mean ranged from 2.50 to 3.75 which were all greater than the cutoff point of 2.50. This indicated that the respondents agreed that all the items were entrepreneurship competencies required for harnessing opportunities in marketing livestock feed products. The Table also showed standard deviation values of the items ranged from .52 to .84 which indicates that the respondents were not far from the mean and one another in their opinion.

**Research question 5**

What are the entrepreneurship competencies required by farmers in harnessing opportunities in financing livestock feeds enterprise for socio-economic improvement in North Central Nigeria?

**Table 5. Mean Ratings of Respondents on Entrepreneurship Competency Required for Harnessing Opportunities in Financing Livestock Feeds Enterprise for Socio-Economic Improvement in North Central Nigeria (N=305)**

S/NO	Item Description	N	Mean	SD	Remark
1	State the meaning and importance of finance in livestock feed industry	302	2.66	.68	Required
2	Explain the terms credit, subsidy and interest	302	3.76	.66	Required
3	State sources of finance in livestock feed industry	302	3.42	.76	Required
4	List the basic problems of entrepreneurial credit in livestock feed industry	302	3.66	.50	Required
5	Discuss problems militating against bank and organizations in granting loan to entrepreneurs in livestock feed industry	302	2.96	.82	Required
6	Define and discuss the term capital market	302	2.58		Required
7	State characteristics and traits of entrepreneurs in financing livestock feeds establishment	302	2.64	.88	Required
8	Set plans to finance livestock feed establishment	302	3.44	.60	Required
9	Express proficiency on operations involve in financing livestock feeds establishment	302	3.42	.56	Required

Data in Table 5 revealed 9 items with their mean ranged from 2.66 to 3.76 which were all greater than the cutoff point of 2.50. This indicated that the respondents agreed that all the items were entrepreneurship competencies required for harnessing opportunities in financing livestock feed enterprise. The Table also showed standard deviation values of the items ranged from .50 to .88 which indicates that the respondents were not far from the mean and one another in their opinion.

### 3.2 Testing of Research Hypotheses

#### Hypothesis 1

**HO<sub>1</sub>** There is no significant difference in the mean ratings of the responses of Lecturers, Extension Agents and Livestock Feed Entrepreneurs on entrepreneurship competency required by farmers in harnessing opportunities in rangeland management for socio-economic improvement in North Central Nigeria.

**Table 6. ANOVA for Testing the Difference Among Respondents on Entrepreneurship Competency Required by Farmers in Harnessing Opportunities in Rangeland Management for Socio-Economic Improvement in North Central Nigeria**

Sum of Squares		Df	Mean Square	F	Sig.	Decision
Between Groups	.30	2	.02	0.67	.24	Ho <sub>1</sub> Accepted
Within Groups	8.18	304	.03			
Total	8.48	306				

The data in Table 7 showed p-value of .24 which was greater than alpha value of 0.05 level of significance. This means that there was statistically, no significant difference in the mean ratings of the three groups of respondents on entrepreneurship competency required for harnessing opportunities in rangeland management. Therefore, the null hypothesis on entrepreneurship competency required for harnessing opportunities in rangeland management was accepted.

#### Hypothesis 2

**HO<sub>2</sub>** There is no significant difference in the mean ratings of the responses of Lecturers, Extension Agents and Livestock Feed entrepreneurs on entrepreneurship competency required for harnessing opportunities in pasture and forage crop production for socio-economic improvement in North Central Nigeria.

**Table 7. ANOVA for Testing the Differences among Respondents on Entrepreneurship Competency Required for Harnessing Opportunities in Pasture and Forage Crop Production for socio-economic improvement in North Central Nigeria**

	Sum of Squares	Df	Mean Square	F	Sig.	Decision
<b>Between Groups</b>	.48	2	.24	4.00	.13	H <sub>2</sub> Accepted
<b>Within Groups</b>	19.00	304	.06			
<b>Total</b>	19.48	306				

The data in Table 8 showed p-value of .13 which was greater than alpha value of 0.05 level of significance. This means that there was statistically, no significant difference in the mean ratings of respondents on entrepreneurship competency required for harnessing

opportunities in pasture and forage crop production Therefore, the null hypothesis on entrepreneurship competency required for harnessing entrepreneurship opportunities in pasture and forage crop production was accepted.

### Hypothesis 3

**HO<sub>3</sub>** There is no significant difference in the mean ratings of the responses of Lecturers, Extension Agents and Livestock Feed Entrepreneurs on entrepreneurship competency required by farmers in harnessing opportunities in processing livestock feeds products for socio-economic improvement in North Central Nigeria.

**Table 8. ANOVA for Testing Differences among Respondents on Entrepreneurship Competency Required by Farmers in Harnessing Opportunities in Processing Livestock Feeds Products for Socio-Economic Improvement in North Central Nigeria.**

	Sum of Squares	Df	Mean Square	F	Sig.	Decision
<b>Between Groups</b>	.26	2	.13	13	.07	H <sub>3</sub> Accepted
<b>Within Groups</b>	2.23	304	.01			
<b>Total</b>	2.49	306				

The data in Table 9 showed p-value of .07 which was greater than alpha value of 0.05 level of significance. This means that there was statistically, no significant difference in the mean ratings of the three groups of respondents on entrepreneurship competency required for harnessing opportunities in processing livestock feeds products. Therefore, the null hypothesis on entrepreneurship competency required for harnessing opportunities in processing livestock feeds products was accepted.

### Hypothesis 4

**HO<sub>4</sub>** There is no significant difference in the mean ratings of the responses of Lecturers, Extension Agents and Livestock Feed Entrepreneurs on entrepreneurship competency required for harnessing opportunities in of livestock feeds marketing.

**Table 9. ANOVA for Testing the Differences among Respondents on Entrepreneurship Competency Required by Farmers in Harnessing Opportunities in Marketing Livestock Feeds Products for Socio-Economic Improvement in North Central Nigeria**

	Sum of Squares	Df	Mean Square	F	Sig.	Decision
<b>Between Groups</b>	.33	2	.17	4.25	.18	H <sub>4</sub> Accepted
<b>Within Groups</b>	11.45	304	.04			
<b>Total</b>	11.78	306				

The data in Table 10 showed p-value of .18 which was greater than alpha value of 0.05 level of significance. This means that there was statistically, no significant difference in the mean ratings of the three groups of respondents on entrepreneurship competency required for

marketing livestock feed product. Therefore, the null hypothesis on entrepreneurship competency required for harnessing opportunities in marketing livestock feeds product was accepted.

### **Hypothesis 5**

**HO<sub>5</sub>** There is no significant difference in the mean ratings of the responses of Lecturers, Extension Agents and Livestock Feed Entrepreneurs on entrepreneurship competency enquired by farmers in financing opportunities in livestock feed industry for socio-economic improvement in North Central Nigeria.

**Table 10. ANOVA for Testing the Difference Among Respondents on Entrepreneurship Competency Required by Farmers in Financing Opportunities in Livestock Feed Industry for Socio-Economic Improvement in North Central Nigeria.**

	Sum Squares	of Df	Mean Square	F	Sig.	Decision
<b>Between Groups</b>	.18	2	.09	9	.06	H <sub>5</sub> Accepted
<b>Within Groups</b>	2.63	304	.01			
<b>Total</b>	2.81	306				

The data in Table 10 showed p-value of .06 which was greater than alpha value of 0.05 level of significance. This means that there was statistically, no significant difference in the mean ratings of the three groups of respondents on entrepreneurship competency required for financing enterprise in livestock feed industry. Therefore, the null hypothesis on competency required in harnessing entrepreneurship opportunities in marketing livestock feed products for socio-economic improvement in North Central Nigeria was accepted.

### **3.3 Discussion of findings**

The study revealed that 14 items were entrepreneurship competency required by farmers in harnessing entrepreneurship opportunities in rangeland management for socio-economic improvement in North Central Nigeria was accepted. The items includes competencies to Explain the meaning of rangeland, Explain the term open grazing, State the primary causes of open grazing crises, State the strategy for mitigating open Grazing crises, Identify characteristics and traits of entrepreneurs for rangeland management, Set management plans for rangeland enterprise establishment and Express proficiency in management of rangeland enterprise for improvement among other items. This result is in consonant with Salman, El-Shargi, Al-Habsi and Al-Sadairi (2017) who pointed out that the main factors limiting ruminants' productivity is the shortage of feed resources resulting from the declining natural pasture; the major source of feeds in the traditional feeding system. Also in agreement, Tanko (2021) posited that in recent times the free-range grazing system popularly known as open grazing has been facing prohibition in most parts of Nigeria due to associated crises such as ignorant, incompetent, structural unemployment among other devastations requiring urgent improvement measures for sustenance.



The study also revealed that 10 items were entrepreneurship competencies required in harnessing opportunities in pasture and forage crop production for socio-economic improvement in North Central Nigeria was accepted. The items include competencies to: Explain meaning of pasture and forage crops; state the uses of forage crops; list factors affecting productivity of pasture; state factors to be considered before establishment of pasture; identify characteristics and traits of entrepreneurs for pasture and forage crop production; know-how to Plan for pasture and forage crop production establishment enterprise and state sequence for establishment of pasture production enterprise among others. This finding agreed with BYJU'S Exam Prep (2023) in the definition of an industry as the economic activity that converts resources to useful materials and responsible for delivering valuable finished goods that are used in our daily lives. It, therefore, relates to activities required in harnessing opportunities in pasture and forage crop production for socio-economic improvement in North Central Nigeria.

The study further revealed that 10 items were entrepreneurship competency required by farmers in harnessing entrepreneurship opportunities in processing livestock feeds products for socio-economic improvement in North Central Nigeria. The items include competencies to: Define livestock feed processing and advance reasons for livestock feed processing; state the four basic steps in making animal feed; State sources of nutrients for livestock feeds processing; set plan for livestock feed processing; demonstrate abilities in hay processing and demonstrate abilities in silage processing among others. The findings agree with Tanko (2021) who posited that open grazing has been facing prohibition in most parts of Nigeria due to devastations as such the industry require urgent improvement measures for sustenance. It thus, related to competencies required in processing livestock feeds products for socio-economic improvement of farmers in North Central Nigeria.

Furthermore, the study revealed that 9 entrepreneurship competencies were required by farmers in harnessing entrepreneurship opportunities in marketing livestock feed products for socio-economic improvement in North Central Nigeria. The study finding is not far from Research and Markets (2020) in a global market report presented that, the animal feed market is projected to grow at a cumulative average growth rate (CAGR) of 4.90 percent by 2026. The perception here implies that, the animal feed market projected growth report could have a positive impact on new ventures as well as the existing ones if all things been equal to profitably change their business and the overall economic status.

The study finally, revealed that again 9 items were entrepreneurship competency required by farmers in harnessing entrepreneurship opportunities in financing livestock feed enterprise for socio-economic improvement in North Central Nigeria. This relates to Okojie and Ayinde in Olorok and Ibrahim (2017) who acknowledged that financial management includes obtaining funds, procuring inputs to the best advantage, keeping assets in good working order, ensuring adequate cash flow for current activities and in long terms, obtaining capital growth.

## 4.0

## CONCLUSION AND RECOMMENDATIONS

### 4.1 Conclusion

With relevant entrepreneurship competence, livestock feed industry can provide a pathway to socio-economic sustenance of human lives. It is therefore; the researcher's concern to investigate into such entrepreneurship competency required by farmers in livestock feeds industry for socio-economic improvement in North Central Nigeria. In conclusion, the study identified, and packaged entrepreneurship competencies required by farmers in harnessing opportunities in livestock feed industry for socio-economic improvement in North Central Nigeria.

### 4.2 Recommendations

Based on the findings of this study the following recommendations were made:

1. The package can be used as a guide by desirable individuals for self-learning.
2. Education and training institutions can use the package as a guide for implementation of entrepreneurship training programmes in livestock feeds industry.
3. The study finding is recommended to government for establishment of social development scheme in entrepreneurship training and support, linking the five identified occupational areas in the livestock feed industry for socio-economic improvement of farmers.

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