

Influencing Factors of Competency for Extension Practitioners in Promoting Napier Grass Cultivation Among Pastoralists in Nigeria

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ABSTRACT

Purpose: This study aimed to strengthen the competency of extension practitioners through Napier grass cultivation to tackle issues of social and environmental insecurity in the country.

Research Method: The study used a descriptive research design and employed Borich's model to process the knowledge and competency of 200 extension practitioners on tasks related to Napier grass cultivation. Data analysis was done using means and ranks while discrepancy scores were also determined.

Findings: The study revealed a degree of inadequacy in the practitioners' knowledge of Napier grass cultivation, but they rated the intervention of extension practitioners as important. The study found that in-service training to improve practitioners' competency and skill in speaking pastoralists' language is highly required for effective communication and information dissemination of Napier grass cultivation. Identification of the competency areas will boost capacity for grassland intensification strategies among pastoralists and stimulate training programs that will enrich practitioners' knowledge; improve their innovation for adaptation to climate change impact; and develop their mitigation ability for social and environmental insecurities.

Originality/ Value: The study is novel in reporting, for the first time, the competencies of extension practitioners in promoting grassland intensification for pastoralists in Nigeria. It further reduces the paucity of empirical studies on the competency of extension practitioners, with a particular focus on their training needs.

Keywords: Grassland intensification, Training needs, Environmental insecurity, Borich needs assessment model, Information dissemination.

INTRODUCTION

The agricultural extension aims at improving farmers' well-being by providing relevant access to applicable skills while promoting appropriate information to augment their production capacity and procedural capability. Agricultural extension covers information on farm management that will improve production and economic returns (Sennuga *et al.*, 2020). Consequently, it is increasingly important to encourage core competencies so that extension personnel can perform at maximum capacity (Nwaogu and Akinbile, 2018). Competency is the ability to achieve set goals and a personal characteristic contributing to exceptional performance in one's profession.

It is necessary to evaluate knowledge, education, skills, experience, and expertise for any given role or assigned tasks in assessing competency (Alabi *et al.*, 2021; Aderinoye-Abdulwahab *et al.*, 2021). While the tasks of extension agents are usually inclusive, they are not limited to those involving pasture and rangeland management.

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Pastoralists in sub-Saharan Africa (SSA) migrate from arid regions because of environmental hazards which include drought, desertification, and climate change (Aderinoye-Abdulwahab and Chimgonda-Nkhoma, 2015; Aderinoye-Abdulwahab and Abdulkaki, 2020). The primary aim of their movements is the search for water and pasture for cattle, and it is often reported that their cattle feed on farmers' crops, thus resulting in clashes (Aderinoye-Abdulwahab and Chikaire, 2020). It is a great challenge for pastoralists to secure quality fodder all year round. This leads them to face serious conflicting situations with farmers, with far-reaching consequences for the nation. Onifade (2018) noted that the planting and processing of grass into silage and hay can ensure environmental security and guarantee quality forage and feed throughout the year. It is believed that the advantages obtainable from grassland intensification could serve as a long-term solution in reducing greenhouse emissions in the environment and solving the ravaging security issues involving pastoralists in Nigeria.

Until now, grass remains one of the affordable options for high-quality feed sources for ruminant livestock with the intensification of native grasses fast evolving (Schils *et al.*, 2022). Grassland intensification, in this study, is used to refer to the propagation of pasture in a controlled environment under appropriate administration and supervision to increase outputs (Garrett *et al.*, 2018). Grassland intensification supports many ecosystem services such as flora and fauna biodiversity, organic and natural productivity, and livestock management (Onifade, 2018).

Napier grass (*Pennisetum purpureum*) is commonly found in sub-Saharan Africa, and it has rapid growth within three months; it can equally be processed into hay to feed cattle (Muktar *et al.*, 2022). Napier is extensively grown in humid and sub-humid regions (Sarker *et al.*, 2021) with an excessive tolerance for drought and a high-yielding characteristic that supports water use efficiency (Muktar *et al.*, 2022). Napier rapidly regenerates to produce palatable leafy shoots (Sarker *et al.*, 2021). Consequently, it would be critical to assess extension workers' proficiency in providing adequate extension services that may result in adopting Napier cultivation among pastoralists. This study will foster the enhancement of knowledge-based intensification of Napier grass through artificial cultivation. Additionally, using Napier grass portends many benefits to livestock value chains because its production depends on quality feed and forages.

Grassland intensification offers many advantages such as the prevention of erosion and flooding (Chalar *et al.*,

2017). It provides a scenic environment and enhances the livelihood of local rural residents (Hussain *et al.*, 2019). Given their mindset and the peculiarity of the pastoralists' setting, a positive attitude, improved knowledge, and practical skills of competent livestock extension agents would be required to attain an efficient grassland intensification system (Aderinoye-Abdulwahab *et al.*, 2021). In this study, competency is described as the capability of extension practitioners to influence pastoralists' attitudes positively and willingly adopt the cultivation of grass for all-year-round use. Unfortunately, extension practitioners face an array of challenges, including inadequate extension services; low technical and innovative skills; and poor managerial problems (Sennuga *et al.*, 2020). It therefore becomes necessary to assess the competency of extension practitioners in promoting grassland intensification for pastoralists since there is no record of previous research in Nigeria. This study, therefore, has its uniqueness in reporting, for the first time, the competencies of extension practitioners in promoting grassland intensification for pastoralists.

Purpose and Objectives

The purpose was to determine the competency of extensionists in promoting grassland intensification through the cultivation of Napier grass for pastoralists. Borich's model (1980) was used to assess practitioners' competencies based on their significance to the subject matter and their capacity to perform each competency. The study objectives were to:

1. Ascertain practitioners' knowledge level on Napier cultivation and grassland intensification for pastoralists.
2. Describe the importance of extension practitioners on Napier grass cultivation among pastoralists.
3. Identify the competence of extension practitioners on Napier grass cultivation.

Model, Conceptual Framework, and Hypotheses

The Borich Needs Model offers users the opportunity to appraise themselves on skills and competencies. This study adapted the model to determine the relevance of extension practitioners' skills and competencies in Napier grass cultivation. The model assumes that users can be trusted to pass an objective judgment of their expertise (Borich, 1980) and it has been used to identify training areas by computing means and discrepancy scores. The model allows for adjustment and expansion while discrepancy scores can be used to match

attitudes, abilities, and competencies with the program objectives (Borich, 1980). Consequently, this study used the model to rank the practitioners' competencies based on significance to extension service; in addition, their ability to perform each competency required to promote Napier grass cultivation effectively for pastoralists. In recent times, several studies have employed this model to assess the competency needs of extension professionals (Alabi and Ajayi, 2017; Olorunfemi *et al.*, 2019).

Conceptual framework: This study investigated the competencies of extension workers in promoting grassland intensification for pastoralists in Nigeria. As anticipated in the study, grassland intensification is assumed feasible through massive Napier grass cultivation for feeding cattle. The initiative is alien to the system of cattle rearing and livestock extension services in Nigeria. Hence, an evaluation of the competency needs of extension practitioners (Figure 01) becomes important and must be determined to inform future efforts towards the promotion of Napier grass cultivation.

The study hypothesized that:

H1. Socio-economic factors do not significantly influence competency of extension practitioners.

H2. Knowledge does not significantly influence competency of extension practitioners.

MATERIALS AND METHODS

Research Design

The study adopted a descriptive quantitative design using a survey together with fact-finding inquiries, in order to investigate and explore matters/activities in the state in which they exist (Kothari, 2004). A descriptive quantitative design was considered suitable for this study since the data was gathered from a sample of extension practitioners through a survey using a semi-structured interview schedule, while the data was presented in a descriptive fashion.

Study Area

The study was conducted in the North-central region of Nigeria, which includes Benue, Plateau, Niger, Kogi, Kwara, Nasarawa, and the Federal Capital Territory (FCT), Abuja (Figure 02). The region is geographically located between latitude 7°00'–11°30' North and longitude 4°00'–11°00' East. The North-central zone has a population of approximately 20,266,257 people and is suitable for growing crops such as corn, peas, grains, and vegetables. Livestock farming,

particularly ruminants through nomadic herding by migrant herdsmen, as well as fisheries activities, are also prominent in the region.

Ecologically, the North-central zone is situated within the Guinea savanna belt of the country (NBS, 2017). However, its vegetation spans across three grassland areas, making it an ideal region for the cultivation of cereals and root crops, which dominate the ecological zones.

Population and Sample Size

The population of this study comprised all extension practitioners in North-Central Nigeria. Extension practitioners, in this study, are individuals functioning in different specializations related to agriculture, livestock, or environmental extension in public and private extension offices.

This study used a two (2)-stage sampling technique to select respondents.

- **Stage 1:** Simple random selection of Niger and Kwara States.
- **Stage 2:** Simple random selection of 100 extension practitioners in each state.

The selected institutions, where extension practitioners were chosen, included:

- The State Agricultural Development Project (70%),
- The State Ministry of Agriculture (10%),
- The State Ministry of Environment (10%), and
- Private extension organizations (10%).

The study selected 200 participants. Ethical permission to carry out this study was obtained from the Ethical and Research Committee of the National Agricultural Extension Research and Liaison Services (NAERLS), Ahmadu Bello University, Nigeria (Protocol number: 60042806).

Data Collection

The study employed a validated and reliable questionnaire to gather quantitative information (Cronbach alpha coefficient = 0.71). The questionnaire was structured according to the stated objectives and measured thus: awareness/knowledge of Napier grass, importance of Napier grass cultivation, and

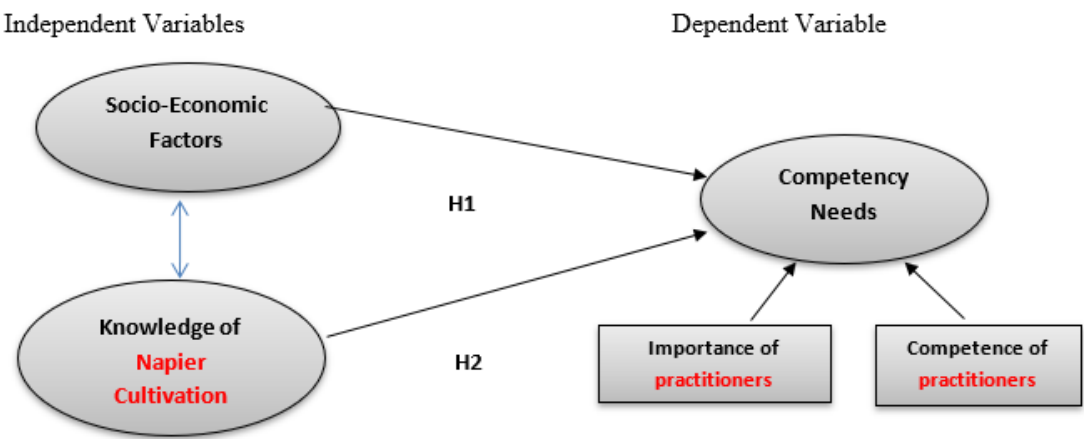


Figure 1: Path Diagram and hypothesized relationships.

Source: Author’s construct (2021)

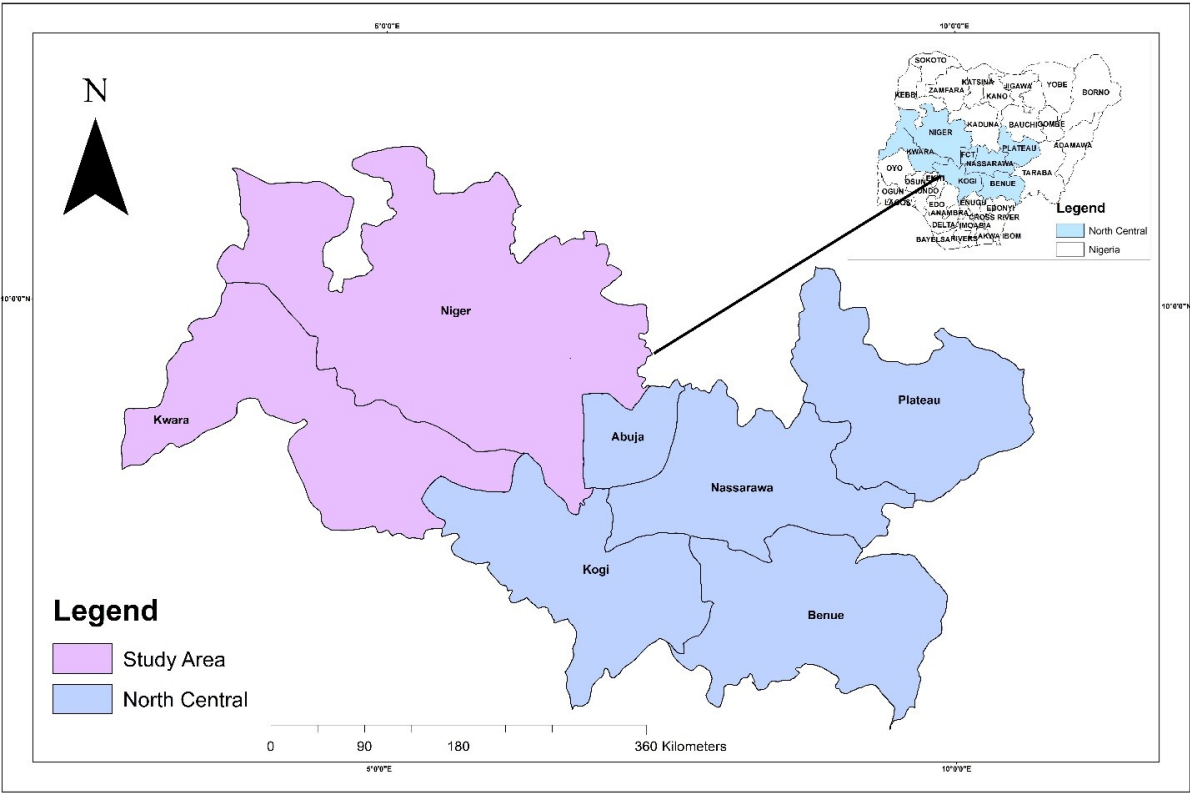


Figure 2: Map of North-Central Nigeria showing the study area.

Source: Author’s construct (2021)

skillfulness/ability to promote Napier grass cultivation using 2-3 points Likert type scale.

Before data collection, each participant was presented with a consent form to indicate willingness to participate. Participants that consented were pre-informed on the following: (i) Your participation will have no effect on your health; (ii) You can stop the conversation anytime without being sanctioned; (iii) Other than the researchers, no one will know your

answers and identity; (v) your responses will be used for research purpose only, and treated with utmost confidentiality; (v) Do you have any questions before we continue? Are you still willing to participate in this interview? Following the expression of interest to participate in the study, each respondent was directly given the questionnaire to complete.

Data collection was done with the help of research assistants who were trained on the contents of the

instrument before embarking on the field survey. The entire questionnaire distributed was retrieved (100% return rate) given the enthusiasm and willingness of the participants. After a thorough examination of the questionnaire, useful data therein was entered into an Excel sheet for analysis.

Data Analysis

The data was processed descriptively using frequencies, percentages, and mean scores. The Borich model was used to assess the extensionists' competency in promoting grassland intensification through the cultivation of Napier grass for pastoralists. The mean weighted discrepancy score (MWDS) was calculated for each competency and every respondent by summing the difference in the means (I_{ith}) of their ability rating/competency (C) and the importance rating (I), multiplied by the mean importance rating ($\bar{X}_i$), and thereafter divided by the number of observations (N).

The model is expressed as follows:

$$MWDS = \frac{\sum (I_{ith} - C_{ith}) \cdot \bar{X}_i}{N}$$

Higher mean scores translate to greater competencies of the practitioners in promoting grassland intensification through the cultivation of Napier grass for pastoralists.

An Ordinary Least Squares (OLS) regression model was adapted to examine the socio-economic factors that significantly contribute to the competency of extension practitioners in promoting grassland intensification through Napier grass cultivation for pastoralists.

RESULTS AND DISCUSSION

Socio-economic Characteristics of Agricultural Extension Practitioners

Table 01 displays the demography of the agricultural extension practitioners. It was shown that their average age was 42.7 ± 6.4 years, aligning with a study by Ezech (2013) that found the productive age of extension agents ranges from 40 to 60 years. This indicates that the extension practitioners are still within the productive age range and are expected to be energetic in performing extension activities effectively. Therefore, it becomes beneficial and essential to establish the competency of the productive extension practitioners to enable relevant policy interventions for effective support services and capacity building for increased Napier grass cultivation among pastoralists.

About half of the extension workers (51.5%) had a Higher National Diploma (HND), while 33.5% had a bachelor's degree. This reveals that extension practitioners in the study area were literate enough to carry out extension jobs effectively in promoting Napier grass cultivation for pastoralists. Again, empirical data have closely linked education and communication, showing that they have a resilient and significant relationship (Khan and Akram, 2012; Javeid and Nawab, 2021).

On years of experience in service, extension practitioners had an average of 17.1 ± 6.9 years of experience. This indicates an adequate level of experience, which can be translated into leveraging their wealth of knowledge to strategize effectively for a positive change of attitude among pastoralists. They can also use their experience to encourage or foster a willingness to adopt Napier grass cultivation and effectively teach pastoralists the practical procedures required to cultivate Napier grass for efficient cattle feeding. Elsewhere, it has been shown that career growth is rooted in years of experience and is one of the main indicators of success in aiding effective agricultural advisory services (Ashraf *et al.*, 2019). This suggests that extension agents cannot attain proficiency if professionalism is overlooked. Furthermore, 42.5% of the respondents belonged to different professional associations, while the majority (81.0%) specialized in agricultural extension. Another majority (61.5%) were moderately compliant in terms of skills related to Information and Communication Technology (ICT). ICTs are noted for playing a significant role in disseminating beneficial information and offering a robust feedback mechanism in agricultural extension services (Suvedi and Ghimire, 2015; Umar *et al.*, 2015).

Extension Practitioners' Knowledge of Grassland Intensification

Regarding their knowledge of Napier grass cultivation, it is expected that extension practitioners, tasked with publicizing and promoting agricultural innovations among farmers, should possess complete knowledge as a prerequisite for providing complete information. However, it is unfortunate that only 1.5% of the extension practitioners had complete knowledge of how to perform essential tasks, including site selection (soil type, nature and nutrients, climatic requirements), harvesting, processing, and marketing (Table 02).

None could adequately function in disseminating the entire array of tasks involved in cultivation; some of them are sourcing for planting materials, sowing, weed

Table 1: Socio-economic Characteristics of Agricultural Extension Practitioners

Variables	Frequency	Percentage (%)
Age (years)		
≤ 30	6	3.0
31 – 40	75	37.5
41 – 50	93	46.5
51 – 60	26	13.0
≥ 61	0	0.0
Mean ± Std Dev.	42.7 ± 6.4	
Range	29 – 60	
Educational Qualification		
OND	14	7.0
HND	103	51.5
B.Agric./B.Sc./B.Tech	67	33.5
Postgraduate	16	8.0
Years of experience in service		
1 – 10	46	23.0
11 – 20	96	48.0
21 – 30	54	27.0
Above 30	4	2.0
Mean ± Std Dev.	17.1 ± 6.9	
Range	4 – 31	
Area of Specialization		
Agric. Extension	162	81.0
Agric. Economics	14	7.0
Animal Production	13	6.5
Crop Protection	4	2.0
Agroforestry	7	3.5
Membership of Association		
Yes	85	42.5
No	115	57.5
Level of ICT Compliance		
High	77	38.5
Medium	123	61.5
Low	0	0.0

Source: Field survey, 2022

control, and fertilization. This shows that the extension practitioners had poor knowledge of cultivating Napier grass (Table 03). The implication is that extension practitioners may not be effective in disseminating/training the pastoralists on the cultivation of the grass. Therefore, determining their competency will suggest the areas of training needed for effective job

performance.

Extension Practitioners' Tasks on Grassland Intensification

Table 04 illustrates the ranking of seven tasks of extension practitioners based on the importance of

Table 2: Knowledge Acquisition: Napier Grass Cultivation Practices

Napier Grass Cultivation Practices	Knowledge Acquisition (%)			
	Not at All	Some Part	Almost All	Complete
Site selection (soil type, nature and nutrients, climatic requirement) and identification of soil type and nutrient requirement	75 (37.5)	107 (53.5)	15 (7.5)	3 (1.5)
Sourcing the planting materials	108 (54.0)	81 (40.5)	11 (5.5)	0 (0.0)
Sowing: Recommended seeding methods, spacing, sowing depth, and sowing period	112 (56.0)	82 (41.0)	6 (3.0)	0 (0.0)
Weed Control (herbicides is captured automatically)	97 (48.5)	90 (45.0)	13 (6.5)	0 (0.0)
Fertilization: Type, method, time, and rate	105 (52.5)	79 (39.5)	16 (8.0)	0 (0.0)
Harvesting method: Time (sign), tool, and sign of maturity-dry petioles and fall	88 (44.0)	94 (47.0)	15 (7.5)	3 (1.5)
Processing: Conservation methods (straw, hay, silage) and packaging	112 (56.0)	77 (38.5)	8 (4.0)	3 (1.5)
Marketing	162 (81.0)	32 (16.0)	3 (1.5)	3 (1.5)

Source: Field survey, 2022

Table 3: Knowledge Level of Extension Practitioners on Napier Grass Cultivation

Knowledge Level	Frequency	Percentage (%)	Mean
Poor (0 – 8)	170	85.0	4.4
Fair (9 – 16)	27	13.5	
Good (17 – 24)	3	1.5	

The maximum possible score is 24

Table 4: Competency Areas of Extension Practitioners on Grassland Intensification

Areas of Competency	Importance of Practitioner Mean (SD)	Competence of Practitioner Mean (SD)	MWDS	Rank
Ability to speak the language of the pastoralists	2.59 (0.551)	2.11 (0.742)	1.243	1
Ability to communicate effectively with pastoralists	2.74 (0.470)	2.43 (0.572)	0.863	2
Ability to share information on technology transfer	2.84 (0.372)	2.55 (0.499)	0.824	3
Ability to demonstrate the cultivation of the grass	2.68 (0.511)	2.44 (0.573)	0.629	4
Ability to share information on extension methods	2.85 (0.426)	2.66 (0.477)	0.541	5
Ability to facilitate focus group discussions on growing of the grass	2.61 (0.600)	2.44 (0.564)	0.443	6
Ability to guide through the cultural practices such as weeding	2.61 (0.556)	2.53 (0.520)	0.208	7

Note: MWDS= Mean weighted discrepancy score.

Source: Field survey, 2022

grassland intensification through the cultivation of Napier grass for pastoralists. Means of the variable (the

importance of the tasks) were above the cut-off point of two, suggesting that a high importance is attached to the responsibilities performed by the practitioners. By their ranking, they showed that premium is placed on: Sharing information through extension methods ($mean = 2.85 \pm 0.426$), Sharing information through technology transfer ($mean = 2.84 \pm 0.372$), and Effectively communicating with pastoralists ($mean = 2.74 \pm 0.470$). These findings indicate that the mediums used to share and communicate information about Napier grass cultivation are crucial for extension practitioners to perform their task of information dissemination and provision of extension services effectively to the pastoralists. It was similarly found that agricultural outreach aims at propagating and disseminating innovation and information to beneficiaries, as this will enhance farmers' technical efficiency (Sennuga *et al.*, 2020). Ultimately, agricultural extension, in turn, will result in value-added production and increased economic returns. Furthermore, it was reported that technical and communication skills are paramount for advancing agricultural technology dissemination (Petros *et al.*, 2018).

Competency of Agricultural Extension Practitioners on Grassland Intensification

Results highlighting the competency of the extension practitioners further indicated the ability of extension practitioners to disseminate practices for Napier grass cultivation among pastoralists. These findings indicate the high competence of the practitioners to perform the mentioned tasks, including the ability to share information on extension methods ($mean = 2.66 \pm 0.477$), the ability to share information on technology transfer ($mean = 2.55 \pm 0.499$), and the ability to guide through the cultural practices such as weeding ($mean = 2.53 \pm 0.520$). These competencies, as indicated, present their areas of existing strength. Based on previous findings, the efficiency of extension educators can be determined by their ability to design and deliver programs (Manoher and Pooja, 2019). Consequently, it is expected that these competency areas will enhance their performance, enabling them to offer effective advisory services and roles to pastoralists for a positive change of attitude, improved knowledge, and the adoption of Napier grass cultivation.

The highest-ranking professional competencies identified were "the ability to speak the language of the pastoralists" (MWDS = 1.243), "the ability to communicate effectively with the pastoralists" (MWDS = 0.863), and "the ability to share information on technology transfer" (MWDS = 0.824). The communication barrier appears to be the leading challenge that inhibits

extension practitioners from effectively promoting the cultivation of Napier grass for feeding cattle. This is not surprising, as the main extension organization, the Agricultural Development Projects (ADP), is owned and managed by state governments. Thus, most of the workers, including the extension agents, are natives of their respective states. On the other hand, the pastoralists are mainly migrants from the dry regions of the north, who largely speak and understand Fulfulde and Hausa languages. This presents a significant challenge for agricultural extension organizations, as the ability to communicate effectively with pastoralists ($mean = 2.74 \pm 0.470$) is an integral part of measuring competency. It was previously noted that farmers and extension agents better appreciate concepts when communicated in local languages (AFAAS, 2017). Therefore, effective extension service is largely dependent on the professional competency of the agents who are entrusted with capacity building for farmers (Ashraf *et al.*, 2019).

Test of Hypothesis

H1. Socio-economic factors do significantly influence the competency of extension practitioners. The result from the regression analysis shows that some socio-economic factors significantly influenced the competencies of extension practitioners ($R^2 = 0.297$, $F = 7.236$, $p < 0.01$). Thus, the null hypothesis is rejected while the alternative hypothesis is accepted. A direct, positive, and significant relationship exists between the educational qualification ($\beta = 0.099$, $p < 0.01$) and the competency of the extension workers. This means that an improvement in the extension workers' level of education will result in a rise in their competency in Napier grass cultivation and management practices by 0.099. This is expected given that an augmentation in educational qualification will boost knowledge and competency, allowing practitioners to better appreciate the benefits of Napier grass cultivation in feeding cattle. Education is known to increase knowledge levels and innovativeness. The age ($\beta = -0.011$, $p < 0.05$) of the practitioners was negatively significant to their competency, meaning that the relationship between age and their competency level is indirect. Hence, an increase in the extension practitioners' age (in years) would result in a marginal decrease in their competency in Napier grass cultivation and management practices by 0.011. This result is contrary to expectations as it is assumed that productivity and competence should increase with age. However, research evidence has shown that productivity can sometimes decrease with age as diminishing returns set in. Even though the respondents in this study were in their economically active age

Table 5: Factors Influencing the Capability of Extension Practitioners

Capability of Extension Practitioners	Coef.	Std. Err.	t-stat.	P> t
(Constant)	1.807	0.338	5.347	0.000
Age	-0.011*	0.005	-2.194	0.029
Education qualification	0.099**	0.035	2.832	0.005
Area of specialization	-0.014	0.022	-0.656	0.512
Years of experience	-0.003	0.004	-0.660	0.510
Membership of the professional association	0.042	0.055	0.769	0.443
Awareness of the importance of Napier grass in feeding cattle	-0.011	0.007	-1.512	0.132
Level of ICT	0.078	0.052	1.490	0.138
Knowledge of Napier grass cultivation	0.210**	0.064	3.273	0.001
R Square = 0.297			Adj. R Square = 0.256	
Std. Error of the Estimate = 0.33763			F stat. = 7.236	
P = 0.000				

**Significant at 1%; *Significant at 5%

Source: Field survey, 2022

range (Table 1), the contrast in the relationship between age and competence suggests that their ages may not be a measure of their competence. Age is connected to creativity, and indeed, the age of an individual is an indication of how they react to life challenges. Thus, it means that the older extension practitioners in this study might not be as competent as the younger ones.

H2: Knowledge does not significantly influence the competency of extension practitioners In Table 05, results showed that knowledge of the cultivation of Napier grass as feed for cattle ($\beta = 0.210, p < 0.01$) had a significant influence on the competency of extension practitioners, and therefore the hypothesis was rejected. This implies that knowledge of the practitioners will increase the capability and effectiveness of extension practitioners by 0.210 units. This aligns with the philosophy that knowledge is a prerequisite for the acceptance of innovation, policies, and concepts, while the perspectives of practitioners are usually influenced by their attitudes and understanding. Furthermore, the depth of knowledge and various dimensions of attitude greatly enhance an individual's performance in particular circumstances. Consequently, the positive relationship between competency and knowledge of extension practitioners suggests that in-service training of the extension practitioners could improve their competency to disseminate Napier grass cultivation among pastoralists. This also implies that extension institutions can engage in programs geared towards empowering the pastoralists for the cultivation of

Napier grass for feeding cattle, while policymakers can infuse relevant ideas to foster Napier cultivation.

CONCLUSION

The study provided an understanding of the competency of extension practitioners in promoting grassland intensification and Napier grass cultivation for pastoralists. Extension practitioners possessed low knowledge of Napier grass cultivation as a source of feed for cattle. The highest-ranked professional competencies were the ability to speak the language of the pastoralists, the ability to communicate effectively with pastoralists, and their ability to share information on technology transfer. The study further established that age, educational qualification, and knowledge of Napier grass as feed for cattle significantly impact the extension practitioners' competence to promote the cultivation of Napier grass.

The study recommended that government at all levels and other concerned private agencies should design relevant capacity-building programs to increase the awareness and knowledge of Napier grass cultivation among extension practitioners. Such programs should prioritize training sessions for extension practitioners, with a special focus on developing their ability to speak the language of the pastoralists to enable effective communication. The findings from this study have called for future research to investigate practitioners' inability to speak the language of pastoralists despite close working relationships and to suggest probable solutions

to build practitioners' competence in this regard. In addition, it would be necessary to conduct comparative research exploring similarities or differences in the competency of practitioners if their respondents were crop farmers. This would help address policy issues associated with Napier cultivation as an alternative source of feed for cattle.

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