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FACTORS INFLUENCING INPUT DEALERS' PERFORMANCE OF EXTENSION ROLES TO FARMERS IN YOBE STATE OF NIGERIA

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ABSTRACT

The study examined factors influencing input dealers' performance of extension role to farmers in Yobe State of Nigeria. Multi-stage sampling procedure was adopted in selecting 86 input dealers. Primary data were collected from them on socioeconomic characteristics, performance of extension roles, sources of agricultural knowledge and training using a structured questionnaire. Descriptive and inferential statistics were used to analyze data. Results showed that input dealers were mostly males (98.8%); young and agile with mean age of 41.8 years, 44.2% had tertiary education but 86.0% had no agricultural qualifications. Although input dealers' performance of extension roles was high (55.8%), they had low training (68.6%) to boost performance. Significant relationships existed between performance of extension roles and type of trade ($\chi^2 = 25.135$, $p < 0.05$) and membership of input dealers association ($\chi^2 = 12.550$, $p < 0.05$). Also, a significant positive correlation existed between performance of extension roles and training received ($r = 0.33$, $p < 0.05$) and sources of agricultural knowledge ($r = 0.25$, $p < 0.05$). It was recommended that input dealers should be strengthened to perform extension roles by enhancing their training and access to sources of agricultural knowledge via institutionalized research, extension, input companies and input dealers' linkage.

Key words: factors, input dealers, performance, extension role

INTRODUCTION

The primary role of Nigerian agricultural extension service, which is to build the capacity of farmers to boost agricultural productivity, has currently dwindled. The activities of the main agricultural extension organ of the governments, that is, the Agricultural Development Projects (ADPs) have been limited as a result of inadequate personnel, high extension-farmer ratio, irregular payment of salaries, poor provision of logistics and staff training (Agbamu and Okagbare, 2005; Ogunlade *et al.*, 2012; Haruna and Abdullahi, 2013). Evidently, effective coverage of the smallholder farmers with diverse crops and livestock enterprises is an enormous task for the public extension considering the current challenges. However, the pluralistic extension delivery system comprising the activities of other actors such as farmer organizations, non-governmental organizations, input companies/ dealers, produce-buying companies and private extension providers (Anderson, 2008) need to be exploited. Meanwhile, lack of national extension policy frame work in Nigeria has hindered full utilisation of potentials of aforementioned actors in providing advisory services to smallholder farmers (Madukwe, 2008). While peculiar nature of each of the actors determines the form of advisory service render to the smallholder farmers, the significance of inputs to any agricultural enterprise put input dealers at the forefront. It is therefore essential to strengthen the advisory role being performed by input dealers towards bridging the shortage of public agricultural extension services in the country.

Owoade and Akinwale (2019) reported that poultry input dealers provide extension services to commercial poultry farmers in Ogbomoso Agricultural Zone of Oyo State in Nigeria. Input dealers are located close to farmers than Village Extension Agents (VEAs), so they sell inputs to farmers, provide advice on use and act as opinion leaders (Ganiger, 2012). In Nigeria, input dealers are regarded as strategic partners in getting rid of corruption associated with Federal and State governments' input procurement and distribution (Coker, 2014). Therefore, input dealers are strategically placed to advise farmers on the use of inputs for enhanced productivity. This is expected as advisory services are delivered to farmers as embedded services (Swanson and Rajalahti, 2010). Moreover, the strategically positioned input dealers are always in contacts with farmers in their localities to advise them. If the input dealers fail in this responsibility farmers will use most inputs wrongly. Inappropriate use of chemicals by farmers has caused physical and chemical degradation of the soil, water pollution and food contamination (Argade *et al.,* 2015). It thus poses danger to farmers, consumers and the environment.

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The primary goal of input distribution is profit making but sustenance of sales depends on farmers' favourable evaluation of inputs after use. Hence, educating and guiding farmers offer two-fold advantage to both input dealers and farmers as input dealers can sell more inputs while farmers apply knowledge and achieve growth in production. Studies have revealed that some countries exploited the strategic positions occupied by input dealers to create initiatives for capacity building (Ganiger, 2012). In such countries, input dealers were trained to capacitate them for better performance of advisory roles since most of them did not possess qualifications and skills of public extension agents (Ganiger, 2012). This implies that input dealers need to acquire technical and communication skills like the extension agents to effectively disseminate agricultural information (Tsebee, 2017). A study on the input dealers' performance of extension roles or factors influencing the performance of extension roles is yet to be documented in Yobe State to the best of our knowledge. Factors such as low literacy rate and high poverty index (UNESCO, 2012; OPHI Country Briefing, 2017) and inadequate public extension service in Yobe State prove the timeliness of this research. The general objective of the study was to identify the factors influencing input dealers' performance of extension roles in Yobe State. The specific objectives were to: describe the socioeconomic characteristics of input dealers in the study area; ascertain the extent of performance of extension roles by input dealers; identify the input dealers' sources of agricultural knowledge; and examine the trainings that the input dealers undergo to enhance their capacity to perform extension roles. The following hypotheses stated in null forms were tested in this study: 1). There is no significant relationship between socioeconomic characteristics and performance of extension roles; 2). There is no significant relationship between sources of knowledge and performance of extension roles; and 3) There is no significant relationship between training and performance of extension roles.

MATERIALS AND METHODS

The study was carried out in Yobe State which is one of the northeastern states in Nigeria. The state, which was created from the western part of Borno in 1991, is bounded on the north by Niger Republic and on the east by Borno State. Also, it borders Gombe State to the southwest, Bauchi to the west and Jigawa State to the northwest. Its vegetation is predominantly Sudan Savannah with characteristic scattered acacia trees. There is also a fringe of Sahel Savannah in the far north with sandy soil type and grown over by thorn scrub. Yobe land consists of plain drained seasonally by Komadugu River and its tributaries in the north and by the Gongola River in the south. The State lies between latitude 12° 00′ N and longitude 11° 30′ E, covering a land area of about 45,502 square kilometers (Galadima, 2014). The 2016 population estimate of the State was put at 3,294,137 people (NBS, 2017). Kanuri people are the largest ethnic group in the state and hausa language is widely spoken. Damaturu is the state capital, and Nguru, Potiskum, and Gashua are sizeable market towns (Encyclopedia Britanica, 2020). As an agrarian state where agricultural production remains the largest source of employment and income, primary crops such as rice, sorghum, millet, peanuts (groundnuts), cowpeas, corn (maize), sesame, and cotton are cultivated. Livestock such as cattle, sheep and goats are also herded by pastoralists.

The population for this study was all input dealers in Yobe State Nigeria. Multi-stage sampling procedure was adopted in selecting 86 input dealers. First stage involved purposive selection of four major towns which are Damaturu, Potiskum, Gashua and Nguru known to have big markets and high presence of input dealers. List of input dealers was compiled from each selected town by enumerators who traversed every nook and cranny using snowball technique. On four separate lists, Damaturu had 25 inputs dealers; Potiskum had 33 input dealers while Gashua and Nguru had 30 and 20 input dealers respectively. In the second stage, 80% of the input dealers were selected from the list using simple random sampling. This procedure led to the selection of 20, 26, 24 and 16 input dealers from Damaturu, Potiskum, Gashua and Nguru respectively. A total of 86 input dealers were finally selected as respondents.

A structured questionnaire was used to collect primary data for the study. Performance of extension roles was measured by asking the input dealers to indicate the extent to which they perform various extension roles on a three-point rating scale of 'Always', 'Occasionally' and 'Never' with scores of 2, 1 and 0 respectively. The critical value was calculated as $2 + 1 + 0 / 3 = 1$; therefore, any value of performance of extension role ≥ 1 implies high performance while any value of performance of extension role < 1 implies low performance. Sources of agricultural knowledge was measured by asking the input dealers to indicate various sources of agricultural knowledge they are exposed to in which each source attracts score of 1 point and total was calculated. Training received was measured by asking the input dealers to indicate the extent to which they were trained by each actor of Agricultural Knowledge System on five-point rating scale of 'monthly', 'every three months', 'twice a year', 'once a year', and' no training' with scores of 4, 3, 2, 1 and 0 respectively. Critical value was calculated as $4 + 3 + 2 + 1 + 0 / 5 = 2$; hence, any value of training ≥ 2 implies high training while any value of training < 2 implies low training. Data

were analyzed using descriptive and inferential statistical tools. Descriptive tools used are means, frequency counts and percentages while inferential tools used are Pearson Product Moment Correlation and Chi-square at the 0.05 level probability.

RESULTS AND DISCUSSION

Socioeconomic Characteristics of Input Dealers

Results in Table 1 show that 30.0% of input dealers were within the age range of 31 and 40 years while 31.4% were within 41 and 50 years. The mean age was 41.8 years. This implies that the input dealers were mainly middle-aged people, hence they could contribute significantly to agricultural development through input distribution. This finding is in line with the finding of (Ganiger, 2012) who reported that input dealers were mostly individuals in their middle age. The results further show that majority (98.8%) were male. The business of input distribution was dominated by male sex. The finding is in consonance with the finding of Etyang *et al.* (2015) who stated that more male input dealers than females were involved in extension role. Furthermore, the table shows that 44.2 % of the input dealers had tertiary education. This finding is in consonance with Adam (2018) who found that 20.8% agro-input dealers in northwest Nigeria attained tertiary education. It is expected that with their level of education they should be able to provide information to farmers. The table also shows that majority (86.0 %) of input dealers did not have agricultural education. This implies that they lack theoretical background knowledge in agriculture. The finding agrees with that of Argade *et al.* (2015) who found that most male input dealers did not possess agricultural qualification. Table 1 reveals that 32.2 % of input dealers had between 1 and 10 years of experience as input dealers and similarly 32.2 % had between 11 and 20 years of experience. The mean year of experience was 15.9 years. This implies that inputs dealers had a long period of experience and would be familiar with customers' input acquisition and information seeking behaviour. Result in Table 1 on membership of input dealers association shows that majority (60.5%) of input dealers belonged to input dealers association. The implication is that membership will present robust platform to capacitate input dealers for enhanced performance of extension functions. Table 1 further reveals that majority (84.9%) of input dealers owned farms as another source of income. Result on types of business reveals that 48.8% was involved in retail business while 47.7 % had a mix of retail and wholesale business. Furthermore, result on types of inputs supplied by the input dealers reveal that 61.0, 73 and 78% of input dealers were involved in the sales of seeds, fertilizers and pesticides respectively. Only 37.2% of input dealers were involved in selling machines and equipment.

Table 1: Distribution of socio-economic characteristics of input dealers

Variable		Frequency	%
Age (years)	21-30	13	15.1
	31-40	30	34.9
	41-50	27	31.4
	51-60	11	12.8
	61-70	05	5.8
	Mean	41.8	
Sex	Male	85	98.8
	Female	01	1.2
	Level of education		
	No formal education	17	19.8
	Primary	05	5.8
	Secondary	26	30.2
	Tertiary	38	44.2
	Area of specialization		
	Agriculture	12	14.0
	Non-agriculture	74	86.0
Years of experience as input dealers	1-10	32	37.2
	11-20	32	37.2
	21-30	18	20.9
	31- 40	03	3.5
	41-50	01	1.2
	Mean	15.9	
Membership of input dealers association	Members	52	60.5
	Non-members	34	39.5
Farm ownership	Owned farm	73	84.9
	Did not own farm	13	15.1
Types of trade	Retail	42	48.8
	Retail and wholesale	41	47.7
	Wholesale	03	3.5
*Types of inputs	Seeds	61	70.9
	Fertilizers	73	84.9
	Pesticides	78	90.7
	Machines and equipment	32	37.2

Source: Field Survey, 2020. * Multiple responses

Input Dealers' Performance of Extension Roles

Results in Table 2 show that performance of extension roles was high for selling of inputs ranked 1st ($\bar{x}$ = 1.55) and providing information on safe use of chemicals ranked 2nd ($\bar{x}$ = 1.40). Also, it was high for provision of information on rate of application of chemicals ranked 3rd ($\bar{x}$ = 1.36) as well as provision of information on choice of fertilizers ranked 4th ($\bar{x}$ = 1.29). Performance of extension role of linking farmers to sources of credits ($\bar{x}$ = 0.49), linking farmers to extension agents ($\bar{x}$ = 0.52) and providing information on machines and equipment ($\bar{x}$ = 0.72) was low.

Distribution of Input Dealers according to Performance of Extension Roles

Table 3 shows that the performance of extension roles of more than half (55.8%) of the input dealers was high. This implies that many input dealers were highly involved in extension duties. Therefore, there is high prospect of improved performance of extension roles by input dealers to complement the effort of public extension, which currently is inadequate and inefficient. This finding is supported by the finding of DAESI (2019) who reported that input dealers were the main providers of information for farmers.

Table 2: Input dealers' performance of extension role

S/N	Activities	Mean ($\bar{x}$)	Std. dev.	Rank	Remarks
1.	Selling inputs	1.55	0.50	1st	High performance
2.	Fertilizer related: Providing information on choice of fertilizers	1.29	0.61	4th	High performance
3.	Provide information on application rate	1.20	0.65	5th	High performance
4.	Chemical related (e.g., pesticide, herbicides): Providing information on choice of chemicals	1.20	0.55	6th	High performance
5.	Providing information on rate of application	1.36	0.59	3rd	High performance
6.	Providing information on safe use of chemicals	1.40	0.67	2nd	High performance
7.	Seed related: Providing information on variety of seeds	1.04	0.65	7th	High performance
8.	Providing information on seed planting and spacing	0.77	0.71	9th	Low performance
9.	Providing information on machines and equipment	0.72	0.70	10th	Low performance
10.	Selling to farmers on credit	0.78	0.62	8th	Low performance
11.	Linking farmers to sources of credit	0.49	0.63	12th	Low performance
12.	Linking farmers to extension agents	0.52	0.61	11th	Low performance

Source: Field Survey, 2020. Level of input dealers' performance of extension role "High performance; $\bar{x} \geq 1.0$", "Low performance; $\bar{x} < 1.0$"

Table 3: Distribution of input dealers according to performance of extension

Performance of extension role	Frequency	Percentage
High performance	48	55.8
Low performance	38	44.2
Total	86	
Mean = 12.30		

Source: Field Survey, 2020

Input Dealers' Sources of Agricultural Knowledge

Results on input dealers' sources of agricultural knowledge show that the source of agricultural knowledge of majority (70.9%) was farm experience (Table 4). Furthermore, 59.3%, 55.8% and 52.3% had radio, input companies and the internet as their sources of agricultural knowledge respectively. Half (50.0%) of the input dealers had extension agents as their sources of agricultural knowledge. This implies that the input dealers obtain agricultural knowledge from different sources. The reliance of input dealers on different sources of agricultural knowledge will more likely enhance their capacity to perform extension role to farmers.

Table 4: Input dealers' sources of agricultural knowledge

S/N	*Sources of agricultural knowledge	Frequency	Percentage
1.	Agricultural books	27	31.4
2.	Extension agents	43	50.0
3.	Radio	51	59.3
4.	Television	35	40.7
5.	Farm magazine	20	23.3
6.	Internet	45	52.3
7.	Farm experience	61	70.9
8.	Input companies	48	55.8
9.	Other input dealers	37	43.0
10.	Training/workshop	29	33.7
11.	Non-governmental organizations	02	2.3

Source: Field Survey, 2020. * Multiple responses

Training Received by the Input Dealers

Results on training received by the input dealers in Table 5 from various actors of Agricultural Knowledge System show that input dealers organisation ranked 1st ($\bar{x}$ = 0.81) as provider of training to input dealers. Chemical companies ranked 2nd ($\bar{x}$ = 0.72) and extension agency ranked 3rd ($\bar{x}$ = 0.61) as trainers. Given that the mean of training from each of the actors was less than 2.0, it implies that training received was generally low.

Distribution of Input Dealers on Training Received

Distribution of input dealers based on training received shows that the majority (68.6%) of them had low training (Table 6). This implies that these input dealers would not be able to perform extension roles effectively with low training. This finding is in agreement with DAESI (2019) that most input dealers did not have formal training on selection and use of agro-inputs.

Test of Relationship between Independent Variables and Performance of Extension Role

Table 7 shows that a significant positive correlation existed between performance of extension roles and training received ($r = 0.33$, $p < 0.05$). This implies that the more the input dealers are trained in agriculture the better their performance. This finding agrees with Leelavani (2011) who reported a positive relationship between training received and information output behaviour of input dealers. Also, a significant positive correlation existed between performance of extension roles and sources of agricultural knowledge ($r = 0.25$, $p < 0.05$). So, the more the sources of knowledge used by input dealers the more they performed extension roles.

Table 5: Training received by the input dealers

S/N	Activities	Mean ($\bar{x}$)	Std. dev.	Rank	Remarks
1.	Seed companies	0.59	0.93	4th	Low training
2.	Chemical companies	0.72	1.09	2nd	Low training
3.	Extension agency (ADP)	0.61	1.04	3rd	Low training
4.	Research institute	0.34	0.79	5th	Low training
5.	Non-governmental organization	0.08	0.41	6th	Low training
6.	Input dealers' organization	0.81	1.06	1st	Low training

Source: Field Survey, 2020. Level of input dealers' training "High training; $\bar{x} \geq 2.0$", "Low training; $\bar{x} < 2.0$"

Table 6: Distribution of input dealers based on level of training received

Training	Frequency	Percentage
High training	27	31.4
Low training	59	68.6
Total	86	
Mean = 4.04		

Source: Field Survey, 2020

Table 7: Correlation analysis of some variables and performance of extension role

Variables	r-value	p-value	Decision	Remark
Training received	0.33	0.00*	S	Reject
Knowledge sources	0.25	0.02*	S	Reject
Age	0.03	0.82	NS	Accept
Years of experience as inputs supplier	–0.01	0.94	NS	Accept

Source: Data Analysis, 2020. *Significant at $p < 0.05$ (2- tailed). S - significant, NS - not significant

Table 8: Chi-square analysis of some variables and performance of extension role

Variables	$\chi 2$	df	p	Decision	Remark
Level of educ.	9.162	4	0.057	NS	Accept
Type of trade	25.135	2	0.000*	S	Reject
Membership of input dealers assoc.	12.550	1	0.000*	S	Reject

Source: Data Analysis, 2020. *Significant at $p < 0.05$ (2- tailed). S - significant, NS - not significant

Furthermore, Chi-square (χ^2) analysis in Table 8 shows that there was a significant relationship between type of trade ($\chi^2 = 25.135$, $p < 0.05$) and performance of extension role. This means that type of trade has influence on performance of extension roles. There existed a significant relationship between the input dealers' membership of input dealers association ($\chi^2 = 12.550$, $p < 0.05$) and performance of extension roles. This implies that membership of association influences performance of extension roles.

CONCLUSION/RECOMMENDATIONS

The study concluded that input dealers are mostly males; middle aged, educated but had no agricultural qualifications. They had substantial years of experience as input dealers and were also farm owners. Although, input dealers' performance of extension roles was high but they had low training to boost performance. They had access to multiple sources of agricultural knowledge of which farm experience was primary. Training, sources of agricultural knowledge, type of trade and membership of input dealers association influenced performance of extension roles. Therefore, input dealers should be strengthened to perform extension role by enhancing training and access to multiple sources of agricultural knowledge via institutionalized research, extension, input companies and input dealers' linkage.

REFERENCES

Adam A.O. (2018). Role of men and women in agro-input business in Northwest Nigeria. *J. Agric. Ext.,* **22 (1),** 15-21

Agbamu J.U. and Okagbare G.O. (2005). Institutional strengthening of Ogun State ADP upon expiration of World Bank assistance. In: Orheruata A.M. *et al.* (eds.), *Agricultural Rebirth for Improved Production in Nigeria* (pp. 322-325). Proc. 39th Ann. Conf. Agric. Soc. Nig., University of Benin, 9-13 Oct., Benin City

Anderson J.R. (2008). *Innovating through Science and Technology*. A Background Paper of the WDR, Agric. & Rural Dev. Dept, World Bank, Washington, DC

Argade S., Sarkar A. and Mishra S. (2015). Gender based involvement of agro-input dealers in extension activities in Maharashtra State, India. *Int. J. Agric. Sci.,* **7 (3),** 470-473

Coker A.A. (2014). Determinants of agro-inputs redemption under the electronic wallet initiative in Nigeria. *Agro-Science,* **13 (2),** 24-36

DAESI (2019). *Capacity Development of Agricultural Input Dealers in India through the DAESI Programme.* Good Practice Notes, **2.** Available at www.aesanetwork.org

Encyclopedia Britannica (2020). Yobe State, Nigeria. www.britannica.com/place/Yobe

Etyang T.B., Okello J.J., Zingore S., *et al.* (2015). Exploring the relevance of agro-input dealers in disseminating and communicating of soil fertility management knowledge: The case of Siaya and Trans Nzoia counties. *Agric. Inform. Worldwide,* **6,** 82-95

Galadima M. (2014). Constraints on farmers access to agricultural information delivery: A survey of rural farmers in Yobe State, Nigeria. *IOSR J. Agric. Vet. Sci.,* **7 (9),** 18-22

Ganiger S. (2012). *Knowledge, Perception and Role Performance of Input Dealers in Agro Advisory Services in Northern Dry Zone of Karnataka*. MSc Thesis, Dept. of Agric. Extension, Acharya NG Ranga Agricultural University, Hyderrabad, India. Available at https://krishikosh.egranth.ac.in/handle/1/66814

Haruna S.K. and Abdullahi Y.M.G. (2013). Training of public extension agents in Nigeria and the implications for government's agricultural transformation agenda. *J. Agric. Ext.,* **17 (2),** 98-104

Leelavani M. (2011). A study on communication behavior of input dealers in Guntur District of Andhra Pradesh. B.Sc. Thesis, Acharya NG Ranga Agricultural University, Hyderrabad, India, Available at http://krishikosh.egranth.ac.in/handle/1/66692

Madukwe M.C. (2008). *Practice without Policy: The Nigeria Agricultural Extension Service*. An Inaugural Lecture (pp. 5-12), University of Nigeria, 29 Apr.

NBS (2017). *Demographic Statistics Bulletin*. Available at https://africanopendata.org/dataset/demographic-statistics-bulletin-nigeria-2017

Ogunlade I., Atibioke O.A., Ladele A.A. and Adumadehin G.S. (2012). Capacity of agro-input dealers in advisory service delivery to maize farmers in Kwara State, Nigeria. *Int. Res. J. Agric. Sci. Soil Sci.,* **2 (10),** 426-443

OPHI Country Briefing (2017). Global Multidimensional Poverty Index (MPI) at a glance. Available online at www.dataforall.org

Owoade E.O. and Akinwale J.A. (2019). Poultry farmers' perception of extension services delivery through input providers in Ogbomoso Zone of Oyo State, Nigeria. *South Afr. J. Agric. Ext.,* **47 (1),** 36-44

Swanson B.E. and Rajalahti R. (2010). *Strengthening Agricultural Extension and Advisory Systems: Procedures for Assessing, Transforming and Evaluating Extension Systems*. The Int. Bank for Reconstr & Dev./The World Bank, Agric. & Rural Dev. Disc. Paper No. 44

Tsebee K.A. (2017). *Enduring Issues in Extension Communication for Rural Development in Nigeria*. Ibadan Nigeria: Prime Publ. & Educ. Serv., p. 89

UNESCO (2012). Reaching the 2015 Literacy Target: Delivering on the Promise. High Level International Round Table on Literacy, Action Plan Nigeria National Literacy Action Plan for 2012-2015UNESCO, Paris, 6-7 Sep., www.unesco.org