

EXTENSION AGENTS' MARKETING RELATED SERVICES: THE RELEVANCE TO POLICY AND TRAINING IN OSUN STATE, NIGERIA

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ABSTRACT

This study investigated the marketing related services provided to farmers by extension agents in Osun State, Nigeria. Data were collected from the extension agents in the services of Osun State Agricultural Development Projects, which is the government outfit to provide such services to farmers on one hand and their counterparts in the non-governmental organizations on the other hand. A validated questionnaire was administered to extension agents during the fortnightly training meeting. The data collected was summarized using frequency and percentages. The relationship between the dependent and independent variables were investigated using Spearman rank order correlation, Pearson Product Moment Correlation and regression analyses. Results of the study showed that the respondents had basic pre-service training in agricultural related field and are provided with motorcycle to ease their transportation problems. Extension Agents in turn provide selected marketing related services to farmers especially those perceived as legitimate. A significant correlation exists between performance of marketing related services and the perceived legitimacy of the services($r=0.54$). The number of marketing related services provided by extension agents significantly correlate with number of superior officers($r=0.6510$). The other variables that negatively correlates with number of marketing related services provided by the extension agents are, rank ($r = -0.578$), years of experience ($r=-0.321$) and annual income ($r = -0.335$). The study suggest that performance of the marketing related extension services be backed by adequate policy statements and be included in the extension agents training curriculum.

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1. INTRODUCTION

Effective and efficient marketing of agricultural products is an important aspect of agricultural development. This fact had in the past received the attention of governments in Nigeria. The government established a marketing board in the year 1965, to cater for farmers market needs. The marketing board was established to ensure a consistent availability of market to farmers and also to protect their interest even during the time of surplus. Both the farmers and the end users of their products have ready markets to cater for their needs. The marketing board precisely served to protect farmers and users of their products especially cacao, that was the most popular cash crop at the time. The marketing board was however scrapped without any replacement. Following this episode, the emphasis was on increasing food production. The basic assumption was that increased food production would both improve the nutritional status of the population and pave the way for rural development and the desired food sufficiency. Various successive programmes were either directed at agricultural production or targeted at rural development. Likewise, increased adoption of improved crops and consequent productivity had traditionally been the goal of agricultural extension. In order to further enhance the production of food and agro-industrial raw materials for consumptions and exportations, State Ministries of Agriculture established Agricultural Input Supply Units (AISU). This had in the recent past metamorphosed into input supply companies. The mandate of AISU in a way was to play some form of marketing roles by making inputs available to farmers every time at subsidized rates.

According to Narayanan (1991), the emphasis by national and international development agencies on production-oriented research and extension could be relevant, given the limited resources and the high priority assigned to meeting the food, agro-industrial and foreign exchange needs of development. However, FAO (1987) admitted that time and experience had shown that the lack of a well-functioning market can severely hinder the increase of agricultural production. And also those markets do not develop automatically.

The prevailing situation in rural Nigeria is that of reliance on free markets. This definitely impacts on the agricultural economy and the wellbeing of farmers that depend on the marketing situation and

capacity. Narayanan (1991) felt that the globalization of markets and increased competition are certainly a force for change and will continue to be a challenge for extension throughout the coming decades. FAO (2004) opined that improvement of marketing systems for both farm produce and inputs in developing countries and the emerging economies necessitates a strong private sector backed by appropriate policy frameworks and effective government support services. Such services can include provision of market information and advice to farmers by well equipped agricultural extension institution. This is an indication that extension has an important role to play if the market needs of farmers are to be met (Adedoyin, 2004).

2. A REVIEW OF AGRICULTURAL DEVELOPMENT, FARMING SYSTEMS AND AGRICULTURAL MARKETING

The fundamental objective of agricultural development should go beyond increased output to include increases in net per capita and family income (Johnson, 1998). Obviously, farmers could increase their incomes either by producing more or by marketing their products better and getting a higher price for their products (Schuh, 1987).

In Nigeria, farmers practice agriculture for two basic reasons, which underline the categorization into subsistence and commercial farming. Subsistence farmers produce for home consumption with the periodic surplus being sold at the open or any available market. The farm families also purchase small amounts of inputs, consumer goods and foodstuffs, which they do not grow. According to Elz (1987), the economy of this system is usually optimally organized to serve the individual family and production is often not efficient, because of the lack of specialization. In contrast, commercial farming is responsive to demand and is characterized by the division of labour and by specialization. Commercial farms depend on markets to sell their products and to provide inputs necessary to produce marketable surplus. The commercial farmers usually record higher productivity than the subsistence farmers (Elz, 1987).

According to Abbott (1993), the marketing of agricultural products begins on the farm with the planning of production to meet specific demands and market prospects. It is completed with the sale of the fresh or processed product to consumers, or to manufacturers in the

case of raw materials for industries. In his own submission, Nyako (2001) declared that Nigerian farmers could not find good markets, which would facilitate more income that would lead to the eradication of poverty and attainment of acceptable standard for living. In fact, farmers are squeezed both ways in terms of high cost of inputs and uncompetitive price for outputs. Efficient agricultural marketing obviously has a significant role to play in enabling and encouraging increased productivity by farmers (Johnson 1998; Adedoyin 2004). The efficiency of the agricultural sector can be improved through the marketing system by providing farmers with information about products and crops, which is advantageous for them to produce. The marketing system also provides the improved inputs and technologies necessary for increased productivity in agriculture.

3. AN OVERVIEW OF AGRICULTURAL MARKETING EXTENSION

Marketing extension according to Elbert (1998) is complementary to production, research, extension and other aspects of agricultural development. The interdependence of these functions is heightened in developing countries where the economy is in transition from subsistence to market-oriented production (Narayanan, 1991). Marketing extension is pertinent to this development because it can assist farmers to decide on the type of crops to produce, possible sources of inputs and adequate post-harvest practices to adopt. Also, it can advice on the quality and quantity of goods to produce as well as better mode of sale of the outputs. All of these are in pursuance of the main goal of increasing farm returns. Agricultural extension marketing therefore has a different and well-defined message to convey as a complement to the general extension, which relates mostly to production and increased output. The planning and implementation of marketing extension must meet specific needs and objectives as an integral part of existing information system (Narayanan, 1991).

In Nigeria, agricultural marketing extension was not separated from the general extension delivery system. The increased production of goods in efficient way was mostly emphasized in extension agents' messages. The agents usually give some marketing related information such as inputs required and the possible sources. However, experience has shown that extension services relating to marketing is very important

and should be given the deserved attention by respective stakeholders, especially policy makers, extension institutions and the agents. Since the agricultural marketing related extension services was not separated from general extension in Nigeria, it became expedient to investigate and establish the agricultural extension agents' activities in promoting a profitable marketing support to farmers with the sole aim of highlighting the policy and training implications of the findings to extension. According to Ajayi, (2004), availability of markets for products was a condition stated by farmers as crucial to their adoption of improved practices and their willingness to pay for extension services. These related findings justified the study of marketing activities of extension agents. Following from the above, the objectives of the study were to:

- describe selected characteristics of agricultural extension agents;
- identify the marketing related services provided to farmers' by extension agents;
- investigate the relationships between selected extension agents' characteristics and their provision of marketing related services; and
- analyze the policy and training implications of the findings.

4. HYPOTHESES OF THE STUDY

The null hypotheses set for this study are thus; H₀₁ "there is no significant relationship between the perceived legitimacy of the selected marketing related services and the performance of the respective marketing related services by the extension agents. "H₀₂ "there is no significant relationship between extension agents characteristics and the provision of marketing related services by extension agents".

5. METHODOLOGY

5.1 The study area

Osun State in South western Nigeria was the area studied. In 2003, the state had an estimated population of 3,245,703 (NPC, 1998). Agriculture is the most popular traditional occupation in the state. The tropical

nature of the climate supports the growth of food and tree crops. The food crops include yam, cassava, maize, rice, cowpea and vegetables. The tree crops grown mostly for cash are cacao, kola nut and oil palm.

The agricultural extension services in the state are provided by Osun State Agricultural Development (OSADEP), which employs the training, and visit systems. The state government bears the total cost of extension services. Some non-governmental organizations such as Oshogbo Diocesan Rural Development programme (RUDEP) also complement government efforts by providing extension services to selected farmers. The state is demarcated into three agricultural zones for effective extension administration. The zone has seven, ten and thirteen blocks respectively, which corresponds with the Local Government Areas.

5.2 Sample selection

The extension agents in the state constitute the population studied. Primary data were collected from all the extension agents in the services of Osun State Agricultural Development Programmes (OSADEP) during their fortnightly training meetings and the four animateur employed by RUDEP. The animateurs also perform extension roles. Fifty-nine questionnaires were administered. Out of these, a total of fifty-six was returned and for analysis.

5.3 Measurement of variables

Independent variables such as age, sex, marital status, years of formal education, years of experience, number of villages covered, the number of superiors, number of subordinate, position/rank/status, field of specialization, annual income and means of transport were all studied. The absolute values were recorded and analysed. Mean Problem Index was calculated to attach weight to the problems for ranking. Extension agents rated each of the problems listed as follows: Very Serious problem (5), Serious Problem (4), Just a little problem (3), Not a serious problem (2) and Not a problem at all (1). The mean of the aggregate score accrued to each problem as rated by the extension agents was calculated and used as the Mean Problem Index to rank the respective problems.

The dependent variable is marketing related services and the number of such services provided by an extension agent was used as a measure to quantify the variable.

5.4 Statistical tools

Descriptive statistics such as frequency count; means and standard deviation were used to summarize the data. The hypotheses were tested with Spearman rank order correlation and Pearson Product Moment Correlation (PPMC) for hypothesis one and two respectively. The magnitude of changes in marketing related extension services accounted for by the variables was tested with regression analysis. The Spearman rank order correlation compares the ranking on two sets of scores by taking the differences of ranks. The value will be +1.0 if the ranking are in perfect agreement and -1.0 if in perfect disagreement. Spearman rank order correlation is adequate in comparing the ranking of scores on legitimacy and performance of listed marketing roles by extension agents, which are nonparametric measurements. PPMC coefficient indexed two properties of a relationship, namely magnitude and direction. The magnitude of the correlation coefficient depends on the range of the variability in the variables considered. This is adequate in this study because the dependent and independent variables being considered are scores and not ranked. Hence, Spearman rank order correlation was used when variables are ranked while PPMC was used for variables that are scored and having weights attached to them.

6. RESULTS AND DISCUSSIONS

6.1 Demographic characteristics of the respondents

The results presented in Table 1 shows that 14.3 percent are less than forty years of age. In addition, 58.9 percent are in the age range of 41 – 50 years. Only 26.8 percent were above 51 years. The mean age of the respondents was 46.73 years with a standard deviation of 5.74. The results show that the majority of the respondents were above forty years, which is an active age in the state civil service.

Table 1: Frequency distribution of extension agents by selected personal and socio-economic characteristics (N = 56)

Selected characteristic	Frequency	Percentage	Statistics
Age (Years)			
<40	8	14.3	$\bar{x}=46.73$
41 – 50	33	58.9	$\sigma =5.74$
>51	15	26.8	min = 28 max = 57
Sex			
Male	54	96.4	
Female	2	3.6	
Marital status			
Single	1	1.8	
Married	55	98.2	
Educational Qualification			
Ordinary National Diploma	15	26.8	
Higher National Diploma	32	57.1	
Bachelors degree	8	14.3	
Postgraduate diploma	1	1.8	
Area of specialization			
General agriculture	39	69.6	
Agronomy /Plant Science	3	5.4	
Animal Science	4	7.1	
Agricultural Economics	2	3.6	
Agricultural Extension	8	14.3	
Year s of work experience			
<10	5	8.9	$\bar{X} = 19.23$
11 – 20	30	53.6	$\sigma =7.77$
21 – 30	15	26.8	Min = 4
> 31	6	10.7	Max = 33
Number of farmers responsible to			
< 1000	29	51.8	$\bar{X} =1,532.68$
1000 – 2000	19	33.9	$\sigma = 1,393.58$
2000 – 3000	4	7.2	min = 500
> 3000	4	7.2	max = 8,000
Number of villages covered			
<15	24	42.9	$\bar{X}= 22.61$
16 – 30	22	39.2	$\sigma =19.02$
35 – 60	5	9.0	min = 2
> 60	5	9.0	max = 80
Average distance covered per full working day (Km)			
5 – 20	27	48.2	$\bar{X}=30.91$
21 – 40	17	30.4	$\sigma =29.11$
41 – 80	9	16.0	min = 5km
81- 85	3	5.4	max = 85km

Selected characteristic	Frequency	Percentage	Statistics
Number of extension agents supervised			
None	41	73.2	X=3.53 σ =2.99 min = 1 max = 10
1 – 5	12	21.4	
6 – 10	3	5.4	
<i>Number of supervising agents(superior responsible to</i>			
1 – 3	45	80.4	X=2.64 σ =1.45 min = 1 max = 9
4 – 6	10	17.8	
7 – 9	1	1.8	
Ownership of personal farm			
<i>Owens a farm</i>	35	62.5	
Does not own a farm	21	37.5	
Annual Income from Farm			
< - 10,000	16	28.6	X= 49822.86 σ = 7379.00 min = 2,000 max = 300,000
10,001 – 20,000	5	8.8	
20,001 – 30,000	3	5.4	
40,001 – 50,000	3	5.4	
50,001 and above	8	14.3	
No farm	21	37.5	
<i>Annual Salary/Income (N'000)</i>			
< 200	12	21.4	X=264522.10 σ =77027.00 min = 117,000.00 max = 468,000.00
201 – 300	27	48.2	
301 – 400	15	26.8	
401+	2	3.6	

X=mean; σ= Standard deviation; min=Minimum; max=Maximum.

Information on the sex of the respondents revealed that 96.4 percent were male while 3.6 percent were females. It is evident that there is gender inequality in the appointment of extension agents in the study area. This finding corroborates that of Ajayi *et al* (2003) which established that women extension agents were notably not readily available to serve women farmers. Women extension agents are perhaps needed to bridge the gap in the gender ratio of extension agent and serve women farmers.

Majority (98%) of the respondents were married while only 1.8 percent was single. This is an indication that the extension agents are likely to be engulfed with home management related activities in addition to their professional responsibilities. Data on pre-service training acquired by the respondents showed that 26.8 percent had the Ordinary National

Diploma, 5.7 percent had the Higher National Diploma, 14.3 percent had University Bachelor's degree while only 1.8 percent had postgraduate diplomas. This finding established the fact that the extension agents had the relevant academic qualifications required to perform their job specifications. Results of further analysis showed that 69.6 percent had their pre-service training in general agriculture while 5.4 percent specialized in agronomy and plant science. About 7 percent specialized in animal science while 3.6 percent specialized in agricultural economics. Only 14.3 percent had pre-service training in agricultural extension. These results indicate that the extension agents had pre-service training in specialized agricultural related fields and would need adaptive training in marketing to perform the role of agricultural marketing extension agents.

About 53.6 percent had between eleven and twenty years of experience as an extension worker. Only 8.9 percent of the respondents had less than eleven years of experience in agricultural extension. The average year of experience of extension agents was 19.23 years with a standard deviation of 7.77 years. The respondents were therefore relatively experienced in the job.

The average number of farmers served by one extension agent was 1,532. In all 51.8 percent were serving less than one thousand farmers. About 34 percent were serving between one thousand and two thousand farmers per agent. Only 7.2 percent were serving between two and three thousand farmers per agent. More than three thousand farmers were being served by 7.2 percent of the respondents. This points to the fact that farmer extension ratio is about one thousand five hundred and thirty-two farmers to one extension agent (1532:1). This finding varies from that of Adedoyin (2004), which put extension farmer ratio in Osun State at 1:4,200 probably because the total number of farmers and extension agents were considered. In this study however, only the farmers being actively served by each extension agent were considered. The average number of villages or communities covered by one extension agent was 23. The average distance covered on a typical full working day was 30.91 km. The most popular means of transport used by extension agents was the motorcycles (74.54%) supplied on loan and being maintained with some form of allowance provided by the government. This fact supports the findings of Ajayi (2004), that the government was sponsoring extension services. About

21 percent of the respondents supervise between one and five extension agents. Majority (73.2%) did not supervise any other extension agents. This shows that there are less extension agent supervisors in the study area.

The data presented in Table 1 showed that 62.5 percent of the respondents owned personal farms. The average income from the personal farms was N49, 822:86. The extension agents could also be described as practicing farmers. They are expected to be well experienced and better able to assist farmers using their experience.

The data on annual salaries of the respondents showed that average annual income was N264, 522:10. Fortnight training (FNT) was described as the most popular source of information on the new practices to farmers. As presented in Table 2, the mean use index was 3.80. Monthly Training Review Meeting (MTRM) followed FNT with mean use index of 2.77. Radio had a mean use index of 2.75 while that of television was 2.21. The least popular source of information was circular letters, which had a mean use index of 1.64. These results therefore indicate that the most popular source of information to extension agents was fortnightly training meetings. The attendance of the meeting was compulsory for extension agents in the study area. These meetings regularly host Subject Matter Specialists (SMS) on related agricultural innovations. The SMS gives extension packages to extension agents for onward transmission to farmers.

Table 2: Frequency distribution of Extension Agents by the use of sources of information

Source of information	Very often 5	Often 4	At times 3	Can't say 2	Not at all 1	Mean use index
FNT	46(82.1)	9(16.1)	1(1.8)	-	-	3.80
MTRM	11(19.6)	25(11.6)	16(28.6)	4(7.1)	-	2.77
Radio	11(19.6)	23(80.4)	19(39.3)	3(5.4)	-	2.75
Television	6(10.7)	18(32.1)	18(32.1)	10(17.5)	4(7.0)	2.21
News papers	4(7.1)	14(25.0)	21(37.5)	14(25.0)	3(5.4)	2.04
Extension bulletin	5(8.9)	13(23.2)	25(44.6)	10(17.9)	3(5.4)	2.13
Circular letter	3(5.4)	7(12.5)	20(35.7)	19(33.9)	7(12.3)	1.64
Textbook	6(10.7)	8(14.3)	25(75.0)	14(25.0)	3(5.4)	2.00

FNT= Fortnight Training; MTRM= Monthly Training Review Meeting

6.2 Marketing related services provided by extension agents

Result of the analysis presented in Table 3 showed that the marketing related services commonly performed by extension agents was provision of information on sources of inputs. This role was also perceived as legitimate by 87.5 percent of the extension agents. The second popular marketing related service was procurement of inputs. The third was information on what products to produce for better income at a particular time. These roles were followed by storage of farm products for better price performed by 80.4 percent of extension agents. Packaging of products to attract good prices and management of glut was being performed by 60.7 percent of the respondents. The marketing related services least provided by extension agents were management of quality of products to favourably compete with imported goods as well as quality management to be suitable for exportation. Each of the two services was provided to farmers by 17.9 percent of extension agents. Provision of the two services was perceived as not legitimate by 85.7 percent of extension agents. This might be the reason behind the apparent non-provision of the services.

6.3 Relationships between respondents' perception on the legitimacy of selected marketing related services and the provision of the respective services

Spearman rank order correlation analysis was used to assess the association between responses to perceived legitimacy of the marketing related services and provision of the marketing services by extension agents. Result of the analysis shows that at 0.05 level of confidence, a significant relationship exists between the extension agents' perception on legitimacy and the performance of marketing related services ($r = 0.54$). This means that the more the performance of marketing related service is perceived as legitimate, the more the extension agents readily provide the services.

Thus, the null hypothesis was rejected while the alternative hypothesis was accepted. It was therefore stated that there is a significant relationship between the marketing related services performed and the perception on legitimacy of the services. This is an indication that policy on the legitimacy of the various marketing related services, which, an extension agent could perform, should be made known to

Table 3: Frequency distribution of Extension Agents on perception of legitimacy of marketing related roles performed and ranking of problems

Marketing Related Services/Problem	Legitimate Role		Performed Role		Mean problem Index	Rank as a problem
	Yes	No	Yes	No		
Information on what crop/livestock to produce	27(48.2)	29(51.8)	45(80.4)	11(19.6)	2.16	14
Information on sources of input	49(87.5)	17(12.3)	50(89.3)	6(10.7)	2.21	13
Procurement of inputs	22(39.3)	34(60.7)	50(89.3)	6(10.7)	2.02	15
Prompt harvesting to prevent loss	33(58.9)	23(41.1)	32(57.1)	24(42.9)	2.81	11
Encouragement of quality of products for market	41(73.2)	15(26.8)	40(71.4)	16(28.6)	2.83	9
Storage of farm products for better price	35(62.5)	21(37.5)	45(80.4)	11(19.6)	3.24	4
Packaging of products for good price	25(44.6)	31(55.4)	34(60.7)	22(39.3)	3.26	3
Management of glut	28(50.0)	28(50.0)	34(60.7)	22(39.3)	2.41	2
Information on location of good market	27(48.2)	29(51.8)	31(55.4)	25(44.6)	2.63	12
Pricing and timing of sales	32(57.1)	24(42.9)	20(35.7)	36(44.6)	2.96	7
Management of short falls of products	28(50.0)	28(50.0)	25(44.6)	31(55.4)	2.82	10
Linking farmers to private market/firms	26(46.4)	30(53.6)	27(48.2)	29(51.8)	3.18	5
Organizing cooperative sale of products	15(26.8)	41(93.2)	20(35.7)	36(64.3)	3.15	6
Managing quality for competition with imported products	8(14.3)	48(85.2)	10(17.9)	46(82.1)	3.44	1
Quality management for exportation	8(14.3)	48(85.7)	10(17.0)	46(82.1)	2.96	8

them. This is important because extension agents would not provide marketing related services, which they perceive as illegitimate.

6.4 Relationships between personal and socio-economic characteristics of respondents and their performance of marketing related services

Selected independent variables such as age, years of experience, rank/status, area of specialization, numbers of farmers served by respondents, numbers of villages served and the dependent variable which is the performance of marketing related services were subjected to Pearson product moment correlation analysis. The result is presented in Table 4. Information from the table shows a significant but negative correlation between the number of marketing related services performed by the respondents and age ($r = -0.333$). This means that the older the respondents are the fewer the number of marketing related services they perform. There was also a negative but significant correlation between years of experience of respondents and the marketing related services performed by the respondents ($r = -0.321$). This is an indication that the less experienced respondents provide more marketing related services to farmers than their experienced counterparts. This might be due to the fact that the experienced agents would avoid the provision of some marketing related services to their clients based on their experiences as it relates to legitimacy status of the respective service. In addition, a positive and significant correlation exists between the number of marketing related services and the number of superior officers ($r = 0.651$). The higher the number of officers supervising an agent the more the number of marketing related services the agent performs. Supervision is therefore important to the performance of marketing related services.

Results of the analysis also show that rank/status of extension agents had positive and significant correlation with age ($r = 0.387$) and years of experience ($r = 0.629$). In addition, the annual income also correlates significantly and positively with age ($r = 0.421$), years of experience ($r = 0.546$) and rank/status ($r = 0.758$) at 0.05 level of confidence. These results were therefore evidence of relationship between marketing related services provided to farmers by extension agents and their selected personal and socio-economic variables.

Table 4: Result of Pearson product moment correlation in a matrix

S/N	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Age	1.000												
2	Years of Exp	0.604**	1.000											
3	Specialization	-0.046	-0.122	1.000										
4	No. of farmers	0.106	0.104	-0.148	1.000									
5	No. of villages	0.068	0.205	-0.079	0.171	1.000								
6	Distance covered	-0.023	-0.124	0.033	0.228	-0.046	1.000							
7	Rank/Status/Position	0.387**	0.629**	-0.093	0.038	0.127	0.061	1.000						
8	No. of superiors	0.043	0.046	0.106	-0.207	-0.274	-0.062	0.001	1.000					
9	No. of subordinates	0.323	0.475**	-0.157	0.392*	0.192	-0.223	-0.139	0.247	1.000				
10	Annual Income	0.421**	0.546**	-0.048	-0.035	0.114	0.019	0.758**	-0.028	0.022	1.000			
11	Educational Qualification	-0.111	-0.165	0.288*	-0.157	-0.034	0.181	0.137	-0.032	-0.142	0.107	1.000		
12	Income from farm	-0.074	-0.059	0.105	0.302*	0.195	-0.086	-0.198	-0.089	0.477*	-0.238	0.342*	1.000	
13	Marketing Role	-0.333*	-0.321*	0.045	-0.076	-0.186	-0.024	-0.578*	0.651**	-0.256	-0.335*	0.216	0.018	1.000

*Significant at $p < 0.05$; **Significant at $p < 0.01$

Table 5: Result of Regression Analysis on the relationships between the marketing roles performed by extension agents and selected personal and socio-economic variables

Model	Unstandardized Coefficient		Standardized Coefficient	T- value
	B	Std. Error	Beta	
Constant	20.430	5.859	-	3.487
Age	0.125	0.215	0.236	0.582
Educational Qualification	-0.976	1.807	0.147	-0.540
Specialization	0.266	0.423	0.096	-0.629*
Years of Experience	-0.609	0.241	-1.509	-2.531*
Number of farmers served	-9.669E-05	0.000	-0.047	-0.205
Number of villages covered	1.3306-02	0.030	0.086	0.449
Rank	0.728	0.566	0.341	1.287*
Number of supervisor officers	4.424E-02	0.436	0.024	0.102
Number of subordinates	0.500	0.403	0.380	1.240*
Personal farm size	-2.723	1.930	-0.316	-1.411*
Annual Income	-9.445E-06	0.000	-0.140	-0.602*

$R = 0.978$ $R^2 = 0.957$. $Adjusted R^2 = 0.798$ $F = 6.041$ * Significant at $p=0.05$
 Dependent Variable: Marketing Roles Performed by Extension Agents.

Results of the regression analysis on the variables were presented in Table 5. T-values were used to test the significance of the regression coefficient of each variable at 0.05 level of confidence. The results showed that the regression coefficient (b) of specialization of respondents (b = 0.096), years of experience (b = -1.509), rank at work (b = 0.341), number of subordinates (b = 0.380), personal farm (b=-0.316) and annual income (b = -0.140) were significant at the 0.05 level of confidence. This means that unit changes in specialization, years of experience, rank at work, number of subordinates, ownership of personal farms and annual income would result in changes in the number of marketing related services provided by the respondents.

The variables listed explain 95.7 percent of the changes in the marketing related services of the respondents ($R^2 = 0.957$). The value of F, used to test whether or not the total contributions of the variables listed, was significant at the 0.05 level of confidence; the variables pooled together were significant.

The model, which emerged from this analysis, was therefore represented by:

$$Y = a_0 + b_1X_1 + b_2X_2 + \dots + b_nX_n + e$$

Where Y = Number of marketing related extension services provided by the agents.

a_0 = Slope / Intercept (Constant)

b_1, b_2, \dots, b_n = Regression Coefficient of independent variables.

X_1, X_2, \dots, X_n = Independent variables

e = Error term

6.5 Relevance of the findings to extension training and policy

The training of agricultural extension agents is a continuous process and is emphasized in the training and visit system of extension, which is currently being used in Nigeria and specifically in the state studied. Training is important and should emphasize essential training needs. In the course of this study, it was revealed that marketing extension related services were performed less by the extension agents. It is desirable to redress the situation so as to promote good marketing related opportunities and information to farmers in order to increase their income. Although marketing is very important for the economic development of farmers, some marketing related services were ranked high as problems in addition to being performed less. These include among others, management of quality for competition with imported products, management of glut, packaging of products to command good prices and storage of products for better prices. These roles were not performed by most extension agents and mostly not regarded as legitimate.

The training curriculum and modules for extension agents should therefore include the importance, relevance and strategies for the provision of marketing related services to farmers. The use of various training methods should be adopted in the course of the training on marketing related support services for extension agents. Since most of the extension agents provide the marketing related support services perceived as legitimate, there is a need to ensure a policy review to include provision of most of the services in the lists of legitimate roles expected of extension agents.

Another fact emanating from the study was that specialized marketing extension agents are not presently employed but general extension

agents have to include marketing aspects in their extension work. This is contrary to the option adopted in Jamaica where specialized marketing extension agents whose emphasis were to provide marketing related extension services were employed (Johnson, 1998).

7. CONCLUSIONS AND RECOMMENDATIONS

The findings of this study led to some conclusions and recommendations. These include the following:

- (i) Agricultural extension agents provide selected marketing related services and information to farmers in the study area. The marketing related information and services provided to farmers were those mostly deemed to be legitimate. The relationship between marketing related services provision and the perceived legitimacy of the services was significant.
- (ii) The majority of the extension agents had a Higher National Diploma (57.1%) in general agriculture (69.6%). Specialization and years of experience relates to the provision of marketing related services to farmers. Other variables, which significantly influence the changes in number of marketing related services, include rank, number of subordinates, ownership of personal farms and annual income. This means that these variables should be given serious attention whenever programmes to improve marketing services provided to farmers is considered.
- (iii) The extension to farmers' ratio is very high. This could adversely affect the effectiveness of extension in the state. In addition, the proportion of male to female extension agents was notably high and needs to be redressed for effectiveness.
- (iv) Fortnightly training meetings remain the most popular source of information used by extension agents. Other sources could also be explored and activated.

Based on the above conclusions, the following recommendations are made:

- i. Since farmers could increase their incomes both by producing more crops and by marketing their products better and get higher returns, extension services should explore the possibility of providing more marketing related services to farmers in order to increase their income.
- ii. An option, which could be considered, is to employ specialized agricultural marketing extension agents to complement the services provided by the general extension agents on agricultural production.
- iii. Policy makers should organize forums where extension agents would be informed about the importance and the need for marketing support services alongside other conventional agricultural extension roles.
- iv. Subject Matter Specialists in Agricultural Marketing should be included in the scheme of extension agents' training at the regular fortnightly training meetings; and
- v. The training and refresher course for extension agents should emphasize marketing related services to farmers as an option towards improvement of farmer's welfare, which is extension's main goal.

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