

DIFFERENTIAL THRESHOLDS OF FARMERS' AND PUBLIC EXTENSION AGENTS' PERCEPTIONS OF BENEFITS OF COST SHARING IN EXTENSION SERVICE DELIVERY IN BENUE AND NASARAWA STATES, NIGERIA

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ABSTRACT: *The study was carried out in Benue and Nasarawa States, Nigeria to assess perceived benefits of cost-sharing among farmers and public extension agents. Data was collected from a sample of 346 respondents using interview schedule/questionnaire as well as Focus Group Discussion. Descriptive statistics such as frequency and percentage as well as Mann-Whitney U test were used for data analysis. Majority of the farmers (61.4%) and all (100%) the public extension agents were males, middle aged, having formal education which enabled them to understand possible benefits of cost-sharing in agricultural extension service. Farmers' and public extension agents' perceived benefits of cost-sharing practices were observed in the areas of equity participation of stakeholders (18.4%), result orientation of scheme (14.2%), effective monitoring of project (13.9%), demand driven of extension service (12.1%) and meeting of targets of extension service delivery (10.8%), among others. There was a significant difference between Benue and Nasarawa States in terms of perceived benefits of cost-sharing practices by respondents. This was due to the higher average work experience of farmers in Benue State as opposed to their counterparts in Nasarawa State implying that the longer the work life of an individual the better exposed he is to work experiences that would enhance his sense of perception and judgment. The study recommends that farmers be encouraged towards consistency in their primary occupation of farming to improve their cognate experience while efforts are made by service providers to ensure that extension services provided for end users are demand driven and result oriented in order to achieve the objectives of extension service delivery. The need for adequate measures for effective monitoring of extension services for greater efficiency was considered necessary as it will help to encourage stakeholders to participate in cost-sharing.*

KEYWORDS: Cost-Sharing, Farmers, Public Extension Agents, Perception.

INTRODUCTION

Cost-sharing, which involves government-farmer partnership in the funding of agricultural extension service is one of the reforms aimed at achieving sustainable funding for extension systems (Ozor *et al.*, 2007). In some types of cost-sharing, the cost of using the service is borne exclusively by the users of the service and not by the taxpayer. In other types, capital investment is made by the private sector on the strength of a contract with government to provide agreed services while the cost of providing the service is borne wholly or in part by the government. Government contributions in a cost-sharing arrangement may, also, be in kind (notably the transfer of existing assets). In projects that are aimed at creating public goods like in the infrastructure sector, the government may provide a capital subsidy in the form of a one-time grant, so as to make it more attractive to the private investors. In some other cases, the government may support the project by providing revenue subsidies, including tax breaks or by providing for a fixed period (Adirieje, 2009).

According to Agwu and Chukwuone (2002), extension organizations are faced with the problem of acquiring and allocating financial resource to carry out their mandate. Onoja (2004) reiterated that years after the implementation of the ADP extension system, there have been cases of inadequate funding of research and extension activities as well as communication and dissemination of research results. These findings suggested new public management approaches to address alternative funding sources for extension activities in order to enhance sustainability in agricultural extension funding.

There is increasing dissatisfaction with the conventional approaches to financing extension, which are largely based on services financed with public money and delivered by public extension organizations. These happen to the extent that donor agencies and government decision-makers increasingly wonder if extension should remain high or not on their priority list. Consequently, there is a need for a redefinition of the role of Government to concentrate on ensuring favourable policy environment and regulatory functions that will address the issues of ineffective publicly funded extension as they do not respond sufficiently to farmers' felt needs. This is expected to minimize the negative effects of unsustainable funding base due to donor withdrawals and the overall dissatisfaction with the position of rural communities who see public free service as part of their own national cake.

Strong central institutions are needed to create a framework within which it is easier for local government to operate and a shortage of administration expertise at central level is bound to be even worse at local level. Similarly, the financing constraint is likely to be even greater for local governments, who find it difficult to raise taxes to pay for local services or to impose sanctions on those unwilling to pay. In practice, fiscal decentralization may provide central governments with a convenient excuse for abandoning certain functions and does not guarantee improved delivery. This raises the following questions.

1. What are socio-economic characteristics of farmers and public extension agents in the study area?
2. What are farmers' and public extension agents' perceptions of benefits of cost-sharing of extension service delivery?

Objectives of the Study

The broad objective of the study was to compare farmers' and public extension agents' perceptions of benefits of cost-sharing of agricultural extension service in Benue and Nasarawa States, Nigeria. Specifically, the study sought to:

1. describe the socio-economic characteristics of farmers and public extension agents; and
2. ascertain farmers' and public extension agents' perceptions of benefits of cost-sharing of extension service delivery.

Hypothesis of the study

The following null hypothesis was stated and tested:

Ho: There is no significant difference between Benue and Nasarawa States in terms of perceptions of benefits of cost-sharing in extension service by farmers and public extension agents.

METHODOLOGY

This study was carried out in Benue and Nasarawa States, Nigeria. The States were purposively selected because of their agricultural potentials and the seemingly ineffective agricultural extension services in the respective locations.

Benue State has a population of 4,780,389 people (NPC, 2006) with 413,159 farm families and 156 extension agents, giving a ratio of 1:2600 extension agents: farmers (BNARDA, 2009). The main crops grown in the state comprises yam, cassava, rice, soybean, sesame, cowpea, and tree crops such as cashew, mango, orange and guava. The State is traversed by River Benue (280km long) and River Katsina-Ala (202km long) and has a total area of about 30,955km² which is administratively divided into 23 Local Government Areas. Benue has three agro-ecological zones (A, B, and C).

Nasarawa State, on the other hand, has a population of 2,040,097 people (NPC, 2006), 180,433 farm families and 137 extension agents with a ratio of 1:1156 extension agents: farmers (NADP, 2010). It has an approximate land size of about 137.8km² comprising 13 Local Government Areas (Wikipedia. The Free Encyclopaedia, 2013). The major crops grown here include: yam, cassava, rice, sweet potatoes, sesame, sugar, millet, maize and various tree crops. Nasarawa State is divided into three agro-ecological zones (Central, Southern and Western-CAZ, WAZ and SAZ)).

The population of this study comprised all farmers and public extension agents in Benue and Nasarawa States whose population was 1,532 and who benefited from agricultural extension services. A multistage sampling technique, involving purposive, stratified and simple random sampling techniques was adopted to draw a sample size of 236 farmers and 110 PEAs. Under this technique, three zones from each of the two States were purposively selected to provide a full coverage of the States. In the second stage, a Local Government Area from each of the zones was selected in a stratified manner so as to give a good geographical spread within the States. Thirdly, two communities, from each of the Local Government Areas were purposively selected on the basis of settlement orientation-rural/urban. Fourthly, a sample frame was developed for each of the 12 communities for farmers only using a proportional allocation of 18% across board (Benue=174; Nasarawa=62) and 50% for all public extension agents in the States (Benue=42; Nasarawa=68), giving a total sample size of 346 respondents used for the study. Data were collected using interview schedule/questionnaire and Focus Group Discussion (FGD). Frequency, percentage and Mann-Whitney U test were used for data analysis. Hypothesis was tested using Mann-Whitney U test.

RESULTS AND DISCUSSION

Socio-economic characteristics of the farmers

Results in Table 1 show that 46.2% of the farmers were aged between 51 and 60 years, those aged between 41 and 50 years constituted 27.9%. Generally, majority (74.1%) of the farmers were aged between 41 and 60 years. This is attributed to the limited opportunities of white collar jobs in the urban centres in recent times that have led to renewed interests in farming among the youths with a consequent reduction in rural-urban migration. This population is still advantageous to the farming profession as the energy required for resilient farming

activities peters out with age. The findings disagree with a study carried out by Adewumi *et al.* (2007) which stated that the farming population is ageing.

Majority (61.4%) of the farmers were males, while 38.6% were females. This shows that males are still predominant in farming occupation in the study area which corroborates the finding of Ejembi (2009) that farming is largely an exclusive male preserve in Nigerian rural communities. This situation may be as a result of leadership system which puts men in charge of farming resources such as land which by tradition females are not allowed to own in most areas.

The result also revealed that majority (56.8%) of the farmers attended primary school. This is an indication that most of them were moderately literate which is in line with the findings of Ozowa (1997) where literacy levels of majority of farmers were found to be within the primary school level of education. This level of educational qualification is helpful in raising perceptual threshold since there is a proportional relationship between perception and literacy level (Chapman and William, 1999). According to Ogunbameru (2005), perception, which is the process of attaining understanding of sensory information, is enhanced by a well developed sensory system and literacy plays a major role in this regard.

Entries in Table 1 show that majority (97.9%) of the farmers were married, those who were single and widowed constituted 0.4% each, while those separated or divorced constituted 1.3%. This shows that farmers in the study area were regarded as responsible people and their family structural ties were intact, making it easy for inter-personal influence in times of decision making. This is especially so as high premium is placed on functional family system in rural Nigeria (Ejembi and Ejembi, 2005) and it agrees with the position of Eremie (2005) that majority of farmers in Nigeria are married as they assume early responsibility of family care in line with the African tradition and practice.

Majority (70.4%) of the farmers had a household size of 6-10 persons, 28.8% had a household size of between 1 and 5 persons, among others (Table 1). This implies that the respondents have a fairly large household size. Members of households could serve as source of labour used for farming activities and also influence decision making when it comes to cost-sharing of agricultural extension services.

A greater percentage (45.3%) of the farmers had a farming experience of 6-10 years, 26.3% of them had an experience of between 1 and 5 years, while 24.1% had been farming from 11-15 years, among others (Table 1). This shows that most of the farmers have not been farming for a long period of time. This may be due to the age composition of the farming population (the modal age category of farmers in the study area was between 40-50 years). Many of the farmers within this age category may not have taken farming as a primary occupation. This work experience may also have the advantage of dynamism as opposed to the aged population which is usually conservative and traditional. It therefore had positive implication on perception generally and cost-sharing, in particular. However, it had the negative effect of in-depth understanding of what farming activities entail especially as it affects extension services.

Table 1 further indicates that majority (72.7%) of the farmers had farming as a major occupation, while 27.3% were engaged primarily on other occupations. It shows that farming is the dominant occupation in the area though they also engaged in non-farm occupations in order to acquire additional income to meet up with family responsibilities. The finding is

supported by Ajani and Igbokwe (2012) who reported that people living in rural areas diversify income sources in order to empower themselves economically to meet family responsibilities. Oberhauser and Pratt (2004) note that married people have responsibility for provision of household needs of their families hence greater involvement in occupational diversification for economic empowerment. This positively skewed result toward farming helped in the understanding of the concept of cost-sharing of extension service since it relates to agricultural activities which should ordinarily elicit interest. This is especially true as adoption of any innovation is dependent on the adopter's level of interest (Obinne, 1994).

Data in Table 1 also show that majority (76.7%) of the respondents had an estimated annual income of between ₦200, 001 and ₦300, 000, about 9% had an estimated annual income of ₦300, 001.00 - ₦400, 000. 00, among others. According to Ejembi (2009), poverty elicits some social feelings such as marginality, helplessness, dependency, not belonging, powerlessness, inferiority and personal unworthiness in the psyche of the poor. Under this condition, it would be difficult for an individual to come up with any positive impression about life and, as such, may not be very good for positive perception. This, according to Adeniyi (2001), could lead to capability deprivation, including the ability to think and appreciate anything that has implication for monetary cost. The resultant effect is a development of the culture of poverty.

TABLE 1: DISTRIBUTION OF SOCIO-ECONOMIC CHARACTERISTICS OF THE FARMERS (n = 236)

Socio-economic characteristics	Benue State (n = 174)		Nasarawa State (n = 62)		Pooled (n = 236)	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Age (years)						
30 – 40	21	12.1	11	17.7	32	13.6
41 – 50	42	24.1	24	38.7	66	27.9
51 – 60	89	51.2	20	32.3	109	46.2
61 – 70	18	10.3	3	4.8	21	8.9
Above 70	4	2.3	4	6.5	8	3.4
Total	174	100	62	100	236	100
Sex						
Male	108	62.1	37	59.7	145	61.4
Female	66	37.9	25	40.3	91	38.6
Total	174	100	62	100	236	100
Level of Education (years)						
No formal education	32	18.4	47	75.8	79	33.5
Primary	119	68.4	15	24.2	134	56.8
Secondary	17	9.8	-	-	17	7.2
OND/HND	6	3.4	-	-	6	2.5
Total	174	100	62	100	236	100
Marital Status						
Married	173	99.4	58	93.5	231	97.9

Single	-	-	1	1.6	1	0.4
Separated/Divorced	-	-	3	4.9	3	1.3
Widowed	1	0.6	-	-	1	0.4
Total	174	100	62	100	236	100
Household size (numbers)						
1 – 5	49	28.2	19	30.7	68	28.8
6 – 10	125	71.8	41	66.1	166	70.4
11 – 15	-	-	2	3.2	2	0.8
Total	174	100	62	100	236	100
Farming Experience (years)						
1 – 5	46	26.4	16	25.8	62	26.3
6 – 10	100	57.5	7	11.3	107	45.3
11 – 15	27	15.5	30	48.4	57	24.1
16 – 20	1	0.6	6	9.7	7	3
Above 20	-	-	3	4.8	3	1.3
Total	174	100	62	100	236	100
Major Occupation						
Farming	126	72.4	47	75.8	173	72.7
Others	48	27.6	15	24.2	63	27.3
Total	174	100	62	100	236	100
Estimated Annual Income (₦)						
<200,000	8	4.6	3	4.8	11	4.7
200,001 – 300,000	133	76.4	48	77.4	181	76.7
300,001 – 400,000	15	8.6	6	9.7	21	8.9
400,001 – 500,000	9	5.2	4	6.5	13	5.5
Above 500,000	9	5.2	1	1.6	10	4.2

Socio-economic characteristics of Public Extension Agents

Majority (63.6%) of the PEAs were aged between 51 and 60 years. Those within the age range of 41-50 years and 61-70 years constituted 17.3% and 19.1%, respectively (Table 2). The result revealed that majority of the PEAs was within middle age (80.9% aged between 40-60 years), and were physically resilient. According to Weil (2005), there are many disadvantages of an ageing population. As people age, they become more dependent on the care of others and presents a burden for which many families find challenging. This is in contrast with the youthful age which is literally advantageous in all spheres of human endeavours, as it is usually characterized by venturesome, agility and vibrancy, both physically and mentally.

All the PEAs were males. The predominance of male extension agents in the study area may pose a problem with regard to reaching women farmers with ease, thus hindering their effectiveness in extension work. This may be because of the perceived strenuous activities involved in extension work which women find challenging. However, this posed some

problems to effective extension service in Nasarawa State where the Islamic religious beliefs place limits on degrees of male-female formal interactions.

A greater percentage (56.4%) of the PEAs had OND/HND, among others (Table 2). This revealed that they were literate enough to carry out extension tasks. This finding, however, provides a degree of departure from that of FAO (2002) that high formal educational level attainment may make people not to associate themselves with rural activities of which extension work forms a major component. However, the present situation of unavailability of paid employment which, in turn, makes job choices difficult provides a possible explanation for this finding.

Table 2 further shows that 90% of the PEAs were married, among others. This implies that they were emotionally stable to concentrate on their work. This agrees with a study carried out by Ajani and Onwubuya (2013) which stated that most of the extension agents in Anambra State were married.

Majority (73.6%) of the PEAs had a household size of 6-10 persons, while 26.4% had a household size of between 1 and 5 persons (Table 2). Size of household can be a key variable in determining whether the respondents could be involved in cost-sharing of extension service. Household size seeks to underscore the importance of collective decision making as psychological impetus is usually provided by members of one's household. It can greatly enhance quality decision as all ideas may be subjected to critical analysis by members of each household.

Results in Table 2 further show that majority (68.2%) of the PEAs had worked for 16-20 years, while 18.2% had working experience of 6-10 years. This revealed that they had sufficient experience. It is then possible for them to use their wealth of experience to teach other stakeholders the need to diversify extension approaches to areas such as cost-sharing for efficiency and effectiveness of the services. This position is supported by Ozor *et al.* (2007) who emphasized the need and importance of cost-sharing practices as an alternative way of making extension service delivery more effective and result oriented.

All (100%) of the PEAs had civil service as a major occupation (Table 2). This was evidence that they may be unwilling to participate in cost-sharing practices in terms of financial contribution as they depend solely on salaries drawn from their employers as well as the fact that they do not have any other serious stake in extension service vis-a-vis its policy.

Table 2 also revealed that 64.5% of PEAs earned an estimated income of ₦300, 001. 00-₦600,000. 00 annually. This is comparatively low for a person to be able to cope with the present day living standards and, according to Swanson *et al.* (1990), has a far reaching implication on interest to participate in voluntary socio-economic activities like cost-sharing.

TABLE 2: PERCENTAGE DISTRIBUTION OF SOCIO-ECONOMIC CHARACTERISTICS OF PUBLIC EXTENSION AGENTS (n = 110)

Socio-economic characteristics	Benue State (n = 42)		Nasarawa State (n = 68)		Pooled (n = 110)	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Age (years)						
41 – 50	8	19.1	11	16.2	19	17.3
51 – 60	31	73.8	39	57.3	70	63.6
61 – 70	3	7.1	18	26.5	21	19.1
Total	42	100	68	100	110	100
Sex						
Male	42	100	68	100	110	100
Total	42	100	68	100	110	100
Level of Education (years)						
Secondary	9	21.4	16	23.5	25	22.7
OND/HND	24	57.1	38	55.9	62	56.4
Degree	7	16.7	9	13.2	16	14.5
Postgraduate						
Diploma	2	4.8	5	7.4	7	6.4
Total	42	100	68	100	110	100
Marital Status						
Married	42	100	57	83.8	99	90
Separated/Divorced	-	-	4	5.9	4	4
Widowed	-	-	7	10.3	7	6
Total	42	100	68	100	110	100
Household size (numbers)						
1 – 5	26	61.9	3	4.4	29	26.4
6 – 10	16	38.1	65	95.6	81	73.6
Total	42	100	68	100	110	100
Work Experience (years)						
1 – 5	2	4.7	2	3	4	3.6
6 – 10	11	26.2	9	13.2	20	18.2
11 – 15	1	2.4	4	5.9	5	4.5
16 – 20	26	61.9	49	72	75	68.2
Above 20	2	4.7	4	5.9	6	5.5
Total	42	100	68	100	110	100

Major Occupation						
Civil service	42	100	68	100	110	100
Total	42	100	68	100	110	100
Estimate Annual Income (₦)						
<300,000	1	2.4	5	7.4	6	5.5
300,001- 600,000	31	73.8	40	58.8	71	64.5
600,001- 1,200,000	7	16.7	13	19.1	20	18.2
Above 1, 200,000	3	7.1	10	14.7	13	11.8
Total	42	100	68	100	110	100

Farmers' and public extension agents' perceived benefits of cost-sharing practices

Data in Table 3 indicate that 18.4% of the farmers and public extension agents felt that the benefits of cost-sharing practices should involve equal participation of stakeholders. Other possible benefits identified were that stakeholders should become result oriented (14.2%), effective monitoring (13.9%), extension service should become more demand driven (12.1%) and targets will be met (10.8%), among others.

This implies that the poor performance of extension agencies/agents over the years may have been due to frustrations by staff which perhaps created an atmosphere of mutual mistrust and resultant lack of confidence in extension service. The finding agrees with Obinne *et al.* (2004) who noted that for an innovation to be accepted, the motive should be clearly understood to eliminate mutual suspicion.

TABLE 3: DISTRIBUTION OF RESPONDENTS ACCORDING TO PERCEIVED BENEFITS OF COST-SHARING PRACTICES (n=346)

Benefits	Farmers (n = 236)				PEAs (n = 110)				Pooled (n = 346)	
	Benue (n = 174)		Nasarawa (n = 62)		Benue (n=42)		Nasarawa (n=68)		F	%
	F	%	F	%	F	%	F	%		
Effective monitoring	41	16.1	16	16	11	11.4	18	10.6	86	13.9
Efficient services	33	13	13	13	11	11.5	18	10.6	75	12.1
Target achievement	15	5.9	6	6	17	17.7	29	17	67	10.8
Result orientation	41	16.1	16	16	11	11.4	20	11.8	88	14.2
Enhanced participation	9	3.6	4	4	7	7.3	14	8.2	34	5.4

Cost effective	32	12.6	13	13	4	4.2	9	5.3	58	9.4
Equal participation of stakeholders	51	20.1	19	19	16	16.6	28	16.5	114	18.4
Improved communication	13	5.1	5	5	12	12.5	20	11.8	50	8.1
Checks and balances	7	2.8	3	3	4	4.2	8	4.7	22	3.5
Enhanced coordination	12	4.7	5	5	3	3.1	6	3.5	26	4.2
Total	254*	100	100*	100	96*	100	170*	100	620*	100

*Multiple responses

Test of Hypothesis

Table 4 is the result of Mann-Whitney analysis of perceived benefits of cost-sharing practices. Since $U_{1cal}(63) > 0$ (critical value), the null hypothesis which stated that there is no significant difference between Benue and Nasarawa States in terms of perceptions of benefits of cost-sharing in extension service delivery was rejected and the alternative accepted. This indicates that there is a significant difference between Benue and Nasarawa States in terms of perceived benefits of cost-sharing practices. The longer the work life of an individual the better exposed he is to work experiences that would enhance his sense of perception and judgment. It is noteworthy, therefore, that although respondents in both States had appreciable average work experience, farmers in Benue State were found to have higher average work experience than their counterparts in Nasarawa State which have contributed to the finding. This finding is in line with the submission of Banmeke and Ajayi (2005) who noted that when a perceptual threshold is reached, positive action will be elicited which, in turn, can create the desired internal driving force for sustainable actions.

TABLE 4: MANN-WHITNEY ANALYSIS OF PERCEIVED BENEFITS OF COST-SHARING PRACTICES

Benefits	Benue		Nasarawa	
	Frequency	R ₁	Frequency	R ₂
Effective monitoring	52	18.0	34	12.0
Efficient services	44	16.0	31	10.0
Target achievement	32	11.0	35	13.0
Result orientation	52	19.0	36	14.5
Enhanced participation	16	5.0	18	6.0
Cost effective	36	14.5	22	7.0

Equity participation	67	20.0	47	17.0
Improved communication	25	8.5	25	8.5
Checks and balances	11	2.0	11	2.0
Enhanced coordination	15	4.0	11	2.0
	N₁ = 10	ΣR₁ = 118	N₂ = 10	ΣR₂ = 93
	U₁ = 63			

CONCLUSION AND RECOMMENDATIONS

Majority of the farmers and public extension agents were males, middle aged, having formal education which enabled them to understand the possible benefits of cost-sharing in agricultural extension service. Farmers' and public extension agents' perceived benefits of cost-sharing practices were seen in the areas of equity participation of stakeholders, result orientation of stakeholders, effective monitoring, demand driven of extension service and meeting targets of extension service delivery, among others. There was a significant difference between Benue and Nasarawa States in terms of perceived benefits of cost-sharing practices by respondents traced to higher average work experience of farmers in Benue State as opposed to their counterparts in Nasarawa State. This implied that the longer the work life of an individual the better exposed he is to work experiences that would enhance his sense of perception and judgment. The study recommends that farmers be encouraged towards consistency in their primary occupation of farming to improve their cognate experience while efforts are made by service providers to ensure that extension services provided for end users are demand driven and result oriented in order to achieve the objectives of extension service delivery. The need for adequate measures to be put in place to ensure effective monitoring of extension services for greater efficiency was considered important as that will help to encourage stakeholders to participate in cost-sharing.

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