

## MEASURING THE EFFECTIVENESS OF THE TRAINING AND VISIT EXTENSION SYSTEM IN NIGERIA; THE CASE OF THE LAGOS STATE EXTENSION SERVICE OPERATORS AND THE TARGET SYSTEM

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### ABSTRACT

*Measurement of the effectiveness of the T and V extension system of the Lagos State Agricultural Development Programme from the perspectives of the operators and the target system were carried out in two phases: the first phase identified and selected indicators of effectiveness through correlation matrix analysis of the Extension Agents' responses and those of farmers in Osun State. Phase two of the study measured the effectiveness of the T and V extension system in Lagos State. Data were collected from 214 farmers in 50 villages and 73 Extension Agents in Lagos on the two selected sets of indicators of effectiveness in phase one. Four aggregate indicators of effectiveness from farmers are: number of innovations adopted, number of demonstrations in which farmers participated, crop yield and number of SPAT plots in which the farmers assisted the Extension Agents (EAS). The five aggregate indicators of effectiveness from the EAS responses in phase one are: number of training sessions attended, number of trainings given to farmers, number of demonstration meetings held with farmers, number of SPAT plots established and number of innovations disseminated to farmers. The effectiveness of the T and V extension system was rated as average by the "Operators" and the "target system", respectively. This established the validity of effectiveness evaluation from the operators of the T and V extension system as well as the target system. The Lorenz curve proved that the impact of the T and V extension system in Lagos State were not equally felt by the farmers.*

**Key Words:** *Effectiveness, Training and Visit extension system, extension service operators, target system.*

### INTRODUCTION

Effectiveness is one of the characteristics of the extension programme that has received a great deal of attention from education researchers and extension personnel. It is the extent to which the objectives set are attained. Farinde (1995) defined programme effectiveness as the degree in which the programme under

examination has attained its set objectives. However, the major problem facing researchers on evaluation of extension programmes' effectiveness is that of appropriate indicators. There have been diverse evaluate research approaches using different indicators depending on the design of the study or the research problem in focus. Knowledge of innovations taught and gained by the target audience

had been used as a measure of effectiveness in many studies. For instance the effectiveness of Agricultural Shows in the farmer Oyo State and Ondo State, Nigeria (Jibowo, 1984); effectiveness of mass media methods (Chauhan and Sinha, 1979); relative effectiveness of 3-modes of presentation of farm information on radio (Pandey and Roy, 1977); relative effectiveness of selected non-projected visual aids in teaching Home Science (Kaur and Roy, 1976).

Measurement of effectiveness of most extension programme, extension methods, teaching and extension staff performance, were usually "Uni-directional". That is, effectiveness is measured by "impact or effect" of the extension programme on the target audience (farmers) (Fader, *et al* 1985). This suggests that adopting this approach called for identifying appropriate indicators of effectiveness from the target system's perspective (Farinde, 1995).

Evaluation of the effectiveness of the T and V extension system from the target system is mostly carried out by the extension personnel themselves, the sponsors of the extension programmes and the monitoring and evaluation agencies or the public. The adoption of this approach was based on the premise that the results of evaluative research on effectiveness from the operators of the extension programme (i.e. the extension personnel) are not always the true reflection of what the situation was, hence the validity of the results is doubtful. Therefore, the purpose of this study was to measure the effectiveness of the T and V extension system as perceived by Extension Agents (EAs) and target system (farmers), separately. A study of this nature will assist in establishing the extent to which

evaluation of extension programme effectiveness done by extension agents could be regarded as valid.

#### Objective of the Study:

The specific objectives of study were to:

- (i) identify indicators of effectiveness of the T and V extension system from the operators and target systems perspectives separately, in Lagos State.
- (ii) determine the congruity of effectiveness from both the operators' and target audience' perspective.
- (iii) use Lorenz curve to determine the spread of effect of the T and V extension system's effectiveness on the target audience, and
- (iv) make policy recommendations in the light of the implications of the findings on sponsors, operators and target audience of the T and V extension system in Lagos State.

#### METHODOLOGY

Data collection for this study took place in two phases from both the Extension Agents (EAs) and the Target System (farmers) in 1994. In the first phase, data were collected from 30 EAs stationed in Ife/Ijesha Zone of Osun State ADP and 35 farmers in Isoya village via Ile Ife, Osun State. This place is similar to Lagos State

both in climatic conditions, vegetation and extension system. Data were collected on all the indicators of effectiveness identified from literature. These were then subjected to correlation matrix analysis. Table 1 shows about seven indicators from the EAs while, Table 2 shows 8 indicators of effectiveness from the farmers. The highly consistent and highly correlated indicators were selected as indicators of effectiveness. These indicators were later used for measuring effectiveness of the Training and visit extension system in phase two.

The second phase of the study was carried out in five Rural Local Government Areas of Lagos State where extension practice was prevalent. They are Agege, Ikorodu, Epe, Ibeju-Lekki and Badagrey LGAs. Data were collected from 214 farmers in 50 villages through simple random sampling technique using interview schedule. The villages were selected from five extension blocks and twenty circles. Seventy three EAs responded to a questionnaire soliciting information on some indicators measuring effectiveness of T and v extension system. Information was collected from the farmers on four indicators, while the EAs supplied information on five indicators of effectiveness identified in phase one. The respondents were required to mention in quantitative terms how each of the two sets of indicators of effectiveness applied to them. The total score for the four indicators was calculated for each farmer while, the total score for the five indicators was also calculated for each EA. The mean scores and standard deviations for both the farmers and the EAs were calculated, respectively. This then formed the basis of the class interval or levels of effectiveness of the T and V extension system from the

operators and the target system.

From the effectiveness scores of target system (farmers), a classification was formulated based on 10% groupings of the respondents, (see Table 3). This classification was used to determine the spread of the effect of the T and V extension system on the target system using Lorenz curve.

## RESULTS AND DISCUSSION

### Correlation matrix of indicators of effectiveness as indicated by Extension Agents

Results of intercorrelation of indicators of effectiveness of the T and V system as stated by EAs are presented in Table 1. Five indicators were consistent and highly correlated with one another out of the seven indicators which were subjected to correlation matrix analysis. The following indicators were highly correlated with one another at 0.05 significance level: number of training given to farmers and number training sessions attended ( $r=0.68$ ); number of demonstrations given to farmers and number of trainings given to farmers ( $r=0.448$ ); number of SPAT plots established and number of training sessions attended ( $r=0.55$ ); number of SPAT plots established and number of demonstrations given to farmers ( $r=0.83$ ); number of innovations disseminated and number of training given to farmers ( $r=0.69$ ); and finally, number of innovations disseminated and number of extension contacts with farmers ( $r=-0.47$ ). The negative correlation value of the number of innovations disseminated and number of extension contacts with farmers was unexpected.

The five indicators that were consistently highly correlated and selected included: number of training given to farmers, number of training sessions attended, number of farm demonstrations with farmers, number of SPAT plots established to demonstrate the superiority of production recommendations to farmers over the old ones, and number of innovations disseminated to farmers. These indicators showed the degree of attainment of objectives by the EAs in quantitative terms, except number of training sessions attended. This latter indicator only demonstrated in quantitative terms the magnitude of training acquired by the EAs to enable them update and upgrade their professional skills.

Data in Table 2 show that four indicators were consistently and highly correlated out of the eight indicators of effectiveness as identified by the farmers. The following indicators were found highly correlated with one another at 0.05 significance level: crop yield and number of innovations adopted ( $r=0.56$ ), number of demonstrations in which farmers participated and number of innovation adopted ( $r=-0.42$ ), number of SPAT plots established with EAs and number of demonstrations in which the farmers participated ( $r=0.67$ ). The negative value of correlation between number of demonstrations in which farmer participated and number of innovations adopted was contrary to expectation. However, the four indicators that were selected as measures of effectiveness from the target audience were: number of innovation adopted, demonstration in which farmer participated and number of SPAT plots farmer assisted the EAs to establish. It is very important to point out here

knowledge of production recommendation acquired by the target audience was not among the indicators that were found highly consistent and highly correlated, hence not picked.

#### Effectiveness of the T and V extension system in Lagos State

The effectiveness mean score for the farmers was 269.79 with 234.67 standard deviation. Detailed analysis showed that majority of the farmers (57%) had effectiveness score of 35.13-504.46 (average level of effectiveness), while about 31% of the farmers' effectiveness score was between 504.47 and above (High level of effectiveness). However, the mean effectiveness score from the EAs was 3 with a standard deviation of 7.77. Majority of the EAs (71.62%) had their effectiveness scores between 18.01 and 35.05 (average level of effectiveness), while 14.08% had their scores above 33.55 (High level of effectiveness). Therefore, the effectiveness of the Training and visit extension system based on the total mean score on the aggregate indicators from the EAs and farmers was average in Lagos State. This means that effectiveness from both the operators and target audience were 100% congruent in qualitative terms.

These results have proved wrong the belief that the operators of extension programme do not always say the truth about their performances and accomplishment on the job so that their weaknesses would not be exposed during evaluation that uses them as respondents. In the case of the Training and Visit Extension System of the Lagos State ADP, what the operators (EAs) had claimed they have done and achieved on the job (based on the five indicators above) had been

proved right, judging from the findings of evaluation from the target audience of the extension services in Lagos State. This was because effectiveness of the T and V extension system of the Lagos State was average as indicated by both the operators and target audience. It therefore means that evaluation of the extension programme by the operators of the extension programme could still be valid.

#### Magnitude/The spread of the effect of the effectiveness of the T and V Extension System using Lorenz curve

Lorenz curve is used to give a visual impression of how even, or uneven a distribution is. Application of Lorenz curve is based on the principle of equal cumulative percentage distribution (Living Stone and Ord, 1981). Data in Table 3 show that about 49% of the farmers (Column 6) had 12.62% instead of 49% (Column 7) of the total effectiveness scores, while 99.55% of the farmers had 98.3% of the total effectiveness scores instead of 99.55% (Column 6 and 7 for 105.1-126 class interval). The fact emanating from this finding is that the effectiveness scores were not equally distributed among the farmers, hence the divergence of the "Actual Curve" OABCDEFG from Lorenz curve OG (Fig. 1). The Lorenz curve (OG) indicated that 10% of the farmers had 100% effectiveness scores. OG is the diagonal line. The implication of these findings is that, though the T and V extension system of agricultural extension in Lagos State was effective, the impact had not been equally distributed and felt by the farmers. It could be inferred from the above that not all the farmers had fully and actively participated in farm demonstrations and establishment of SPAT plots, adopted large size of the production

recommendations taught them, and ultimately had increased crop yield.

#### CONCLUSIONS AND RECOMMENDATIONS

Measurement of the effectiveness of the T and v extension system from the perspectives of both the operators and the target system was based on the aggregate indicators selected from literature through correlation matrix analysis. Four aggregate indicators, namely; number of innovations adopted, number of farm demonstrations in which farmers participated, crop yield and number of SPAT plots which the EAs assisted the farmers to establish, were identified and selected as indicators of measurement of effectiveness of the T and V extension system from the target system's perspective. Also, five aggregate indicators were identified and selected for measuring effectiveness of the T and V extension system from the EAs perspective. The indicators were number of training sessions attended, number of trainings given to farmers, number of demonstrations had with farmers, number of SPAT plots established and number of innovations disseminated to farmer.

Based on these groups of indicators, the effectiveness of the T and V extension system of the LSADP was average from the operators and target audience's perspective, respectively. This had established that evaluation of extension programme effectiveness could be valid from the perspective of the operators of such programme. The Lorenz curve (Fig.1) with large loop established that the effectiveness scores from the farmers' perspective in Lagos State were not equally distributed. This means that the effect of the T and V extension system was not

equally shared or felt by the farmers in Lagos State. Based on the major findings, the following policy recommendations are made;

- (i) Evaluation of extension programme effectiveness could be carried out from the perspective of either the EAs or the target audience. Any of this will provide appropriate knowledge of weakness and strength of the extension programme.
- (ii) The EAs could provide information on their performances and/or accomplishment on the job which could be used to arrive at valid evaluation of the programme.
- (iii) When the extension staff are sure that programme evaluation results will be used for future programme development rather than for witchhunting of staff, they would be willing to provide factual information about their performances and accomplishment on the job, such information is useful for valid evaluation results. Therefore management and/or the sponsors of any extension programme should use the results of evaluation for programme development and not for witchhunting of extension staff.
- (iv) There is the need to replicate the research in some other states of the Federation including the Savannah and riverine areas. More indicators should also be identified.

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Table 1: Correlation matrix of indicators of effectiveness as perceived by Extension Agents

	A	B	C	D	E	F	G
A: Number of training given to farmers							
E: Number of training occasions attended	0.63**						
C: Number of contacts with farmers	0.08	0.04					
D: Number of demonstrations given to farmers	0.48**	0.04	-0.05				
E: Number of SPAT plots established	0.65**	0.55**	-0.04	0.83**			
F: Number of advisory services given to farmers	0.35	0.05	-0.34	0.59	1.10		
G: Number of innovations disseminated	0.69**	-0.05	-0.47*	-0.38	-0.32	0.07	

N = 30 One tailed significance: \*P=0.01 (r=0.4487), \*\*P=0.001 (r=0.5541).

Table 2: Correlation matrix of indicators of effectiveness as perceived by farmers

	A	B	C	D	E	F	G	H
A: Number of innovations adopted								
B: Crop yield	0.56**							
C: Knowledge of agric. innovations	0.01	0.01						
E: Number of contacts with VEAs	0.32	0.03	0.00	0.14				
F: Number of demonstrations participated in	-0.42**	-0.32	0.29	0.18	0.00			
G: Number of SPAT plots established with EAs	-0.22	-0.01	-0.13	-0.15	0.03	0.67**		
H: Number of advisory services had from EAs	0.07	-0.01	0.03	-0.17	-0.13	-0.11	0.18	

N = 35 1-tailed significance: \*\*P=0.01 (r=0.4238).



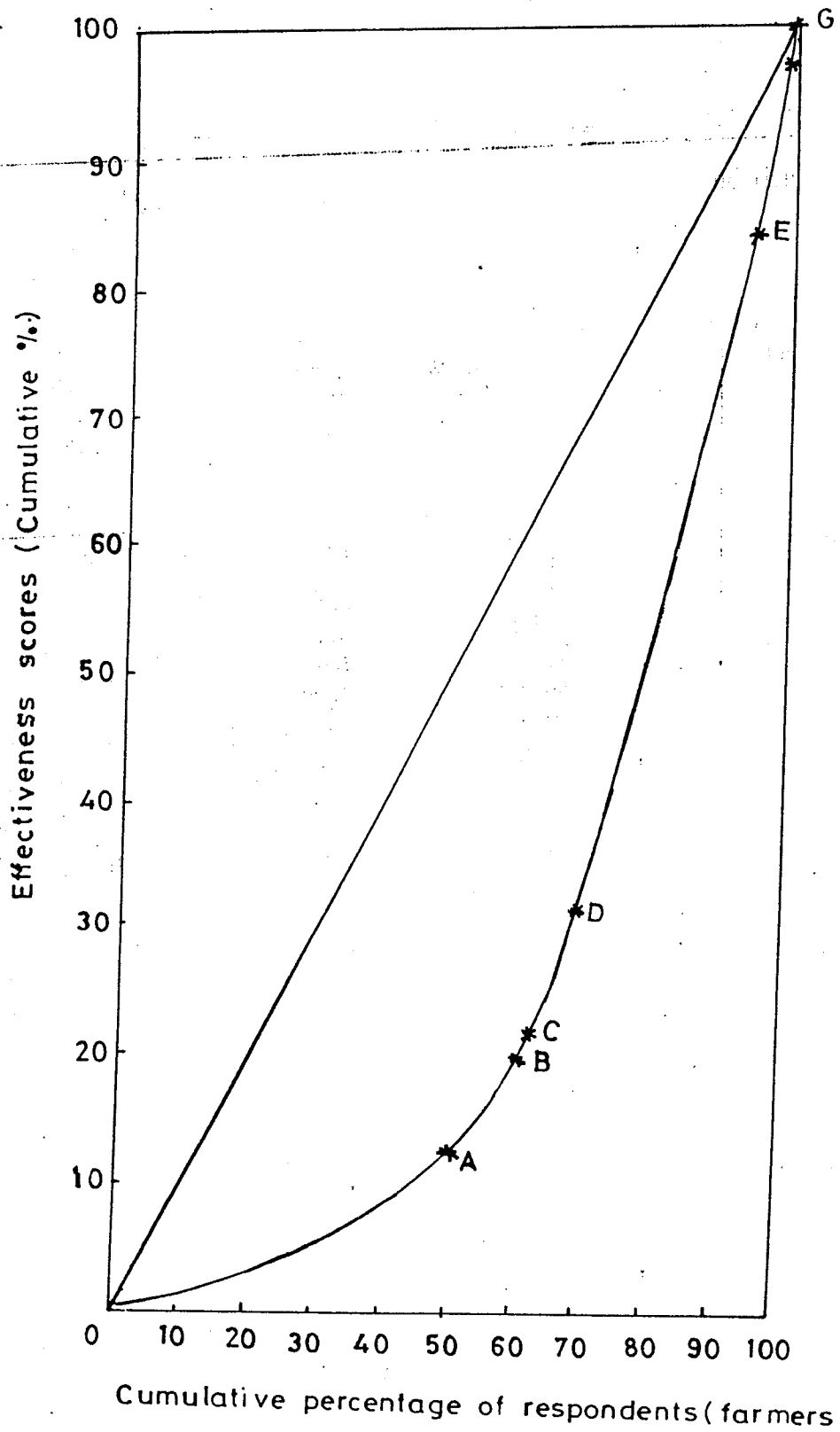


Fig 1 Distribution of effectiveness scores from the farmers side under the (T & V) system of the Lagos State ADP

Table 3: Distribution of farmers with effectiveness scores in class or group of 10%

Class of effectiveness score (1)	Number of farmers (2)	Total effectiveness score/class (3)	% of column 2 (4)	% of column 3 (5)	% of column 4 (6)	Cumulative of column 5 (7)
1-21 (10%)	105	1197.95	49.07	12.62	49.07	12.62
21.1-42 (20%)	25	608.01	11.68	6.40	60.75	19.02
42.1-63 (30%)	3	117.69	1.40	1.87	62.15	20.89
63.1-84 (40%)	13	952.7	6.07	10.04	68.22	30.93
84.1-105 (50)	54	5066.69	25.23	53.36	93.45	84.29
105.1-126 (60%)	13	1329.60	6.07	14.01	99.55	98.3
126.1-147 (70%)	0	162.63	0.00	0.00	99.55	98.3
147.1-168 (80%)	1	0	0.47	1.72	100.00	100.00
168.1-189 (90%)	0	0	0.00	0.00	100.00	100.00
189.1-210 (100%)	0	0	0.00	0.00	100.00	100.00