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<b>Author</b>	<b>Content</b>	<b>Page</b>
Y A Awoyinka, A E Ikpi	Economic Evaluation of Farm Income and Technical Efficiency of Resources in Industrial Sugarcane Production in Jigawa State, Nigeria	1
R N Okoh, J O Akintola	Oligopolistic Pricing and Market Integration of Cassava Roots and Products in Delta and Edo States, Nigeria	21
O O Adekola, A O Falusi, B T Omonona	Determinants of Child Labor Participation in Ibadan, Oyo State	45
M A Y Rahji	A Utility Function Analysis of Formal Credit Allocation in a Dichotomized Nigerian Economy Between 1970 and 1999	55
T T Awoyemi, T O Adekanye	Gender Analysis of Economic Efficiency in Cassava-based Farmholdings in Southwestern Nigeria	65
O P Fawole, O Fasina	Factors Predisposing Farmers to Organic Fertilizer Use in Oyo State, Nigeria	81
O Y Ajani	Determinants of Food Security of Low-income Households in the University of Ibadan	91
L A Akinbile, A A T Ndaghu	Poverty Level and Poverty Alleviating Strategies of Farm Families in Michika LGA of Adamawa State, Nigeria	101
R A Sanusi, C R Obatolu	Impact of Crude Oil Exportation and Trade Liberalization on Nigerian Cocoa Output Supply: (1970-2000)	109
James P Udoh, Gabriel S Umoh	Marketing of the Fresh Water Clam <i>Galatea paradoxa</i> ( <i>Egeria radiata</i> ) Born 1778 in Southeastern Nigeria	121
M A Oladoja	Access to Extension Delivery by Fishermen and Women in Lagos and Ogun States, Nigeria	139
M O Ojo, G A Lameed, S M Jeminiwa	Utilization of Wildlife Resources in Asejire and its Environ	147

# FACTORS PREDISPOSING FARMERS TO ORGANIC FERTILIZER USE IN OYO STATE NIGERIA

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## ABSTRACT

*The acceptance and continuous use of any innovation is the aim of every extension program. There are various factors which predispose farmers to the adoption of any innovation. This study was therefore carried out to find out what factors would favourably dispose farmers to the adoption of a newly introduced commercially produced organic fertilizer. The study was carried out 3 years after the introduction of the organic fertilizer in the three vegetation zones of the state. A total of 110 farmers were interviewed of which 51 used the fertilizer. Personal characteristics of farmers which were found to significantly influence the use of the organic fertilizer were age of the farmer, ownership of the farmland, level of education, social participation and knowledge of the benefits of organic fertilizers. An average of 2 bags was used, with a mean area of 0.57 hec cultivated with the fertilizer. Majority (84.30%) used out of curiosity.*

## INTRODUCTION

This study focused on the introduction and use of commercially produced organic fertilizer by farmers, with the aim of highlighting the socio-demographic characteristics of the farmers as well as their influence on the trial use of the organic fertilizer. The organic fertilizer was produced from a compost of market waste, cow dung and abattoir waste. The final product was a dry black substance packaged in 50kg packs. This organic fertilizer was produced to alleviate farmer's problem of chemical fertilizer procurement, high cost, as well as to encourage environment friendly agricultural practice.

Three hypotheses set in the null form were derived for this study.

1. There is no significant relationship between the selected socio-demographic characteristics of farmers and their use of the organic fertilizer.



2. There is no significant relationship between the knowledge of the benefit of organic fertilization and the use of the organic fertilizer.
3. There is no significant relationship between contact with extension agents and the use of that organic fertilizer.

### THEORETICAL/CONCEPTUAL FRAMEWORK

The ultimate goal of any agricultural research and technology development is the adoption and continuous use of such an innovation by the farmers. The concept of adoption has however been researched into over the decades (Ryan and Gross 1953 etc). According to William (1984), the acceptance of a new idea is a complex process and it involves a sequence of thoughts and actions about which we have limited knowledge. Such that, information is needed often as to what influences farmers decision per time and location.

Adoption is the final stage of the complex process of decision making that farmers go through before they decide to use and continue the use of the innovation disseminated to them. It consists of four initial stages: awareness, interest, evaluation and trial. Alao (1975) however, identified 3 stages (awareness, trial and adoption) in his study. The trial stage according to Williams (1984), is the stage at which farmers decides to experiment with the new idea to see how it will perform, after weighing the advantages and risks that may be involved. This is usually done on a small scale.

### METHODOLOGY

A stratified and purposive sampling procedure was used for the study and data was collected using an interview schedule. This was carried out in May – June 2000, 3 years after the introduction of the fertilizer. Respondents were sampled from the three vegetation zones of the state based on information received from Oyo State Agricultural Input Supply Company (OYSAISCO) with respect to the fertilizer distribution. Akufo farm settlement and Ijaye Orile village were selected in the rainforest zone with 15 and 30 respondents respectively. The Ogbomoso farm settlement was selected in the derived Savannah zone with 12 and 8 respondents respectively. A total of 110 farmers were interviewed. The chi-square analysis was used to test the three hypotheses derived for the study at the 0.05% level of significance. Frequency counts, percentages means and modal values were also used in analysing the data gathered.

### RESULT AND DISCUSSIONS

Data analysis reveals that among farmers (84.30%), who used the fertilizer did so out of curiosity. They just tried it to see whether it would work or not. The rest did so because it was cheap. Thus an average of 2 bags (100kg) of the organic fertilizer was used while the mean area of land cultivated to which the organic fertilizer was applied was 0.57 hec. This confirms the characteristics of the trial stage of adoption i.e it is used on a small scale (Williams, 1984). Table 1 reveals that majority (94.50%) of the respondents were males. However, the chi-square test results show no significant relationship between the gender of farmer and the use of the innovation ( $X^2 = 1.87, p > 0.05$ ). Thus gender is not likely to influence the adoption of this organic fertilizer. The average farm size (8.39 hec) seems to be larger than the expected (in this part of the country), this is due to the fact that over half of the respondents come from the farm settlements that have an average of 10 hec allocated to them. Farm size however proves to be significantly related to the use of the organic fertilizer ( $X^2 = 47.66, p < 0.05$ ). Thus, bigger farm sizes will make space available for trial of innovations. This is consistent with the findings of some studies (Williams 1984, Agbamu 1993) though Igbodan *et al* (1987), Olowu *et al.* (1990), disagrees with this. Majority (53.60%) of the respondents have their farmland on lease from the government. A significant relationship was found between the use of the organic fertilizer and farmland ownership ( $X^2 = 36.13, p < 0.05$ ), thus confirming the desire of farmers to conserve their plots of land since they more or less are permanent tenants or owners (William, 1984).

From Table 1. It can be seen that majority (46.40%) of the farmers have been farming for over 30 years while only 7.30% have been farming for less than 10 yrs. This invariably suggests that respondents are well experienced in farming. The chi-square analysis results reveal that there is no significant relationship between the number of years in farming i.e experience and the use of the organic fertilizer ( $X^2 = 6.03, p > 0.05$ ). This however is in opposition to the idea that the more experienced farmers are, the more conservative and resistant to change they will be.

Table 1 further reveal that majority (98.38%) of the farmers are over 30 years in age showing that the older generation are the ones still involved in farming. However 91.80% said they hire labor. Majority (33.64%) are between the 51-60 age bracket while only 1.82% are less than or about 30 yrs of age.

Majority (75.45%) of the farmers have one wife as shown on table 1 and this is not significantly related to the use of the fertilizer ( $X^2 = 3.35, p > 0.05$ ), so also is the number of children ( $X^2 = 5.39, p > 0.05$ ). The modal class range for the number of children is 3-6, while the mean number children is approximately 6.



The level of education of farmers is found to have a significant relationship with the use of the organic fertilizer ( $X^2 = 15.94$ ,  $p < 0.05$ ). The view that the level of education influences adoption is also supported by the works of Akinbode and Clarke (1969). Ogunfiditimi (1981) and Odukun (1991). Thus the more educated, the more innovative farmers are likely to be. Most (81.80%) of the farmers have primary education and above. Majority (42.70%) however have secondary and post secondary education. Religious affiliation proved to be significantly related to the use of the organic fertilizer ( $X^2 = 29.20$ ,  $p < 0.05$ ). Majority (76.40%) of the farmers are Christians while the rest are of the Islamic faith, as shown on table 1.

**Table 1**  
**Socio-Demographic Characteristics of Respondents**

Variable	Frequency	Percentage
<b>Sex</b>		
Female	6	5.50
Male	104	94.50
Total	110	100
<b>Farm size (hec)</b>		
<3	22	20.00
3-6	17	15.45
7-9	4	3.645
>9	67	60.91
Total	110	100
<b>Farm ownership</b>		
Government lease (farm settlements)	59	53.60
Self	35	31.80
Relative	8	7.30
Rented	7	6.40
Squatter	1	0.90
Total	110	100
<b>Farming years</b>		
>10	8	7.30
10-20	18	16.30
21-30	33	30.00
>30	51	46.40
Total	110	100

**Table 1 (cont'd)**  
**Socio-Demographic Characteristics of Respondents**

Variable	Frequency	Percentage
<b>Age (years)</b>		
>30	2	1.82
30-40	28	25.45
41-50	18	16.36
51-60	17	33.64
>60	25	22.73
Total	110	100
<b>Number of wives</b>		
1	83	75.45
2	24	21.82
3	2	1.82
4	1	0.91
Total	110	100
<b>Number of children</b>		
<3	13	11.80
3-6	67	60.90
7-9	19	17.30
>9	11	10.00
Total	110	100
<b>Education level</b>		
No formal education	20	18.20
primary education	43	39.10
Secondary education	34	30.90
Post secondary education	13	11.80
Total	110	100
<b>Religion</b>		
Christianity	84	76.40
Islam	26	23.60
Total	110	100

Table 2  
Area of Land Cultivated with the Organic Fertilizer

Area of land cultivated with the organic fertilizer (hec)	Frequency	Percentage
< 1	33	64.71
1-5	17	33.33
6-10	0	0.00
> 10	1	1.96
Total	51	100

Table 3  
Number of Bags of Organic Fertilizer Used

Area of land cultivated with the organic fertilizer (hec)	Frequency	Percentage
< 1	1	1.96
1-2	32	62.75
3-4	12	23.53
5-6	2	3.92
>7	4	7.84
Total	51	100

Participation in social groups and activities was also found to be significantly related to the use of the fertilizer. ( $X^2 = 15.78$ ,  $p < 0.05$ ) This implies, that interaction with other members of the society helps in the diffusion of ideas and also encourages individuals to try the ideas, when they hear the reports of friends. Igodan *et al* (1987) also found this to be true in their study.

Knowledge of the benefits, of organic fertilization was measured by asking 5 simple questions to which a Yes or No answer was required. The number gotten rights were then summed up. Majority (74.50%) as shown on Table 4 have a good knowledge of the benefits of organic fertilization. The chi-square analysis reveal a significant relationship between the knowledge of the benefit of organic fertilization and the use of the organic fertilizer ( $X^2 = 27.97$ ,  $p < 0.05$ ). This therefore implies that effort be given to educating farmers on the advantages of organic fertilization if adoption of this technology is to be successful. A

significant relationship was also found between the use of the organic fertilizer and contact with extension agents ( $X^2 = 39.07$ ,  $p < 0.05$ ). This confirms the importance of extension agents in the process of information dissemination and technology adoption.

Table 4  
Knowledge Score

Knowledge score	Frequency	Percentage
0	5	4.50
1	10	9.10
2	13	11.80
3	27	24.50
4	29	26.40
5	26	23.60
Total	110	100

Table 5  
Social Participation Scores

Social participation scores	Frequency	Percentage
1-5	55	50.00
6-10	45	41.00
11-15	10	9.00
Total	100	100

## CONCLUSION AND RECOMMENDATION

From the discussion, it can be affirmed that there are inconsistencies in the findings of adoption studies (Adefuye and Subair, 1987) since human beings are motivated by different factors and influenced by varied socio-economic and demographic forces. More so, the characteristic of the innovation being introduced vary as well as the cultural and developmental context of the society involved. These call for continuous studies for various innovation and in various societies. Any innovation to be introduced should help discover factors that may militate against its adoption as well as those that could enhance it. Nevertheless, some factors considered in this study have general acceptance to an extent. Thus, age



of the farmer, farm size, land ownership, level of education and social participation are likely to influence the adoption of this organic fertilizer. The religious affiliation of farmers in this study is however a factor which cannot really be explained as it is not certain that there are religious restrictions on the use of organic materials for fertilization (except probably in the case of swine dung for the Islamic faith). However intricate personalities built into adherents of the different faiths cannot be down played and may thus be a significant factor to consider.

Finally, if effort is put in educating the farmers on the benefits of organic fertilization as well as encouraging social participation with the effectiveness of extension agents in discharging their duties, this innovation will be adopted quickly.

## REFERENCES

- Adefuye, B.O and Subair, S.K. (1987). "Adoption of Agricultural Innovation: Towards a Consistent View of Farmers Behaviour" *The Nigeria Journal of Rural and Community Development* Vol. 1, No 1 pp. 46-56.
- Agbamu, J.U. (1993), "Analysis of Farmers' Characteristics Associated with Adoption of Soil Management Innovations in Ikorodu Local Government Area of Lagos State". *The Nigerian Journal of Rural Extension and Development* Vol. 1, Nos. 2 & 3 1993 pp. 57-67.
- Akinbode, T.A. and Clarke R.C. (1968). "Factors Associated with Adoption of three Farm Practices in Western Nigeria" *University of Ife Research Bulletin*, Faculty of Agriculture, Ile-Ife.
- Alao, J.A. (1971), "Community Structure and Modernisation of Agriculture: Analysis of Factors Influencing the Adoption of Farm Practices among Nigerian Farmers." Unpublished Ph.D. Thesis, Cornell University, Ibadan, New York. p177
- Alao, J.A. (1975), "Characteristics of Farmers Who Adopt Agricultural Innovation in Nigeria" *Journal of Rural Economy and Development*. Vol. 9, No. 1. Pp 18-25.
- Igodan, C.O. Ohaji P.E. and Ekpere J.A. (1987), "Factors Associated with the Adoption of Recommended Practices for Maize Production in the Kainji Lake Basin of Nigeria, *Agriculture Administration and Extension* 29, (2), 149-156.
- Oduekun, F.K. (1991), *Factors Affecting the Adoption of Improved Rice Production Package in Obafemi/Owode and Ifo LAG's of Ogun State*. Unpublished M.Sc thesis, Department of Agricultural Extension Services, University of Ibadan, Ibadan. 117pp
- Ogunfiditimi, T. O. (1981), "Adoption of Improved Farm Practices. A Choice Under Uncertainty". *Indian Journal of Extension Education*, Vol. XV111, pp 30-35.
- Olowu, T.A. Anthony, I.I. and Ekpere, J.A. (1990), "Farmer Characteristics and Adoption of Improved Cassava Varieties in Imo State, Nigeria, *Proceedings of the Nigerian Academy of Science* 2, 1990, pp. 93-101.

- Rogers, E.M. (1965), "The Adoption Process". *Journal of Cooperative Extension* Vol. 1, No 2, pp 130-131
- Ryan, E. and Gross, F. (1953). "The Diffusion of hybrid Corn in Two Iowa Communities", *Rural Sociology*, Vol. 15, No. 6, pp 15-24.
- Subair, S.K. (1987) "Attitude of Farmers Towards Cultivation of Hybrid Variety of Cocoa in Ondo Local Government Area of Ondo State". *Nigeria Journal of Agronomy*, Vol. 3, No 1, pp 47-53.
- Williams, S.K.T., Fenley J.M. and Williams, C.E. (1984), *A Manual for Agricultural Extension Workers in Nigeria*, S.T. Printers Rawalpindi, Pakistan, 169 pp