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## FACTORS AFFECTING EXTENSION PROFESSIONALS IN THE TRANSFER OF AGRICULTURAL TECHNOLOGIES TO FARM FAMILIES IN ENUGU STATE, NIGERIA

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**Abstract:** The contribution of small and in particular family farms to global food security is gaining attention, particularly in the context of less developed countries. This therefore led to the study of factors affecting extension professionals in the transfer of agricultural technologies to farm families in Enugu State. A proportionate sampling procedure was employed in selecting 47 extension professionals based on their various ranks. Data collection instrument was questionnaire. Data collected were analyzed using percentages, mean-scores, and standard deviation. The findings show that majority (38.30%) of respondents were engaged in food crops component of the extension service delivery, minority (2.10%) are in the Women in Agriculture (WIA) component. Majority of the respondents (44.70%) noted that farm families were willing to learn and cooperate with them in the transfer of technology. Poor transport facilities for extension staff ( $M=3.66$ ) and Irregular evaluation of projects ( $M=2.36$ ) are some of the factors that hinders the effective transfer of agricultural technologies to farm families in Enugu State. The study therefore recommends that farm families should be involved actively in extension programmers so as to meet their felt needs and break out of the vicious cycle of poverty ravaging our rural areas.

**Keywords:** Poverty, farm family, technologies and Extension.

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**Introduction:** Farm families are people working in any area of agriculture who derive a significant portion of their income from farming, involve members of the family in managing the farm and rely predominantly on family labour. This farm families' works on family farms with varying sizes, ranging from 0.25 hectares to 10 hectares depending on region, crop and availability of land [1]. Farm families operates family farms in different part of the country with diverse levels of development, crops and products, offering ground-breaking opportunity that address the structural causes of poverty. According to Lipton, (2005) these smallholder farm families produce four fifths of the developing world's food, therefore are key contributors to global food security, custodians of vital natural resources and biodiversity, and central to climate change mitigation and adaptation. It has been seen that family farming is the basis for sustainable food provision in Nigeria and ensure employment for young people within the country, thus promoting social peace and diminishes migration. Innovative family farming, backed by appropriate research, supportive investments and adequate protection, can out-perform industrial commodity production [1]. Despite this reality, farm families remain a largely untapped resource, and are disproportionately represented among the nation's poor people.

The recognition of these wide-ranging potential returns of investing in smallholder farm families was one of the main rationales behind the introduction of Training and Visit System (T&V System) to increase individual farm production and income. The T & V system was introduced to improve each extension

worker's technical skills and knowledge about improved agricultural technology by providing regular in-service training sessions, and also to improve coverage by limiting the number of farm families or households one extension worker is expected to visit. Therefore, there is need for extension professionals to play significant roles in the dissemination of improved technologies to rural poor farm families and participatory approach remains an important way to achieving the objectives of extension service.

The effectiveness of the technologies alone does not bring the desired change in the rural areas, but partly depends on the capability of the extension workers to properly transfer them to the local populace [3]. Change would be the result of the effectiveness of the extension workers to appropriately transfer the technologies and the quality of the technologies themselves [4]. The effectiveness of agricultural extension work depends mostly on the availability of extension professionals who are qualified, motivated, committed and responsive to the ever-changing social, economic and political environment [3].

There is an assertion that the adoption of technology by farmers can be influenced by educating farmers about such things as improved varieties, cropping techniques, optimal input use, prices and market conditions, efficient methods of production management, storage, nutrition, etc [5]. Therefore, to effectively transfer technologies, extension agents must be proficient in communicating messages to farmers. They must be able to comprehend complex situation, have the technical ability to spot and diagnose problems, and possess insightful economic

management skills in order to advise on more efficient use of resources. Many front-line extension staff in Africa lacks the competences they need to be effective in their work with farmer [6][7]. There seems to be a wide gap existing between what the agricultural scientists have achieved on their experimental farms and research stations, and the average yield obtained on farmers' farms. Extension personnel criticize the research arm for not developing appropriate technology while research personnel often criticize extension for non-delivery. This mutual criticism often destroys trust between research and extension personnel. Farmers ultimately suffer by benefiting from neither research nor extension effort. Yet, the real and main factors affecting extension professionals in technology dissemination has to a little extent been investigated so far and led to the study of the factors affecting the performance of extension professionals in the transfer of agricultural technologies in Enugu State.

**Objectives of the Study:** The overall purpose of the study is to ascertain the factors affecting the performance of extension professionals in the transfer of agricultural technologies in Enugu State. Specifically, the study is meant to:

1. Describe the socio-economic characteristics of the extension professionals in Enugu State.
2. Identify the factors affecting the performance of extension professional in the transfer of agricultural technologies in Enugu State.

**Methodology:** The population for this study included all agricultural extension professionals in Enugu State Agricultural Development Programme (ENADEP). ENADEP is divided into three agricultural zones namely Enugu north, Enugu south and Enugu east zones. To draw a representative sample, in ENADEP headquarter, five (5) out of eight (8) respondents were randomly selected. In Enugu north zone 14 out of 34 respondents were randomly selected. In Enugu south zone 14 out of 28 respondents were randomly selected while in Enugu east zone 14 out of 26 respondents were randomly selected. A total number of forty-seven (47) respondents were sampled from the ranks of programme manager, directors, zonal manager, zonal extension officer, block extension agents, village extension agents and subject matter specialists from the three agricultural zones.

To measure the personal characteristics of the respondents, relevant questions were asked on the extension professionals' age, marital status, gender, educational qualification, year of experience and frequency of posting. To identify extension professionals' area of specialization, different areas of extension components such as food crops, tree crops, livestock, unified extension, etc were listed for the

respondents to indicate the area that applies to them. To ascertain the number of town communities covered, respondents were asked to indicate the actual number of towns they were assigned for the transfer agricultural technologies. The mean number of towns covered was finally ascertained.

To identify the extension professionals' perceptions on farmers' acceptance of technologies disseminated, respondents were asked to indicate "Yes (1) or No (0)" to the variables listed, such as; very ready to accept new ideas and practices, Very rigid to tradition, etc. To identify factors affecting the performances of extension professionals in the transfer of agricultural technologies in Enugu State, a Five Point Likert-Type scale of; to a large extent = 3, to a little extent = 2 and to no extent =1 was used to identify these factors. The values on the Likert-type scale were added and the product was divided by 3 to get a mean score of 2.0; hence variables with mean scores of 2.0 or above were regarded as major factors that affect the performance of extension professionals in the transfer of agricultural technologies in Enugu state.

#### **Results and Discussion:**

##### **Socio-Economic Characteristics of Respondents:**

Data in Table 1 show that majority (70.20%) of the extension professionals were within the age range of 40 - 49 years. The mean age of the extension professionals was 44.71 years, indicating that extension professionals in Enugu State were predominantly in their active ages and hence high productive stage.

The finding also shows that 61.70% of the extension professionals were males while 38.30% were females. This implies that both sexes are engaged in extension works/services but over half of the extension professionals were males. Hence, the result revealed less sensitivity to gender equality in human resource recruitment and selection process in extension organization. According to Sokoya (1998) low participation of female extension agents delimits agricultural technology transfer efforts to female farmers.

Analysis of the educational status of the respondents shows that majority (46.80%) got B.Sc. indicating that many of the extension professional were literate. This foregoing analysis shows that the respondents were highly educated and this debunks the notion that agricultural extension work in Nigeria is a dumping ground for drop-outs.

In terms of work experience, a greater proportion (31.90%) of the extension professionals had above 16 years work experience, the mean year of work experience was 10.96 years, implying that majority of the extension professionals had been in the profession for not less than 10 years.

Result in Table 1 shows that majority (68.10%) of the

extension professionals affirmed that they were reposted every 4 years to new stations. This shows that reposting of extension professionals to new stations will help in the effective transfer of agricultural technologies to areas where such technologies are deficient or absent.

**Table 1: Percentage distribution of respondents by socio-economic characteristics (N= 47)**

| Variable                         | F  | %     | M     |
|----------------------------------|----|-------|-------|
| <b>Age (Years)</b>               |    |       |       |
| 40 – 49                          | 33 | 70.20 |       |
| ≥ 50                             | 9  | 19.10 |       |
| 30 – 39                          | 3  | 6.40  | 44.71 |
| < 20                             | 1  | 2.10  |       |
| 20 – 29                          | 1  | 2.10  |       |
| <b>Sex</b>                       |    |       |       |
| Male                             | 29 | 61.70 |       |
| Female                           | 18 | 38.30 |       |
| <b>Educational level</b>         |    |       |       |
| B.Sc                             | 22 | 46.80 |       |
| Diploma in Agric                 | 10 | 21.30 |       |
| HND                              | 6  | 12.80 |       |
| OND in Agriculture               | 4  | 8.50  |       |
| WASC                             | 3  | 6.40  |       |
| First School Leaving Certificate | 1  | 2.10  |       |
| M.Sc                             | 1  | 2.10  |       |
| <b>Work Experience</b>           |    |       |       |
| <b>Years</b>                     |    |       |       |
| >16                              | 15 | 31.90 |       |
| 5-10                             | 13 | 27.70 | 10.96 |
| 11-16                            | 10 | 21.30 |       |
| <5                               | 9  | 19.10 |       |
| <b>Frequency of posting</b>      |    |       |       |
| Every 4 years                    | 32 | 68.10 |       |
| Every 3 years                    | 15 | 31.90 |       |

F=Frequency; M=Mean

**Agricultural extension professionals’ area of specialization:** The majority 38.30% of the respondents were in the food crops component, while the minority 2.10% specialized in the Women In Agriculture (WIA) component. This shows that allocation of staff to encourage women participation

in agriculture is poor. This finding implies that the poor allocation of staff in Women In Agriculture will adversely affect those areas in agriculture where women show great interest such as, processing of agricultural products, production of detergent and soap, home making, etc.

**Table 2: Distribution of respondents on the basis of extension component specialization (N=47)**

| Agricultural extension area of specialization | F  | %     |
|---|----|-------|
| Food crops                                    | 18 | 38.30 |
| Livestock                                     | 11 | 23.40 |
| Unified extension                             | 7  | 14.90 |
| General agriculture                           | 6  | 12.80 |
| Tree crops                                    | 4  | 8.50  |
| Women in agric                                | 1  | 2.10  |

**Number of towns communities covered by extension professionals in the transfer of agricultural technologies:** The findings showed that greater proportion (49.00%) of the respondents covered between 3 and 6 towns. The mean number of town covered by the extension professionals was 6 towns. It should be noted that the lower the town communities assigned to be covered by extension professionals, the better the rate of transfer of agricultural technologies to the farm families. However, the greater the number of town

communities, the greater the number of farm families to an extension agent which may result to difficulty in the transfer of agricultural technologies. It is noted that a critical problem facing agricultural extension in Nigeria is the insufficient number of agricultural extension workers that provide service to the huge population of farm families [8]. The density of extension workers in relation to number of farm families has been a perennial problem in Nigeria in the transferring of agricultural technologies [8].

**Table 3: Distribution of respondents on the number of towns communities covered by extension professionals in the transfer of agricultural technologies in Enugu State (N=47)**

| No of Town | F  | %     | M    |
|------------|----|-------|------|
| 3-6        | 23 | 49.00 |      |
| 7-10       | 11 | 23.40 | 5.60 |
| <3         | 8  | 17.00 |      |
| 11-14      | 5  | 10.60 |      |

F= Frequency; M= Mean

**Extension professionals' perception on farmers' acceptance of technologies disseminated:** Entries in Table 4 shows that majority (44.70%) of the respondents noted that farmers were willing to learn and cooperate with the extension professionals, only 4.30% affirmed that farmers were unwilling to change

to modern agricultural practices. Indication of positive acceptance and cooperation of farmers by majority of the respondents indicates that farmers will be apt to adopting new introduced agricultural technologies.

**Table 4: Distribution of respondents according to their perception on farmers acceptance of technologies disseminated (N=47)**

| Percieved attitude of farmers towards technologic    | F  | %    |
|--|----|------|
| Willing to learn and cooperate                       | 21 | 44.7 |
| Very ready to accept new ideas and practices         | 11 | 23.4 |
| Very rigid to tradition                              | 8  | 17.0 |
| Uncooperative with extension moves                   | 5  | 10.6 |
| Unwilling to change to modern agricultural practices | 2  | 4.3  |

**Respondents' perception of factors affecting their performances in the transfer of agricultural technologies:** Analysis of the identified problems presented in Table 5 revealed that poor transport facilities for extension staff (M = 3.66), was perceived as serious mobility problems affecting the performances of the respondents in the transfer of agricultural technologies. The administrative and personnel problems that militate the transfer of

agricultural technologies included Non – involvement of extension workers in programmes planning (M = 3.15). The result also show that the economic and customary problems affecting the performances of extension professionals in the transfer of agricultural technologies included lack of inputs (M= 3.30) and poor salary (M= 3.26). Also irregular evaluation pattern (M= 2.36), lack of adequate directives from headquarters (M= 2.32) and unclear evaluation

pattern (M= 2.17) were perceived as serious project evaluation factors affecting the performance of extension professionals in the transfer of agricultural technologies.

Meanwhile unqualified staff (M= 1.89), frequent transfer of staff (M= 1.70), Lack of cooperation by local people in programs implementation (M= 1.66), difficulty in relating to farmers (M= 1.64) and heavy supervisory functions (M= 1.47) were not perceived as

serious factors affecting the transfer of agricultural technologies in Enugu State. The standard deviation of the extension professionals with respect to the perceived factors affecting their performance shows that the respondents' had greater variation from the average on their individual perceptions. This implies that on most of the problems the respondents do not share close views with each other.

| <b>Variables</b>  | <b>M</b> | <b>S.D</b> |
|---|----------|------------|
| <b>Mobility problem</b>   |          |            |
| Poor transport system   | 3.66 *   | 0.668      |
| Lack of vehicles  | 3.11*    | 0.890      |
| Non-motorable roads/inaccessible roads  | 2.68*    | 1.086      |
| <b>Administrative problems</b>  |          |            |
| Extension workers not involved in programme planning                                      | 3.15*    | 1.000      |
| Local people not involved in program planning   | 2.89*    | 1.068      |
| <b>Personnel/staff problems</b>   |          |            |
| Inadequate staff  | 3.43*    | 0.801      |
| Late arrival of inputs  | 2.94*    | 1.071      |
| Assignment of non extension work  | 2.57*    | 1.193      |
| Lack of promotion   | 2.40*    | 1.330      |
| Lack of extension instructions  | 2.19*    | 1.393      |
| Programme not related to the needs of the community                                       | 2.15*    | 1.318      |
| Unqualified staff   | 1.89     | 1.493      |
| Frequent transfer of extension staff  | 1.70     | 1.301      |
| Heavy supervisory functions   | 1.47     | 1.120      |
| <b>Economic problems</b>  |          |            |
| Lack of input   | 3.30*    | 0.907      |
| Poor salary   | 3.26*    | 1.052      |
| Lack of farmers' finance (loan)   | 3.19*    | 0.851      |
| Lack of money   | 3.11*    | 0.961      |
| Poor marketing arrangement  | 2.81*    | 0.825      |
| Unfavourable prices   | 2.68*    | 0.980      |
| <b>Customary and traditional problems</b>   |          |            |
| Illiteracy of farmers   | 2.66*    | 1.203      |
| Reluctance of farmer to accept new practices due to attachment to traditional old beliefs | 2.13*    | 1.227      |
| Lack of cooperation by local people in programs implementation                            | 1.66     | 1.206      |
| Difficulty in relating to farmers   | 1.63     | 1.150      |
| <b>Evaluation</b>   |          |            |
| Irregular evaluation of projects  | 2.36*    | 1.092      |
| Lack of adequate directives from headquarters   | 2.32*    | 1.270      |
| Unclear evaluation pattern  | 2.17*    | 1.129      |

Note: \* perceived constraints; S.D= Standard deviation

**Discussions:** Most of the respondents were reposted at least every four years intervals, showing that the extension professionals were not frequently transferred. Respondents engage majorly in food crop

extension component indicating that many of the extension professionals specialized in food crops production and as such would deliver more readily crop production technologies than any other aspect

of extension. The mean number of town covered by the extension professionals was 6 towns implying that the greater the numbers of towns covered the greater the number of farm families to an extension agent which may result to difficulty in the transfer of agricultural technologies. Indication of farmers' willingness to learn and cooperate with the extension professionals indicates that farmers will be apt to adopting new introduced agricultural technologies.

In the area of factors that affect the performance of extension professionals mobility problems such as, poor transport facilities for extension staff (M = 3.66), lack of vehicle (M = 3.11) and non-motorable roads (M = 2.68), irregular evaluation pattern (M= 2.36), lack of adequate directives from headquarters (M= 2.32) and unclear evaluation pattern (M= 2.17) were perceived as serious project evaluation factors affecting the performance of extension professionals in the transfer of agricultural technologies. The result on the standard deviation of the extension professionals with respect to the perceived factors affecting their performance shows that the respondents' do not share close views with each other.

**Recommendation:** Based on the major findings, the study therefore recommends that government should

as a matter of urgency provide means of transport for all categories of extension professionals. All extension staff should be paid adequately and as when due. In the planning of programmes, government should involve the farmers and extension professionals instead of handing down instructions from headquarters to them in the programme that they are to implement. This will improve working relationship between the extension professionals and the farmers in programme implementation. There should be increased number and periodic training for extension professionals, as the ratio of extension professional to farm family is very wide. Finally, extension programme should be made the people's programme so as to meet the felt needs of the people.

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