

## ADOPTION LEVELS AND INFORMATION SOURCES OF "BROOD AND SELL" POULTRY OPERATORS

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### ABSTRACT

*The socio-economic characteristics, adoption levels and information sources of operators in Brood and Sell" poultry enterprise in Nsukka Agricultural Zone of Enugu State were examined. Results of the study portrayed the operators as being highly innovative, exposed to a wide range of interpersonal information sources on poultry management and, hence, capable of communicating/disseminating such information to neighbouring rural poultry farmers. The study further revealed a gap in information delivery via mass media (radio/television), which calls for increased extension efforts. It was recommended that the Agricultural Development Programme (ADP) should integrate the operators into its "contact farmers" extension strategy for multiplier effects, while governments should subsidize agricultural extension air time charges.*

**Key words:** Poultry Management, adoption, information Extension.

### INTRODUCTION

The greatest challenge facing the livestock industry in Nigeria is how to accelerate the production of animal protein to feed a population whose size is ever growing fast. The level of consumption of meat and animal protein in Nigeria is grossly below the minimum recommended standards (Obioha, 1992). The development of the poultry industry appears to be the fastest means of solving the problem of animal protein deficiency in the country. This is based on the special attributes of poultry, which include: short generation interval and rapid fecundity, rapid turnover of invested capital, small space requirement and low initial capital investment requirement (NAERLS, 1993).

A number of constraints to livestock development have been implicated. Among these are: vectors and animal disease; feeds and feeding; research and development, extension and training; manpower training and utilization; lack of data and information; finance and small flock size (Ibe, 1999)

One of the ways to address these constraints is through the management and operation of an effective and efficient extension system. An effective and efficient extension system ensures mass adoption and spread of innovative practices among farmers in the rural neighbourhood. The most important factors affecting adoption behaviour of farmers are their personal and socio-economic characteristics. Ajala (1992) in a study of factors associated with adoption of improved practices by

goat producers in Southeastern Nigeria, reported that age, education, sex, herd size, organizational participation, nature of farming, experience and management systems were all positively related to adoption.

Also information sources have been reported as important stimulants to individuals in the adoption process (Rogers, 1995). According to Venkatesan (1994), with increasing globalization of information through modern communication technologies, farmers should have access to various channels of information. It has been recommended that extension should forge new link; to create a network for sharing knowledge and experience (World Bank, 1990). However, in spite of several policy initiatives of the Federal Government of Nigeria manifested through different extension systems the livestock sub-sector has not recorded any significant growth due to the relative weak linkages and support which has characterized extension activities in this sector (Oyebanji, 1994).

A recent report (Ibe, 1999) indicated a near collapse of large scale chicken enterprise following the Structural Adjustment Programme of the Federal Government of Nigeria. This makes alternative production systems-using improved strains of birds under the traditional extensive management systems imperative. This alternative, however, has a major obstacle, namely, the facilities and special skills required for successful brooding of newly hatched improved chicks which is not common among a majority of the rural poultry producers.

"Brood and sell" is a relatively new poultry

enterprise which seeks to give improved day old chicks a start in life by rearing them intensively (under controlled temperature, relative humidity and air flow) from day old until they are 4-6 weeks old when they are then sold out to other farmers, especially rural dwellers, who undertake the rearing of these birds (Mostly under free-range system) up to market weight/point of lay.

The emergence of "Brood and sell" poultry operators – a specialized group of producers who undertake to rear newly hatched chicks intensively from day old to 4 - 6 weeks of age, promises to help overcome this obstacle. Moreover, their frequent interactions with dealers on day old chicks, feeds, drugs and vaccines as well as veterinary practitioners places them in a position where they could readily complement the efforts of the extension services in the dissemination/diffusion of innovative practices in poultry production to neighbouring rural poultry farmers.

### **Purpose of the Study**

The purpose of this study was to investigate the adoption levels and information sources of operators of the 'brood and sell' poultry enterprise. Specifically, the objectives were to:

1. describe the personal/socio-economic characteristics of the operators in the "brood and sell" poultry enterprise;
2. ascertain the level of adoption of improved brooding management practices by the operators; and
3. ascertain the various sources of information on poultry management available to the operators.

### **MATERIALS AND METHODS**

The study covered all the six Local Government Areas (Isi-Uzo, Udenu, Nsukka, Igbo-Eze south, Igbo-Eze North, and Uzo-Uwani) that make up Nsukka Agricultural Zone. Three Local Government Areas Nsukka, Udenu and Igbo-Eze South were purposively selected (based on concentration of brooding activities) for sampling and data collection.

From each of these three Local Government Areas, two towns were randomly selected, namely: Nsukka and Obimo from Nsukka Local Government

Area; Orba and Igugu from Udenu Local Government Area; and Ibagwa-Aka and Ovoko from Igbo-Eze South Local Government Area, making a total of six towns. From each town, ten operators were randomly selected from a list drawn in collaboration with day old chicks dealers and veterinary practitioners in the area. Thus, a total of sixty operators constituted the sample-size.

Structured interview schedule was used to elicit information from respondents. Frequency distribution, percentage, mean, and rank orders were used in analysing the data collected.

## **RESULTS AND DISCUSSION**

### **Socio-economic characteristics of the operators**

The socio-economic characteristics of the respondents.

#### **Age (Years)**

The Table 1 reveals that most (63.0%) of the respondents were within the age range of 31 to 40 years, while the average age was 35 years; indicating that the operators were relatively young. This is an advantage for the adoption and spreading of innovative practices since young people are likely to accept and serve better as agents of innovation transfer (Belloncle, 1985).

#### **Educational Status**

Table 1 also shows that only three percent of the respondents had no formal education. Majority (53.0%) of the respondents had post secondary educational qualifications; indicating that the enterprise is dominated by very literate people. Again, this is an advantage for innovation adoption and transfer. There is a positive correlation between level of education and the acceptance of the ideas by farmers (Ajala, 1992)

#### **Membership of Social Organisations:**

It is also evident from Table 1 that about 38.0% of the respondents belonged to between 1 and 2 organisations. About 55.0% belonged to between 3 and 4 organisations, while only about seven percent belonged to 5 or 6 organisations. On the average, each operator belonged to at least 3 organisations; indicating high level of social participation, and hence, high innovativeness among the respondents due to group dynamic effects (Swanson, 1984).

Table 1: Percentage distribution of respondents according to socio-economic characteristics (n=60).

Socio-economic Characteristics	Percentage	$\bar{X}$
Age (Years)		
21 – 30	20.00	
31 – 40	63.33	
41 – 50	15.00	35.3
51 – 60	1.67	
Educational Status		
No formal education	3.33	
Primary education	30.00	
Secondary education	13.33	
Post Secondary Education	53.33	
Membership of Social Organisations		
1 – 2 organisations	38.33	
3 – 4 organisations	55.00	3.0
5 – 6 organisations	6.67	
Estimated annual income from “brood and sell” poultry operation		
₦ 10,0000 – ₦ 15,000	15.00	
₦ 15,001 – ₦ 20,000	18.33	
₦ 20,001 – ₦ 25,000	26.67	20,000
₦ 25,001 – ₦ 30,000	13.33	
₦ 30,001 – ₦ 35,000	6.67	
₦ 35,001 – ₦ 40,000	20.00	
Stock Size		
0 – 500 birds	76.67	
501 – 1000 birds	11.67	
1001 – 1500 birds	3.33	454
15001 – 2000 birds	6.67	
2001 or more birds	1.67	

Table 2: Percentage distribution of respondents on different stages of adoption

S/N	PRACTICE	ADOPTION STAGE							TOTAL
		UNAWARE	AWARE	INTEREST	EVALUATION	TRIAL	ADOPTION	DISCONTINUED	
1.	Isolation of brooding house	-	3.3	-	-	-	96.7	-	100
2	Removal of old litters	-	3.3	-	-	-	96.7	-	100
3	Regular cleaning of house/cage	-	-	-	-	-	100	-	100
4	Keeping chicks of the same age together	-	-	-	-	-	100	-	100
5	Vaccination from day old to 4 weeks	-	1.7	-	5.0	-	93.3	-	100
6	Use of foot bath/dip vat.	3.3	-	-	-	-	96.7	-	100
7	Use of sanitizers in drinking water	1.7	-	-	-	8.3	90.0	-	100
8	Close observation of brooding house	-	-	-	-	-	100	-	100
9	Cleaning of drinkers	-	-	-	-	-	100	-	100
10	Proper disposal of used vaccine vials	83.3	-	6.7	5.0	3.3	1.7	-	100
11	Use of attraction light 1 <sup>st</sup> 2 – 3 days	-	1.7	10.0	5.0	6.7	76.7	-	100
12	Isolation of sick birds	-	5.0	1.7	-	3.3	90.0	-	100
13	Use of electric/kerosene brooder heat	-	3.3	-	-	-	96.7	-	100
14	Debeaking from 0 – 9 days old	83.3	-	13.3	3.3	-	-	-	100
15	Record Keeping	-	3.3	-	-	-	96.7	-	100
16	Providing feed at old times	-	-	3.3	3.3	-	93.3	-	100
17	Destroying all chick boxes	83.3	6.7	-	5.0	1.7	5.0	-	100
18	Providing fresh clean water always	-	-	3.3	-	-	96.7	-	100
19	Providing recommended floor space for chicks	-	-	6.7	-	-	93.3	-	100
20.	GENERAL CLEANLINESS	-	-	-	-	-	100	-	100

Table 3: Respondents' sources of information on poultry management by rank

Source of Information	Percentage *
ADP Extension Agents	25.00
Day old chick dealers	19.10
Veterinary Doctors	18.75
Feed dealers	17.43
Fellow poultry farmers	16.78
Radio/TV	9.21
Textbooks/Journals	7.24
Livestock Bulletins/Magazines	4.93
Farmers/children	2.96
Agricultural Science Teachers	2.63
Newspaper	0.99

\*Multiple responses.

### Estimate annual income from "brood and sell"

Table 1 indicates, that 15.0% of the respondents earned between N10,000 and N 15,000 per annum from "brood and sell" poultry activities, 18.0% earned between N 15,001 and N 20,000 majority (about 27.0%) earned between N 20,001 and N 25,000. About 13.0% earned between N 25,001 and N 30,000, while up to 20% earned over N 35,000. The average annual income was N 20,000.001, indicating high economic incentives which would attract more participants into the business and hence, inducing widespread adoption/diffusion of innovative practices.

### Stock size

The majority (about 77.0%) of the respondents operated a stock size of 0-500 birds, about 12.0% operated 501 – 1000 birds, about three percent reared 1001 – 1500 birds, while about seven percent operated 1501 – 2000. Only about two percent reared up to 2001 or more birds. Indications here are that the observed large stock size could have positive influence on adoption of innovative practices since herd size is significantly associated with adoption (Ajala, 1992).

### Level of Adoption of Improved Brooding Management Practices by the Operators

The distribution of respondents on different stages of adoption of improved brooding management practices is shown in Table 2. There was a virtual skipping of some stages viz: "awareness", "interest", "evaluation" and "trial", perhaps, due to the specific and compulsory nature of the practices.

Entries in Table 2 show that majority (77.0%)

of the respondents indicated that they had adopted 17 out of the 20 practices. These practices ranged from isolation of brooding house, which was adopted by 96.7% of the respondents, to providing recommended floor space for chicks, which was adopted by 93.3% of the respondents. This near total adoption situation is not surprising since artificial brooding of day old chicks is itself an innovation with precise technical and managerial specifications which the operators could not afford to toy with without running into heavy losses.

The remaining three practices (proper disposal of used vaccine vials, debeak and destroying chick boxes) were, however, unknown to nearly all (about 83.0%) of the respondents. This high level of unawareness of certain practices has very serious implications. For instance, improper disposal/destruction of used vaccine vials/chick boxes could lead to the spread of infections on the farm with consequent high mortality rates and financial losses to the farmers. Similarly, failure to debeak the chicks at the appropriate age could bring about the incidence of cannibalism, which might lead to diseases and infections. Therefore, the extension services should be alert to its roles of informing the farmers about new development emanating from research.

### Availability and Sources of Information on Poultry Management to the Operators

Results of this study showed that only 25.0% of the farmers accepted having contacts with extension agents (Table 3) on poultry related issues, while majority (75.0%) had no contacts with agents on poultry issues, indicating a gap which should be filled through increased extension efforts. For instance, based on the socio-economic characteristics and adoption levels of

the brood and sell operators described above, they have potentials to help the extension service in the dissemination of information to neighbouring poultry farmers. The ADP can, therefore, integrate them into its "contact farmer" extension strategy for purposes of multiplier effects.

The other major interpersonal sources through which the respondents obtained information on poultry management were: day old chicks dealers (19.1%) veterinary doctors (18.8%), feed dealers (17.4%), and fellow poultry farmers (16.8%). A possible explanation for these findings could be the high level of interpersonal contact/interactions provided by these sources, coupled with the business-like nature of such interactions. The position of radio/TV (5<sup>th</sup>) as information sources raises some doubts as to what extent the extension services explore the use of these media.

This finding agrees with Agwu (2000) who reported that mass media (radio/television) did not play a leading role in informing farmers about improved production technologies. A possible explanation of this could be the constraints imposed by commercialization of radio/television stations, which compel the extension services to pay exorbitant charges for air time (Arokoyo, 1998).

The implication of this finding is that Governments should intervene either by compelling radio/television stations to carry stipulated amounts of free agricultural extension air times per week, or by subsidizing the charges payable for such air times.

## CONCLUSION

Analysis of the socio-economic characteristics of "brood and sell" poultry operators showed that the enterprise was dominated by relatively young and highly educated people, an advantage for innovation adoption and transfer. Results of the study also portrayed the operators as being highly innovative, exposed to a wide range of interpersonal sources of information on poultry management viz: day old chicks dealers, veterinary doctors, feed dealers and fellow poultry farmers. They are, therefore, capable of communicating/disseminating such information to neighbouring rural poultry farmers. The study further revealed a gap in information delivery via mass media (radio/television), which calls for increased extension efforts.

It is recommended that the ADP should integrate the operators into its "contact farmer" extension strategy for purposes of multiplier effects. Governments

should also either compel radio/television stations to carry stipulated amounts of free agricultural extension air times per week, or subsidize the charges payable for such air times.

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