

Leadership Qualities of Extension Workers as Determinants of Innovations Adoption Behaviour of Farmers

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Abstract: The study is carried out to examine the influence of leadership qualities on innovations adoption Behaviour of farmers. The study was conducted in Bayelsa State, Nigeria. It adopted a field survey. A sample of 300 farmers was used as respondents, to elicit their perception of the leadership qualities of extension workers and also make a self-assessment of their own innovations adoption behaviour. Two instruments were designed to obtain information; the leadership behaviour battery and innovations adoption scale. The research questions and hypothesis were analyzed, using descriptive statistics and multiple regression analysis. The results revealed that 7% of the farmers had low and 52.33% had moderate adoption behavior, while 38% and 2.67% of the farmers had high and very high innovations adoption behavior respectively.. Also it was revealed that three variables were statistically significant determinants of innovations adoption behaviour namely; trust earning, conflict resolution behavior and vision, while intelligence and communication skills, were not significant. The non-significance was attributed to resentment and attitude formation. The following recommendations were proffered; training and retraining of extension workers on leadership behaviour, government should improve on the incentives given to extension workers, remove bureaucratic bottlenecks and involve farmers in extension programme planning.

Key words: Communication skills % Conflict resolution % Intelligence % Trust earning % Vision

INTRODUCTION

Nigeria's agricultural policy pays much attention to the attainment of self-sufficiency and security in food and fibre production, which is yet to be actualized. One strategy by which this could be achieved as conceived in the policy is the transmission of modern technologies and innovations to rural farmers who constitute about 75 percent of farmers through a nationwide, unified and all-inclusive extension delivery system under the agricultural development programme that agricultural production has increased over the years, from 102.546 billion metric tons in 2000 to 283.91 million metric tons in 2008 and its percentage share to Gross Domestic Product (GDP) also increased from 26.29 percent to 42.07 percent during the period [1, 2].

Despite the positive trends in production in recent years, it is however, argued that production increases have come about mainly through expansion in land area put under cultivation rather than productivity increases [3]. The recorded increase still falls short of the objective of self-sufficiency and security in food and fibre production. The country is still a net importer of food, foodstuff and other agricultural products [4]. In addition, Eke [5] and Omotola [6] also states that Nigeria expends N250 billion yearly to import agricultural products and rice alone gulps N60 billion. The inability to satisfy the food needs through local production is that farmers do not adopt innovations due to institutional deficiencies in the development and delivery of relevant information and assistance from national extension system [7, 8].

One factor that must be borne in mind is the psychology of farmers in the interaction between them and the extension workers, in terms of norms, values and cultural patterns. More often, the extension workers come from an alien culture with quite variant ways of life. Widespread resentment among farmers towards extension agents was observed [9]. They resent advice from extension agents who adopt superior attitude. In Nigeria, farmers are mostly illiterates and with small holding, but very conscious of domination as they have their ego and dignity to protect. They also see the educated as the cause of widespread corruption and the collapse of the economy. This is one reason why extension service delivery is stagnated in addition to other problems militating against the successful delivery of information for transfer of technology and innovations.

The success of an extension service organization is reliant on the leader's ability to optimize human resources [10]. Also, Dubrin opines that effective organization requires effective leadership and that organizational performance will suffer in direct proportion to neglect of leadership [11]. Furthermore, Maritz asserted that the effectiveness of any set of people is largely dependent on the quality of its leadership, effective leader behaviour, which facilitates the attainment of the follower's desire, which then result in effective performance [12]. The extension worker fits in as a leader as he is saddled with the responsibility of capacity building through advising farmers on opportunities in production, marketing, conservation and family livelihood, as well as facilitating development of local skills, organizing links with other programmes and related information and developing and transferring new technologies to farmers [13].

It is evident that technologies and innovations are available and specialized agricultural extension officers have been employed and government have at various times provided credit to farmers, yet, these technologies and innovations are sparingly adopted for sustainable agricultural production. This is an indication that there are some endogenous factors that could be responsible for the non-adoption of innovations. It is against this background that this research is directed at looking inwards on the leadership qualities of extension workers as they could have profound effects on the farmers' innovations adoption behaviour and decisions. The leadership qualities under study include:

- C Intelligence.
- C Vision.
- C Conflict resolution behaviour
- C Communication skills.
- C Trust earning.

Objectives of the Study: The broad objective of the study is to assess the influence of leadership qualities of extension workers on innovations adoption behaviour of farmers. The specific objectives are to:

- C Classify innovation adoption behaviour of farmers.
- C Determine the relationship between leadership qualities, such as intelligence, vision, conflict resolution behaviour, communication skills and trust earning on innovations adoption behaviour.
- C Determine the joint effect of the leadership qualities under study on innovations adoption behaviour.

Research Questions:

- C What is the innovations adoption behavior of farmers?
- C What are the influences of the leadership qualities on innovations adoption behavior of farmers?
- C What is the joint effect of leadership qualities on innovations adoption behavior of farmers ?

MATERIALS AND METHOD

The study adopted a field survey. A sample of 300 farmers was randomly selected from 3 agricultural zones, with one local government representing each of the agricultural zones of Bayelsa State, Nigeria. Relevant information for analysis was elicited through the use of two sets of questionnaire that were developed by the researchers. The questionnaire includes the leadership behaviour battery and innovation adoption behaviour scale, which were structured on a five-point rating scale. The leadership behaviour battery consists of leadership qualities scales, which has various chosen norms based on the number of question items in it: Intelligence, 65; Vision, 25; Conflict resolution behavior, 85; Communication skills 68; Trust earning 80, while the innovations adoption behavior scale has a norm of 65. Adoption behavior was classified as follows: Very low 20 - 44; Low 45 - 64; Moderate 65 - 84; Very high 105 - 125.

Both questionnaires were administered, to the farmers to assess the leadership behaviour of extension workers as they perceive of them. This is because the perceived leadership qualities of an extension worker can have profound influence on the psychology of the people (farmers) who see them as role models. The innovations adoption behaviour scale is meant to have a direct assessment of the attitude of the farmer toward innovations adoption given an environment under which they have to develop positive attitudes. The data for analyses were obtained from the mean values of responses from each of the scales made by each respondent. The study adopts the use of descriptive statistics and multiple regression analysis to capture the causal relationship between the various leadership qualities and innovations adoption behaviour of farmers. The explicit form of the regression model is specified as follows:

$$Y = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + e_j$$

Where:

Y = Innovation adoption behaviour of farmer

b = Intercept

b's = Coefficients of the parameter estimates

X₁ = Intelligence

X₂ = Vision

X₃ = Conflict resolution behaviour.

X₄ = Communication skills

X₅ = Trust earning

Hypotheses: The study was guided by the following null hypotheses (Ho), which were tested at P < 0.05

- C There is no significant influence of intelligence, vision, conflict resolution behaviour, communication skills and trust earning on innovations adoption behaviour.
- C There is no significant joint contribution of the leadership qualities under study to innovations adoption behaviour of farmers.

RESULTS AND DISCUSSION

The result presented in table 1 indicates that 7% of the farmers showed low innovations adoption behaviour, 52.33% of them showed moderate adoption behaviour, 38.% showed high innovations adoption behaviour and only 2.67% of the farmers showed very high innovations adoption behaviour. The result also revealed that the mean innovations adoption behaviour of all the farmers were 81.4767. This indicates that there is much to do to raise the farmers' attitude towards the adoption of innovations.

Influence of Intelligence on Innovations Adoption

Behaviour of Farmers: The result on table 2: reveals that intelligence has no significant influence on innovations adoption behaviour of farmers and hence was excluded in a stepwise regression. The finding disagrees with the opinion of Asiabaka and Owens who states that the perceived intelligence, reliability or expertise of the communicator gives credibility to the source of information [3]. This indicates that what actually gives credibility to an extension agent is not in his level of intelligence, but in other values. In traditional societies, most of the people are mediocre and tend to resent people who exhibit high level of intelligence, because of perceived fear of loss of power and dominant role they play among their kinsmen, which arises from the feeling that their views will be eclipsed by superior knowledge and creative thinking. For this reason, innovations adoption will be strenuously resisted. However, the opinion of Asiabaka and Owens should not be pushed aside in a hurry. The incentive to adopt an innovation is in reality created because the farmer adores the extension workers' capacity for constructive thinking, reasoning and problem solving. The extension worker's ability to unveil the abstract ideas in an innovation in context to the understanding of the farmer makes him/her to repose confidence in the source of the information. The confidence developed consequently, helps to raise the farmers' interest towards adoption.

Table 1: Classification of innovations Adoption Behaviour of farmers

Adoption Behaviour Description	Number of Respondents	Mean	Percentage %
Very low 20- 44	0	0	0
Low 45-64	21	56.38	7.00
Moderate 65-84	157	72.23	52.33
High 85-104	114	91.12	38.00
Very high 105 - 125	8	110	2.67
Total	300	81.4767	100%

Table 2: The relative influences of leadership qualities on innovations adoption behavior of farmers.

Model	Unstandardized coefficients		Standardized coefficients		T - statistics	
	B	Std Error	Beta	t	Sig	
1 (constant) X ₅	30.823	4.083	.587	7.549	0.000	
	.597	.048		12.520	0.000	
2 (constant) X ₅ X ₂	14.480	4.344		3.333	0.001	
	.401	.051	.394	.835	0.000	
	.430	.058	.375	7.468	0.000	
3 (constant) X ₅ X ₂ X ₃	17.871	4.557		3.921	0.000	
	.408	.051	.401	8.023	0.000	
	.439	.057	.383	7.658	0.000	
	-.138	.060	-.099	-2.303	0.022	

Dependent variable: Innovations adoption behaviour.

Excluded variables: Intelligence, communication skills

Table 3: Multiple regression summary of joint contribution of leadership qualities to innovations adoption behaviour.

R = 0.587a		R = 0.6706 _b		R = 0.677c		
R ² = 0.345		R ² = 0.448		R ² = 0.458		
Adj R ² = 0.342		Adj R ² = 0.446		Adj R ² = 0.453		
Std error = 9.51183		Std error = 8.74230		Std error = 8.67961		
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Model	Sun of squares	Df	Mean sq	F	Sig	Remark.
Regression	14181.314	1	14181.314	156.743	.000a	Sig
Residual	26961.522	298	90.475			
Total	41142837	299				
Regression	18443.760	2	9221.880	120.661	.000b	Sig
Residual	22699.077	297	76.428			
Total	41142.837	299				
Regression	18843.488	3	6281.163	83.376	.000c	Sig
Residual	22299.349	296	75.336			
Total	41142.837	299				

It was recommended that policy should be adopted that extension personnel who will come in contact with the farmers have appropriate background and desire to inform farmers adequately to enable them to adopt an innovation. If the source of the information were not perceived as more knowledgeable and with innovative ideas, new technologies and innovations would not be adopted due to lack of confidence in the source of the information. An extension worker should usually be more knowledgeable than the farmers who he intended to develop.

The Influence of Vision on Innovations Adoption Behaviour of Farmers: The result on table 2 reveals that there is significant relationship between an extension workers' vision and innovations adoption behaviour of farmers. The result also indicates that farmers perceive extension workers as having high vision and indeed

contributes about 37.5 percent to innovations adoption. But this is an essential attribute of a leader that is expected to propel him to expend extra effort in pursuance of the goals of extension. The result confirms the finding of Oladosu who states that the conclusion of most farmers was that many extension agents seemed uninterested in their problems exhibited by the limited, one-sided communication and insensitivity to the farmers needs [14].

This is an indication of low organizational commitment and hence performance. Farmers as rational beings would want to emulate the enthusiasm of their leader. A leader who is not self-motivated and enthusiastic about his work can hardly influence the farmers positively to make decisions to adopting an innovation because his teachings would be seen as just to fulfill all righteousness to earn his pay and not to affect their lives positively.

The Influence of Extension Workers Conflict Resolution Behaviour on Innovations Adoption Behaviour of Farmers:

The result on table 2 also reveals that there is a significant influence of conflict resolution behaviour of extension workers on innovations adoption behaviour of farmers. This result is in consonance with the findings of Khalil *et al* who stated that conflict resolution is one of the core competency areas that extension workers should possess to foster organizational commitment [10]. In this direction commitment is measured in terms of the likelihood of a farmer adopting an innovation. Conflict resolution behaviour is essential because in every human relationship, conflicts are bound to happen due to variance in needs, values and goals. In farm organizations, the ability for cohesion is very necessary to eliminate differences among farmers, as unresolved conflict among them would make group teaching difficult. Farmers do not only resent extension workers, they also resent farmers who show domineering attitudes.

The Influence of Communication Skills of Extension Worker on Innovations Adoption Behaviour of Farmers:

From table 2, it was also revealed that communication skills exhibited by extension workers have no significant influence on the innovation adoption behaviour of farmers and hence it was excluded in the stepwise regression result. This is probably because most of the extension workers are from different ethnic groups and hence could not communicate with them in their own native language. Language barrier between the extension worker and the farmers who are still predominantly illiterates is a serious limiting factor to extension teaching and innovations adoption. On the other hand, if the communication process is being perceived as not mutual and tends to rub farmers of their self-worth, they would shrink back and innovations are not likely to be adopted because lack of mutual respect would be a very good reason to resent an extension worker. Johnson, Donohue, Atkin and Johnson posits that the quality of interpersonal communication within an organization is very important and that people with good communication skills helps groups to make innovative decisions and were promoted more frequently than individuals with less developed abilities [15]. Communication is a performance-based index of an individual's ability to effectively use communication behaviour in a given context.

The Influence of Trust Earning on the Innovations Adoption Behaviour of Farmers: The result on table 2, also reveal that there is a significant influence of trust

earning of extension workers on the innovations adoption behaviour of farmers. It indicates that farmers have confidence in extension workers. This result is in conflict with the finding that farmers mistrust outsiders and so will resent agents who take ready-made plans for them to follow without prior consultation because they are being directed or told what to do rather than being helped to make their decision, since it is not participatory they see themselves as mere tools and possibly exploited [16]. In this research, farmers trust extension workers because they have no cause to resent extension agents. This is also the submissions of Oladosu [14] that extension agents have over the years involved themselves in activities other than extension work has played against their reputation as development workers. Once a leader is seen as one that is trustworthy, what he presents would be relied on. This result also confirms the concept of 'herd behaviour' [17]. The psychology of adoption is rooted in trust that is built in the course of relationships. This is because farmers rely on the successes made by actors who they have learned to trust. This means that when farmers have confidence in their leaders (extension workers) 'herd behavior towards innovations adoption is most likely to occur. On the contrary, farmers would choose not to adopt an innovation.

The multiple regression summaries show that there is a significant joint predictive effect of the independent variables: Trust earning, vision and conflict resolution to innovations adoption behaviour, while intelligence and communication skills were excluded due to non-significance contribution effect in the model, with $R = 0.677$; $R^2 = 0.458$; $\text{Adj } R^2 = 0.453$; $F = 83.376$; $P < 0.05$

Conclusions and Implication: Farmers make decisions that may have far reaching effects, especially when it concerns the adoption of innovations. These decisions are made usually under a dynamic environment in which they produce. From the result it was revealed that farmers made innovative adoption decision when the extension worker is perceived as trustworthy, has capacity for conflict resolution and the vision to propel them to work. It was also discovered that farmers would resent an extension worker and shrink away from making innovation adoption decision when the extension agent or worker has low intelligence and inadequate communication skills. The implication of the result is that agricultural production would hardly reach an enviable height if the leader who the farmer interact with on regular basis are deficient in some vital leadership competencies.

Recommendations: To enhance higher innovations adoption behaviour among farmers, the researchers wish to advance these suggestions.

- C Extension workers are mostly under the service of government agencies; therefore, those institutional deficiencies that affect them especially the incentives given and bureaucratic procedures should be looked into more critically and improved upon.
- C There should be massive reorientation programme in mass media to purge farmers on some poor attitudes and resentment against extension workers because the causes of resentment may be wrong perceptions.
- C There is need to involve farmers to make them to have the feeling of stakeholders.
- C Extension workers should be trained and retrained for leadership effectiveness to be able to affect farmers' adoption behaviour.
- C Indigenous persons who can communicate in the farmers' own native languages should be trained to serve their people to enhance free flow of new ideas.

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