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FACTORS ASSOCIATED WITH THE DISCONTINUANCE OF SOME AGRICULTURAL INN0VATI0NS AMONG FARMERS IN EKITI NORTH OF ONDO STATE, NIGERIA

1995

FACTORS ASSOCIATED WITH THE DISCONTINUANCE OF SOME AGRICULTURAL INNOVATIONS AMONG FARMERS IN EKITI NORTH OF ONDO STATE, NIGERIA.

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A THESIS

SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN AGRICULTURAL EXTENSION AND RURAL SOCIOLOGY

FACULTY OF AGRICULTURE
OBAFEMI AWOLOWO UNIVERSITY
ILE-IFE, NIGERIA

1995

DEDICATION

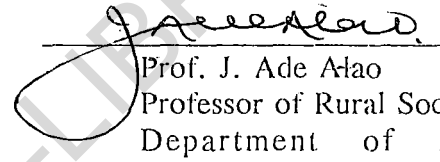
This work is dedicated to the Almighty God,

the Giver of life, and Folakemi

Joy.

CERTIFICATION

I certify that this research was carried out under my supervision by Mr. Kolawole Olutoyin Dare of the Department of Agricultural Extension and Rural Sociology, Faculty of Agriculture, Obafemi Awolowo University, Ile-Ife, Nigeria.



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ACKNOWLEDGMENT

Many hands contributed to the success of this work. I give profound gratitude to my supervisor, Professor J. Ade Alao for his in-locoparentis dispositions and sense of direction during the course of this research.

Worthy of special mention are Professor A.A. Jibowo, Dr. E.A. Laogun, Dr. A.A. Ajala(UNN), Dr. A.J. Farinde, Mr. Segun Ajetunmobi and Dr. A.T. Siyanbola for putting me *au fait* in the writing of this piece. I cannot but appreciate the spiritual, financial and brawn support given to me by Mr & Mrs Oloruntoba, Mrs Olayode and Mrs Vic. Adamolekun throughout the course of this write-up. Also, my sincere appreciation goes to Mr & Mrs Olabode, Engineer & Mrs C.O. Adeola, Mr Kayode Oladiipo and Mr. Taye Alabi for their unfailing love and support in my academic career.

Special thanks go to Mr. Ayo Babalola, Mr. Akinola Ogunleye, Mr. Akintunde Akinjide, Tayo Bamigboye, Sesan Falaki, Madam Janet Falaki, Chief Amoran, Jimmy George, and Engineer Rotimi Soremekun for their support as well. I also want to acknowledge Messrs. Sola Asa and Elijah Jegede for the help rendered in computer analyses of data and word processing respectively.

Mentioning the immense contributions of my colleagues, Femi Ajayi and Friday Omoregbee, is worthwhile. The spiritual help and brotherly love of Barrister 'Wole Adedeji, Henry Onuwe, Kayode Alakinde and Rotimi Oluwatusin are invaluable. I also appreciate the support of Pastor Joseph Adebayo, Pastor Alaba Emmanuel and Mr. Albert Oluwatimehin.

More importantly, I am greatly indebted to my objective and understanding father, Pa Kolawole EniOlorunda for being the sole resource person in my academics up to this level.

I also thank all the administrative staff of the Department of Agricultural Extension and Rural Sociology, Obafemi Awolowo University, Ile-Ife for their meaningful contributions to my success.

My heart-felt appreciation and gratitude go to my dear, Joy, for her unflinching love and morale boosting expressions.

I want to acknowledge the Council for the Development of Social Science Research in Africa (CODESRIA) in Dakar (SENEGAL), for the grant awarded me in writing this thesis. The Federal Government of Nigeria is also acknowledged for awarding me a Postgraduate Scholarship in respect of this postgraduate degree (M.Sc) programme.

Most of all, I owe all my allegiance to GOD ALMIGHTY who gave me enough impetus and courage in accomplishing this great task.

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ABSTRACT

The focus of this study was to identify factors associated with the discontinuance of some agricultural innovations among farmers in Ekiti North of Ondo State, Nigeria. Special emphases were placed on the: identification of the agricultural innovations introduced to farmers in the study area; identification of the innovations which had been adopted and later discontinued by farmers; identification of social and personal factors which are responsible for the discontinuance of the use of innovations among farmers; and analyses of the characteristics of farmers who discontinued the use of the adopted innovations.

The study was conducted in five rural communities which were randomly selected out of the thirty-one communities in the area. Structured interview schedule was used to obtain information from one hundred and fifty farmers in the project circle: Thirty farmers were selected in each of the five communities by simple random sampling. Descriptive statistical techniques such as frequency counts, percentages, means, standard deviation and weighted mean score were used to analyse the data. Correlation and regression analyses were used in determining the relationships between the variables investigated in the study.

The investigation showed that about seventeen agricultural innovations were introduced into the area since the inception of the World Bank Assisted Agricultural Development Project in Ondo State. The results also showed that all the innovataions were adopted except planting of yam minisett and alley farming. All the innovations

introduced (except improved maize and homestead fish production) were at one time or the other discontinued by farmers. The investigation revealed that a great proportion of farmers discontinued the use of innovations as a result of lack of funds, lack of inputs and, natural circumstances and hazards. About 88.0% and 81.3% of the farmers were risk-aversive and financially constrained, respectively, hence influencing discontinuance.

The study showed positive and significant correlations between discontinuance and sex ($r = 0.1875$), fatalism ($r = 0.3405$) and cost-profitability ratio of the innovation ($r = 0.2050$). Also, negative but significant relationship existed between discontinuance and cosmopoliteness ($r = -0.1889$), farm size ($t = -2.211$), relative advantage of the innovation ($r = -0.2661$), compatibility of the innovation ($r = -0.2265$) and, availability of the innovation ($t = -2.255$).

CHAPTER ONE

1. INTRODUCTION

1.1 Background Statement

The contemporary world's socio-economic demand gives no room for non-chalance and anachronism in man's approach towards resource management and utilization in the production of essential goods and services. Effective utilization of available resources is an imperative as a result of the world teeming population which competes with the former.

Although faulted due to its overestimation of world population growth and underestimation of food production, Malthus (1798) economic theory of population growth is in support of the above statement. This theory which stressed geometric population growth alongside arithmetic food production serves as a benchmark for the modern "doomsday formula!" The formula underscored the need for an increased output at a geometric rate if only man would maintain good standard of living (as in the developed world) or improve on the standard (as in the developing nations of which Nigeria is a member).

Schiller (1980) wrote:

> ".....further increases in our living standards will require more research and development, additional investment, continuing skill development, improved management, and supportive government policies....."

However, resource constraints are impediments to be worried about. Land, a major factor of production, is limited. Schiller (1980) submitted: the earth has only 7.86 billion acres of land potentially suitable for agriculture, and we are already farming half that total. We can boost agricultural production only by bringing the rest of the land into

cultivation or by increasing the output per acre.'

If output is to be increased per acre of land, cultural practices have to be improved upon. But then, this is only achievable through the application of science and technology.

Many African nations' economy are purely agrarian, hence, agriculture occupies a dominant role in the economy. For many, it is the sole earner of foreign exchange, while for others, it is a major source of foreign exchange, (Alao, 1971). Siyanbola (1991) also wrote that 'Nigeria agriculture is still unfortunately characterised by continuing under-development beset by low productivity of resource inputs, low aggregate output, a large population of stagnant, traditional small-holder farmers. The technology still remains the traditional hoe-culture coupled with age-long unproductive farming practices'.

Improvement in this sector, therefore, could only be enhanced through agricultural revolution (by utilizing improved technologies and innovations). Stevens (1977) said changes in agricultural technology can be obtained through the application of the whole range of modern science and technology to agricultural production processes. This fundamental process, according to him, is a source of increased agricultural productivity through the production of more products with less resources.

> "If food production in the developing world is to keep pace with population growth, more efficient farming practices must be introduced. These new practices should not be introduced at the expense of the environment or the resource base, but must be based on persuading conservative, risk-avoiding, resource-poor farmers to become more innovative." (SPORE: No 51, June 1994)

There is therefore the need for the creation of awareness for the introduction of yield-increasing innovations. This is done by some official agencies. In Nigeria, for instance, many development programmes have been launched with a view to alleviating rural poverty and of course to speed up national development. Some of such programmes are: National Accelerated Food Production Project, NAFPP (1974); Integrated Agricultural Development, IAD (1975); Operation Feed the Nation, OFN (1976); River Basin Development Authorities, RBDA (1976); Land Use Decree (1978); Agricultural Credit Guaranteed Scheme, ACGS (1978); Green Revolution, GR (1979); The World Bank assisted Agricultural Development Projects, ADPs (1972); National Agricultural Land Development Authority, NALDA (1990).

However, experiences have shown that farmers' situation are not properly taken into consideration in agricultural research and policies. Despite all efforts to get farmers adopt more of the introduced and improved technologies through the established channels, often, there are cases of farmers rejecting or discontinuing with such innovations. The socio-cultural, socio-economic and socio-political orientations of change targets (farmers) need be well studied by the change agencies in order to make appreciable impacts. There are observational and empirical evidences supporting this argument viz.

An agriculture agent once attempted to introduce hybrid seedcorn in a small spanish-american farm community, having noticed the low yield of the cultivers (corn seed) being grown by the farmers.

Considering all necessary factors ranging from socio-economic, socio-political and ecological factors which obtain in the community, he (the agent) failed to make inquiries into the food habits and their influence on the selection of crops. This led to the dismal failure of the project. Almost all the farmers adopted the innovations and after some time, majority of them discontinued its use.

Ross and Lappin (1955) reported this from Spicer's (1952) edited work thus:

> 'A farmer said: "my wife doesn't like that hybrid, that's all." He and others explained that the new corn had not been popular from the harvest. All the wives had complained. Some did not like its texture; it did not hang together well for tortillas; the tortillas were not the color of nixtamal (the corn flour dough to which they were accustomed).'

The above instance shows how great the influence of a woman could be on the man. Men could be innovatively inclined and ready to dabble into any venture - even though risky and uncertain - when influenced by women. Such was the case of King Nebuchadnezzar of ancient Babylon who built a 'hanging garden' (one of the seven wonders of the world), all in an attempt to please his foreign homesick and nagging wife who had had her original home in a montaneous country in contrast to the plain of the middle east.

However, women factor is just one of a myriad of factors. The case of the said hybrid corn was not unconnected with the submission of Alao (1971) that: "The researches being done in technical agricultural fields have not been matched by sociological and extension type studies such as determining how farmers accept new ideas and practices in farming."

An observational evidence in connection with discontinuance cases is that of a

farmer in Western Nigeria:

About 1981, a young man (a student of agriculture) once encouraged and motivated his relatively uninformed father to adopt the use of fertilizer on his cereal/grain enterprise. The cheapness and easy procurement of the item made the farmer to consent without much persuasion. Having adopted the innovation, the maize responded positively. But then, the farmer discovered that the growth rate of weeds on the plot was relatively faster than it used to be. He raised eyebrow but he was still satisfied with the crop performance. He made a bumper harvest thereafter. The farmer kept on with the use of this innovation until the procurement of the input became difficult and expensive during which he stopped using fertilizer on his maize enterprise, hence, discontinuance. This brings us to the problem area of the study.

1.2 Statement of Problem

The sole aim of transferring new knowledge and skills to farmers as well as facilitating change in their attitudes towards agricultural practices is to enable improvement in agricultural production.

In spite of all efforts by the concerned agencies (research and extension) to bring about new scientific discoveries and have them passed across to the farmers, the above objective is yet to be met.

The Nigerian farmer is confronted with myriads of problems when adopting an innovations thus making discontinuances inevitable in many cases. This invariably renders the result of research efforts of no effect. The result of this effect on the

nation's agrarian economy is stagnation and poverty. Therefore the following questions arise:

i What are the factors influencing farmers decisions in discontinuing with certain improved practices?

ii Is the innovation compatible, advantageous, cheap and available enough to ensure its continued adoption?

iii Can the enabling inputs be procured easily?

iv Are the ideals and values of the farmers and other family members taken into consideration when planning for and introducing new technology?

These are some of the specific questions that are addressed in this study.

1.3 Objectives of the Study

The main objective is to identify the factors associated with the problems of discontinuance of innovations by farmers in Ekiti North of Ondo State.

The specific objectives are as follows:

i To identify the agricultural innovations introduced to farmers in the study area.

ii To identify those innovations which have been adopted and later discontinued by farmers.

iii To identify those factors (personal and social) which are responsible for the discontinuance of the use of innovations among farmers.

iv To analyse the characteristics of farmers who discontinued the use of their adopted innovations they had adopted.

1.4 Hypotheses of the Study

The hypotheses of this study are stated in the null form as follows:

i There is no significant relationship between personal/socio-economic characteristics and discontinuance with the adoption of innovation among farmers.

Personal and socio-economic characteristics examined are:

a) Age, b) Sex c) Literacy (d) level of education (e) family size (f) Mass media exposure (g) Contact with extension agents (h) Cosmopoliteness (i) Risk aversion (j) Fatalism (k) Economic constraints (l) Farm size (m) The decision of family members and (n) Association(s) membership and participation.

ii There is no significant relationship between the characteristics of innovation and discontinuance.

The characteristics examined are:

(a) Relative advantage;

(b) Compatibility

(c) Cost-profitability and;

(d) Availability

1.5 Significance of the Study

An adopted innovation could be besieged with some or many unpleasant external and internal circumstances which in most cases could result to the rejection of the new idea even after it has been adopted, hence, discontinuance. Discontinuance with the use of any idea by the farmers is tantamount to a dismal failure on the part of the change agency.

Rogers (1962) writes, "many researchers have reported discontinuances even though few were looking for them." According to him, 'several research studies have investigated discontinuances, but many of these have labelled this behaviour by some other terms. Few of these investigations were specifically designed to study discontinuances'. Often, the discovery of discontinuances was "serendipitous." By this, he meant that such findings are chanced upon by researchers.

Many work have been done on diffusion and adoption of agricultural innovations but not much have been done on problems of discontinuance. Needless to say is that farmers' circumstances should be considered when attempting to introduce an innovation to farmers. For any innovation to gain permanence of adoption, efforts must be geared towards identifying and solving those problems emanating in the course of its adoption. Research and extension agencies need to work in conjunction with the farmers at all times with a view to helping the latter overcome all besieging problems which could lead to discontinuance.

This research study therefore aims at identifying those problems and factors associated with discontinuance which most studies up to now have not given thorough consideration.

The nature of discontinuance which until this present moment is yet unstudied are also given prominence in this study.

The study is believed to contribute literatures on the concept of discontinuance. It also throws light on how research and extension agencies could overcome problems of discontinuance as 'the educator who feels that continued use is desirable needs to try

and reinforce the acceptance decision of the adopter and to counteract competing influences' (Lionberger, 1960).

1.6 Basic Assumptions of the Study

The following assumptions were made for the purpose of the study.

1. That there would be no discontinuances in the adoption of agricultural innovations if necessary and sufficient conditions are met both on the part of the farmers and the extension agencies.

2. That farmers might not necessarily discontinue with the adoption of an innovation plagued with some problems if the returns are over and above the ploughed inputs.

1.7 Definition of Terms

Agricultural Innovation

This term refers to new techniques and improved methods used in the production of food and rearing of animals.

Community's taste

This concept explains the preference of the community members for a particular innovation in terms of their food habits and ideals.

Discontinuance

This implies the decision of the farmer to cease using a previously adopted agricultural innovation (Rogers, 1962).

Farmers

Effionayi, (1973) said the term farmer includes families or individuals who either depend on agriculture as a means of livelihood or who practise it as part-time occupation.

Farmer in this study applies to the categories in the definition above.

Gradual discontinuance

This term refers to the deliberate or unconscious removal of emphasis on the innovation already adopted by a continual reduction in bits of the scope or proportion of the innovation over time.

Immediate discontinuance

This occurs when a farmer phases out the continued adoption of an innovation at once without any consideration given to the continuity of some proportion of such innovation.

Rapid discontinuance

This is the phasing out of an innovation by a sharp and swift reduction in the scope of the adopted innovation, hence, leading subsequently to the ebbing out of its active life within a short period of time.

Respondents

This term applies to all farmers with whom interview schedules were had in the study.

1.8 The Study Area

Ekiti North of Ondo State was one of the major administrative divisions of the state. Until about 1989 when it was split into two - Ikole and Oye Local Governments - it remained a local administrative division with Ikole Ekiti being the headquarters. Ekiti

North lies between latitudes 7°40[1] and 8°10[1] North of the equator, and between Longitudes 5°20[1] and 5°40[1] East of the Greenwich (London).

This area is bounded in the North by Kwara and Kogi States; in the East by Ekiti East Local Government of Ondo State; in the West by Ido/Osi Local Government of Ondo State and; in the South by Ekiti East and Ido/Osi Local Governments.

Topography: Although having some features of rugged hills, this area is located relatively on a plain surface. The drainage is southward to the Atlantic Ocean.

Climate: Climate pattern is tropical in nature. There are two distinct seasons - the rainy season (which obtains between April and October) and the dry season (which is prevailent between November and March).

Annual rainfall is about 45 inches contrast to 100 inches of the South. Temperature ranges between 95°F and 56°F while relative humidity is very high. The luxuriant rain forest vegetation of the Southern part ebbs out as one approaches the Northern fringe of the area, and that with a prominent feature of savannah forest (Guinea Savannah).

The People: As the name depicts, predominant dwellers are the Ekiti. Compact settlements are seen, where people reside mostly in towns each with a population of 5000 and above. Ikole Ekiti being the major town has a population strength of 142,657 people according to the provisional results of 1991 census. Oye local government on the other hand has a population strength of 136,405 people.

In some places, there is the blend of modern comfort with pure unadulterated rustic life. Typical yoruba villages are found. Houses in the villages are mud-walled

and roofed with corrugated iron sheets. In most areas, the setting is still basically rural in nature, 'unrelieved by any of the trapping of modern technology.'

The people are very hospitable, empathetic and lovely towards stranger elements and they are ever ready to cooperate with authorities.

Arts and Crafts: Carved house posts and decorated doors are common. The people engage in weaving and pottery. The Isan clay pottery is renowned.

Religion: The people are either christians or muslims but there are also a sizeable number of custodians and devotees of the various deities and traditional religions.

Agriculture: Towns are endowed with extensive farmland, and these encourage future expansion. Farming is the major occupation governed mostly by traditional subsistence agriculture.

Albeit, the impact of the Agricultural Extension Services of the Ministry of Agriculture - which has metamorphosed to that of the Agricultural Development Project - now ensures a gradual transformation of cutlass - hoe approach to a new approach of mechanized agriculture.

Economic crops produced are cocoa, palm produce, rubber, tobacco, cotton etc.

Fruits like mango, grape, pawpaw, pineapples, cashew, banana and varieties of oranges are produced. Subsistence crops are yam, cocoyam, cassava, rice, plantain, cowpea, onions, maize, pepper, tomatoe and groundnut.

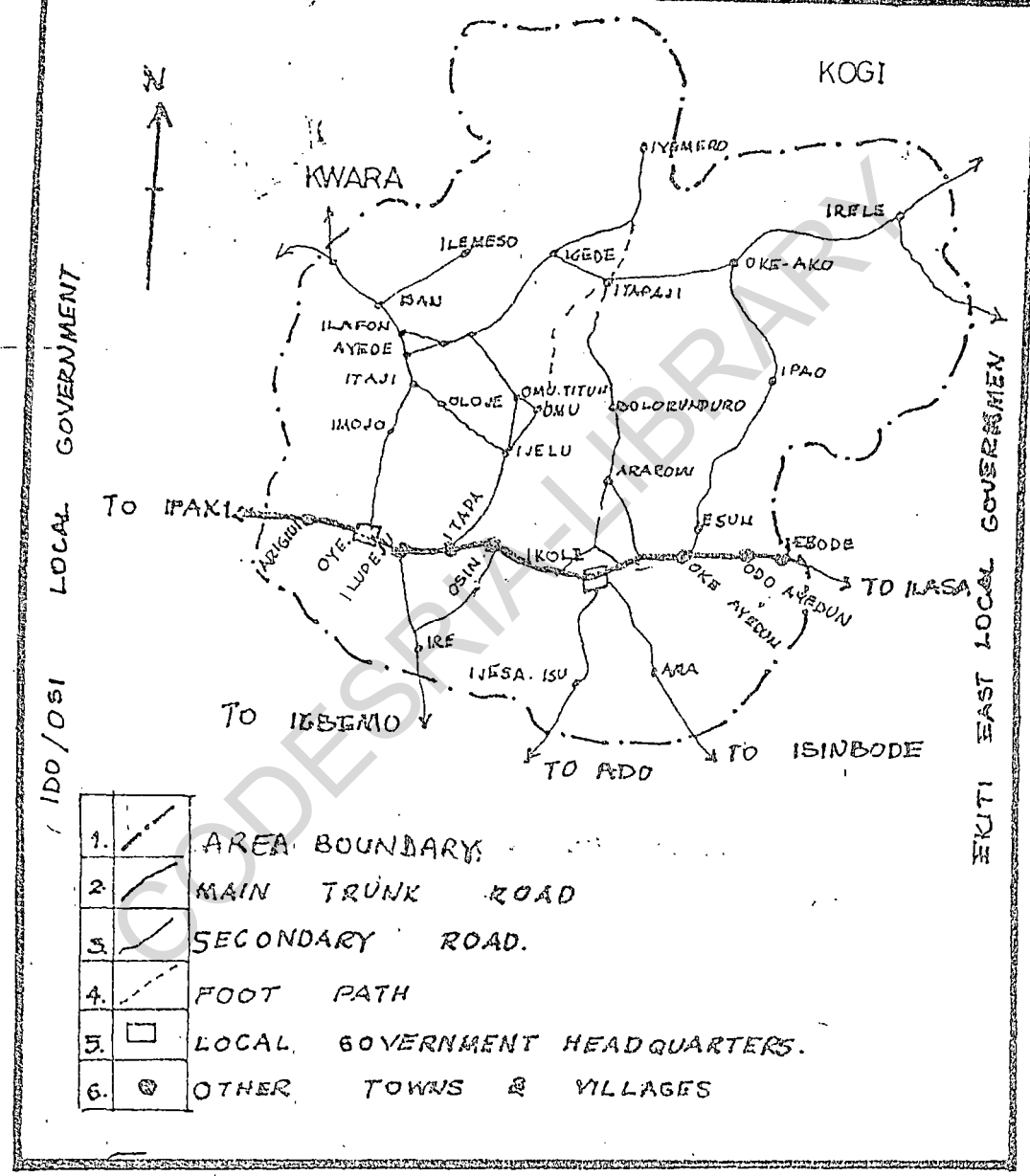

FIGURE 1: A Map showing EKiti North area of ondo state.

CHAPTER TWO

2. LITERATURE REVIEW

Adoption and discontinuance of agricultural innovations are two inseparable concepts. Before a farmer ceases the use of an innovation, he must have adopted it. This chapter therefore takes into account a review of literatures on the two concepts. However emphasis on adoption and discontinuance of certain innovations is never complete unless the patterns of diffusion of such innovations are taken cognisance of. Diffusion strategy plays a key role in the cultural life of the individual present within a social system. Reed (1961) in Rogers (1962) opined that "…..some of the greatest struggles encountered by mankind have been not with sword but with ideas diffused into their daily lives and emerged as cultural changes….."

2.1 The Term 'Diffusion of Innovation'

Diffusion of innovation according to Rogers (1962) is the process by which an information spreads. Ekong (1988) is of the same opinion. Information on scientific research would not reach the farmers unless they are diffused. Ekong (1988) wrote that as a result of increased scientific research and improved methods of communication, a great variety of new materials and ideas have been generated and brought to the doors of Nigerian farmers and other rural dwellers.

2.2 Elements of Diffusion

The four-key elements in the analysis of the diffusion of innovation according to Rogers (1962) are: the innovation; its communication from one individual to another; in a social system and; over time. Katz (1961) as reported by Rogers (1962) identified

these four elements as: the tracing of an innovation, over time, through specific channels of communication and lastly within a social structure.

Each of these elements will be explained based on Rogers view.

1. The innovations: An innovation according to Rogers (1962) is an idea perceived as new by the individual. What matters to the individual is the relative newness of the idea and not when such innovations have been in existence in some localities. Ruttan (1959) as cited by Rogers gave a more restrictive definition of an innovation using an appropriate adjective such as "technical", "organizational", or some specific term.

   However, the innovations in this study are mainly technological/agricultural innovations.

2. Communication: The spreading of a new idea from its source of invention or creation to its ultimate users is through the process of communication.

3. Social System: This is defined by Rogers (1962) as a population of individuals who are functionally differentiated and engaged in collective problem-solving behaviour. The individuals within this system may represent an informal group or a formal group. The system in some cases influence the decisions of individuals in the adoption of innovation. Also, there are some innovations which could not be adopted by just an individual unless accepted by the majority of individuals present within the system.

More often than not, "some ideas are adopted by a group decision that forces acceptance even upon those who are unwilling". An example is the fluoridation of city

drinking water in the United States of America. Once the community decision is made, the individual has little choice.

Individuals' norms and status in the social structure of the system affect the diffusion of ideas.

Katz (1961) emphasised the importance of this social structure in the analysis of diffusion thus:

> "..... it is about as unthinkable to study diffusion without some knowledge of the social structures in which potential adopters are located as it is to study blood circulation without adequate knowledge of the structure of veins and arteries".

4. Over Time: The period it takes an individual to adopt an innovation after he has heard about same.

In a nut-shell, Katz (1961) and Katz and Levin (1959) consider diffusion studies as those tracing the movement of a given idea, over time, through specific channels of communication, and within a social structure. 'The decision to adopt usually takes time', says Lionberger (1960). 'People', he continues, 'normally do not adopt a new practice or idea as soon as they hear about it. They may wait several years before trying the idea for the first time, and longer still before permanently adopting it.' To be sure, some decisions are made quickly - but many others require extended thought and deliberation. The final decision to use a new practice is usually the result of a series of influences operating through time.

Lionberger further put forward some postulations that 'all people do not adopt at the same time, ... and for some practices and ideas, some .... never

adopt', that 'final adoption is not always permanent adoption', that 'information sources vary in their functions: sources of information vary in relation to both the stage of adoption the farmer is in and to his relative position in the adoption cycle. At the awareness stage, mass media '.... are the most frequent source of information about the new ideas and practices.' An exception is that of 'the late adopter, who is likely to first learn about a practice from other farmers.' The interest stage is monitored by mass media and other farmers as well, but 'various agricultural agencies are likely to be important at this second stage, too, particularly for early adopters and in connection with practices involving changes in techniques or farming operations.' At the evaluation stage, 'other well-regarded farmers become the most useful source.' e.t.c.

Other postulations are that: 'some farmers will accept advice from an influential friend when he would not accept it from government agencies or industry'; 'what's good for the big farmer may not be for the small'; and, 'educational efforts can be modified as adoption progresses.'

One of these postulations has spun the desire to identify and expatiate on the characteristics of innovations.

2.3 Characteristics of Innovations

Barnet (1953) as cited by Alao (1980) said 'the reception given to a new idea is not so fortuitous and unpredictable as it sometimes appears to be. The character of the idea is itself an important determinant.' The varying degrees of the features of innovations are functions of rejection or acceptance of such innovations by farmers.

According to Alao (1980), these characteristics have been studied in the past by several authors in literature along the dimensions outlined underneath:

(a) Relative Advantage

(b) Divisibility

(c) Compatibility

(d) Complexity

(e) Cost-profitability ratio

Communicability and availability although not included are also important.

(a) Relative Advantage: This, according to Alao (1980) is defined as the superiority of the innovation over the one it is meant to supersede. This according to him is expressed in social and economic terms. The individual's perception of the innovation's relative advantage takes precedence over the intrinsic relative advantage of the innovation. Unforseen and inclement circumstances might engender the adoption of an innovation which could otherwise have been rejected.

(b) Divisibility: Alao (1980) says it is the degree to which an innovation is divisible and could be tried on small scale. This means that the innovation could be adopted in parts. A good example is an improved cultural operation whereas the use of capital items (equipment) on the farm could either be practised whole or jettisoned.

(c) Compatibility: This is defined by Alao (1980) as the degree to which an innovation is consistent with the existing values, culture and previous experiences of the receivers. Consonance with existing values and favourable past

experiences of previously introduced innovation encourages a farmer to adopt subsequent innovations but otherwise if past experiences are unfavourable. Compatibility is also enhanced in a situation whereby farmers can still adopt an innovation without rigidly observing the packages of recommendations, but this in effect does not bring the most desirable result.

(d) Complexity: This, according to Alao (1980), is the degree to which an innovation is relatively difficult to understand and used by farmers. '.... the keeping of farm records to show the farmer at the end of a given agricultural year his cost benefit ratio is more difficult for him to adopt than the acceptance of a new variety of seed.'

(e) Cost-Profitability Ratio: ".... the total outlay or overhead to the farmer in adopting a new idea or practice, and the expected margin of profit....." The farmer takes into consideration the amount of money to be ploughed in during the adoption (of an adjudged innovation) as well as the profit that would subsequently accrue to him.

(f) Communicability: This is the degree to which the results of innovation may be diffused to others. Rogers (1962) says the communicability of an innovation, as perceived by members of a social system, affects its rate of adoption. While the results of some new ideas are easily communicated and observed, it is not so for some other innovations since they are difficult to describe to others. Erasmus (1961) indicates that visibility of a new idea is particularly significant in affecting its adoption rate in a less developed, pre-literate society. Ogburn (1922) in his

theory of cultural lag claimed that material innovations diffused and were adopted more readily than non-material ideas. Linton (1936) as cited by Rogers (1962) stressed that the cultural lag of non-material behind material innovations is due to the greater visibility and communicability of material ideas.

2.4 The meaning of Adoption

According to Rogers (1962), adoption is a decision to continue full use of an innovation. Lionberger (1960) on the other hand defined adoption as the full-scale integration of the practice into the on-going operation. Wilkening (1953) is of the view that adoption of an innovation is "..... a process composed of learning, deciding and acting over a period of time."

2.5 The Rate of Adoption:

Rogers (1962) defined this as the relative speed with which an innovation is adopted by the members of a social system. He goes further to say rate of adoption is usually measured by the length of time required for a certain percentage of the members of a social system to adopt an innovation.

Kivlin (1960) as reported by Rogers (1962), found highest correlations between rate of adoption and (1) relative advantage (2) complexity, and (3) compatibility. No significant relationship was found between rate of adoption and divisibility. Kivlin found either low or negative intercorrelations among four characteristics of innovations (divisibility, compatibility, complexity and advantage) which he measured, and which suggests they may be relatively independent of one another.

Tucker (1961), as cited by Rogers (1962) found out that complexity, divisibility,

compatibility and relative advantage were not significantly related to rate of adoption although the relationship were all in the expected direction.

2.6 Adoption as a Process:

Adoption process is defined by Rogers (1962) as 'the mental process through which an individual passes from first hearing about an innovation to final adoption.

Ryan and Cross (1943) were able to recognise that there are stages in the adoption of a new idea. They distinguished between "awareness" of hybrid corn, "conviction" of its usefulness, trial "acceptance" and "complete adoption" of the innovation'. Pederson (1951) as cited by Rogers (1962) also affirmed that there was a sequence of events leading to adoption. Wilkening (1952) listed four adoption stages: awareness, obtaining information, conviction and trial, and adoption. Both Beal and others (1957) and Copp and others (1958) in two separate research studies confirmed the validity of this concept of stages.

Holmberg (1960) as cited by Rogers (1962) in his work made use of the concept of seven-stage adoption process in his Cornell University anthropology courses. The stages are arranged in the following sequence:

1. Availability of the innovation to the individual;
2. Awareness;
3. Interest;
4. Trial;
5. Evaluation;
6. Adoption and;

7. Integration of the innovation into the individual's routine.

The five middle stages which are similar to those of the North Central Rural Sociology Subcommittee in the United States (1954) would be reviewed in this work.

2.7 Stages in Adoption Process:

Lionberger (1960) submitted that "people ordinarily do not accept new ideas or practices immediately upon hearing about them. The time from initial knowledge to final acceptance may range from a few days to many years. Change does not occur in an abrupt fashion but rather, there are sequences of events interplaying over time."

Dewey (1933), Mead (1956), Johnson et al. (1955) showed antecedents to the use of stages for studying the individual adoption process.

Awareness Stage:

Emery and Oeser (1958) termed this stage "exposure". This stage is defined by Rogers (1962) as that in which the individual is exposed to the innovation but lacks complete information about it. Lionberger (1960) said 'a person', at this stage, 'learns about a new idea, product or practice. He has only general information about it. He knows little or nothing about any special qualities, its potential usefulness, or how it would likely work for him.' Rogers (1962) affirmed that 'the primary function of the awareness stage is to initiate the sequence of later stages that lead to eventual adoption or rejection of the innovation.'

Nevertheless, researchers have dubbed awareness stage as a random or non-purposive occurrence - saying that the knowledge about the existence of an innovation is by accident, - Hassinger (1959) as cited by Rogers (1962) criticized this assumption

of non-purposiveness of the awareness stage. He said that 'awareness must be initiated by the individual and is not a passive act.' He pointed out that awareness might not be created by the information about an innovation even though the individual may be exposed to such information unless such innovation meets the individual's desiderata.

Interest Stage:

This according to Ekong (1988) is the second stage during which the individual seeks more information about the innovation. Rogers (1962) submitted that the individual at this stage favours the innovation in a general way, but he has not yet judged its utility in terms of his own situation. 'He wants more detailed information about what it is, how it will work, and what it will do. He is willing to listen, read and learn more about it, and is inclined to actively seek the information desired" (Lionberger, 1960). He is affected by his personality, values and the norms of his social system as per where he seeks information and interpret this information regarding the innovation.

Evaluation Stage:

Termed "acceptance" stage by Copp et al, (1958); "application" by Beal et al (1957) and; Beal and Rogers (1960); "Evaluation-application-decision" by NCRS Subcommittee (1961) and; "Conviction" by Rogers and Yost (1960). Evaluation of the innovation takes place almost simultaneously with arousal of interest. The individual, according to Rogers (1962), mentally applies the innovation to his present and anticipated future situation and then decides whether or not to try it. It is the fulfilment of needs and practical applicability of the innovations to the finding of solutions to problems that matter to the individual.

Trial Stage:

Ekong (1988) says it is the stage during which the individual actually applies or practices the innovation in a small scale. The usual pattern of acceptance, according to Lionberger (1960), is to try a little at first, and then to make large-scale use of it if the small-scale experience proves successful.

Adoption Stage:

The individual at this stage continues with the use or applicability of the innovation after he must have felt satisfied at the trial stage. Lionberger (1960) submitted that 'at this stage, a person decides that the new idea, product, or practice is good enough for full scale and continued use.' Although, some people are very curious and still give time for the innovation to prove its worth (Ekong, 1988).

The above stages are not discretely rigid neither does every individual need to pass through each of the stages at all times but ".... what these stages do represent is a useful way of describing a relatively continuous sequence of action, events, and influences that intervene between initial knowledge about an idea, product, or practice, and the actual adoption of it." In essence, ".... investigators have found that farm operators and wives are able to recognise these five stages in many of the decisions they make when questioned directly about them." (Lionberger, 1960).

According to Alao (1980), the by-product of other studies has revealed that Nigerian farmers can identify at least three stages in the adoption process. These are:

(i) awareness (ii) trial and; (iii) adoption.

2.8 Adopter Categories:

While some farmers adopt an innovation, some try but fail; and some would not adopt at all.

Individuals are therefore classified into adopter categories as they adopt on a time continuum. Adoption of innovations by individuals all at the same time is unrealistic. Each individual has his own differences and opinions about situations surrounding him.

Adopter categories as defined by Rogers (1962) are the classification of individuals within a system on the basis of innovativeness. Adopter categories have been dubbed: "Pioneers" (Ross, 1958) and "progressists" (Chaparro, 1955); to "parochial" (Carter and Williams, 1957) and "drones" (Danhof, 1949).

The adopters of innovations have been categorised into five groups namely:

i. The innovators;

ii. Early adopters;

iii. Early majority;

iv. Late majority and;

v. Laggards.

Innovators: Those individuals who are the first to experiment with and adopt new practices or ideas (Ekong, 1988). Innovators are venturesome. They are eager to try new ideas. They look for social relationship outside their "local circle of peers." Rogers (1962) wrote: 'Being an innovator has several prerequisites. They include control of substantial financial resources to absorb the loss of an unprofitable innovation, and the ability to understand and apply complex technical knowledge.' He must be a risk bearer. He must desire the hazardous, the rash, the daring and the risking. The innovator must

be willing to accept an occasional debacle when one of the ideas he adopts proves unsuccessful. Ponsioen (1969) in support of this acknowledged that 'an innovator .... is one who is possessed of a new ideas and acts through his entire life as its living symbol.' They are very few in number.

The Early Adopters:

The localites who are at the forefront to adopt the use of a new idea. Ekong (1988) submitted that 'people in the community regard them as those with good judgement, hence, they are usually opinion leaders. 'They', he continued, 'are respected by peers and serve as role-models for other members of the community.' They are educated and participates in many social and formal organization.

The Early Majority:

They adopt an innovation before any other average member of the community. This set of individuals may deliberate for some time before completely adopting an innovation. 'Participation by early majority in activities with their peers is high, but leadership position are rarely held' (Rogers, 1962). Even, though they seldomly lead, they are always willing to adopt innovations.

The Late Majority:

They are individuals who are usually skeptical about innovations and only adopt when the average members of the society have adopted (Rogers, 1962). Ekong (1988) is of the same view. These are the skeptics. 'Innovations are approached with a cautious air and the late majority do not adopt until a majority of others in their systems have done so....' They can be convinced of the utility of new ideas, but the pressure of

peers is necessary to motivate adoption. They are poorly educated and poorer than the average.

Lionberger (1960), however sees some good attributes in the skeptics by saying, 'the positive role of skeptics should not be discounted. They may insist on evidence that innovators and early adopters ought to have before first trial or adoption.' 'They,' he continues, 'may help prevent costly mistakes that might otherwise occur. They provide an element of stability in a rapidly changing society.' Both early and late majority make up to 68 percent of the adopter population (Rogers, 1962).

The Laggards:

'Laggards are the last to adopt an innovation' remarked Rogers (1962) and acknowledged by Ekong (1988). They are conservative and most local of all the categories of adopters. They are very suspicious of innovations, innovators and change agents, and 'their advanced age and tradition-direction slows the adoption process to a crawl.' Rogers (1962) best described the laggards by saying: 'While most individuals in a social system are looking to the road of change ahead, the laggards has his attention on the rear-view mirror.' The laggards are too traditional. They are very slow.

2.9 Adoption Behaviour of Nigeria Farmers; Characteristics of Farmers Adopters:

Studies which centre on farmers' attributes as a prime determinant of his adoption behaviour have been carried out severally by many researchers: Studies by Clark and Akinbode (1968); Basu (1969); Alao (1974); Ahonkai (1975);as reported by Alao (1980) are representatives of such. The following characteristics of farmers in Nigeria have been studied:

i. Age

ii. Literacy

iii. Level of Education

iv. Family size

v. Social participation

vi. Mass media exposure

vii. Extension contacts and

viii. Level of income.

Age: All studies in this report show that the average age of Nigerian farmers is between 45 and 50 years with the age histogram skewing disproportionately to the right.

Basu, Clark, Akinbode and Alao as reported by Alao (1980) showed that there is no association between age and the adoption behaviour of farmers.

Literacy and Level of Education: Literacy means the ability of the farmer to read and write in any language. In the studies, about 40 percent of Nigerian farmers are able to read in or write at least one of the Nigerian languages. Less than this proportion had schooling. Most of the study except that of Clark and Akinbode (1968) as reported by Alao (1980) showed 'a positive association between literacy and adoption of innovations but no significant relationship between adoption of innovations and formal schooling.'

Family Size: . includes number of wives and children available contributing to farm labour. Alao (1971) referred to this as family labour. 'The size of the family in this sense has positive relationship with adoption of innovations by farmers' (Alao, 1980).

Level of Social Participation: Nigerian farmers, according to the study, belong to formal and informal organizations. A positive correlation between Nigerian farmers' level of social participation in community life and adoption of agricultural innovations was also deduced.

Mass Media Exposure: Radio, rediffussion, agricultural newsletters, newspapers and Television are the major concerns. 'Mass media exposure for a farmer was indexed by his access to and use of mass media such as radio, rediffusion, agricultural newsletter, newspapers and television, and invariably in that order of importance' (Alao, 1971). The studies in Nigeria have shown a positive strong relationship between adoption of innovations and mass media exposure by farmers.

Extension Contact: Linkages created between farmers and research by agricultural extension agencies have been found to be the most important in the studies. 'Research carried out by several individuals, at various places and at different times in Nigeria have repeatedly confirmed the dominant importance of extension agents as a primary source of information to farmers on agricultural innovations (Alao, 1971).

Level of Income: It is a difficult variable to measure in situations where farmers do not keep records. But then, this could be measured in terms of the cash crops the farmers deals with; his size of farm, his type of farming (i.e whether mixed or livestock or crop farmer); and whether he is a part-time or full time farmer. 'When other things are held constant, there is obviously a positive relationship between level of income and adoption of innovations.'

2.9.0 Social System Structure and the Adoption of Innovations: Linton (1952), as reported by Alao (1980), observed that if we know what a society's culture is, including its particular system of values and attitudes, we can predict with a fairly high degree of probability whether the bulk of its members will welcome or resist a particular innovation. Various researchers have had studies on how the structure of the community influences adoption.

Relatively high level of living; several religious structure; presence of formal social organizations; lack of factionalism and disputes; a diversity of religious tradition in the village; presence of political parties and; the presence of a number of voluntary organizations are the characteristics of high adoption villages in India studied by Fliegel and others (1968) as reported by Alao (1980) The study made by Alao (1971) 'demonstrated concretely that community structure exerts contextual influences on all other dimensions of explanatory variables in adoption study such as size of farm, innovation proneness, social participation, mass media exposure, cosmopolitism.'

2.9.1 Problems of Adoption:

Internal and external factors influence the adoption of agricultural innovations. These influences emanate before or during the course of adoption.

Okuneye (1984) grouped problems relating to farmers adoption of innovation into three groups:

(a) The problems perceived by the farmers themselves

(b) The problems inherent in the nature of the new idea/innovation itself and;

(c) The pattern or method of diffusion of the new idea.

(a) The problems perceived by the farmers themselves:

According to Okuneye (1984), these includes:-

i. The perception of the farmer that he is not being competent to adopt the innovation. He feels he lacks the skills that enable adoption.

ii. The capital requirement of the innovation which could serve as an inhibitor to the farmer's adoption.

iii. Envisaged social or cultural incompatibility or psychological power, political and socio-economic structures.

iv. Risk aversiveness of the farmer which could be as a result of inadequate contact with extension agents, poor financial position and the exhibition of the "fear of the new". 'The corollary of reluctance in innovation adoption is a round-about relationship between income and poverty. Poverty leads to risk aversivenss and thus inhibits innovation adoption. Non-adoption leads to low income.' Chamber (1983) wrote: "....that subsistence farmers and other poor people are averse to risks and cautious about new practices which might jeopardize their familiar sources of food or make them poor."

Okuneye (1984) said that the reduction or elimination of poverty should provide a major stimulus for technological innovation and the modernisation of subsistence agriculture.

(b) The problems inherent in the nature of the innovation:

In the case of a transferred innovation, information and guidelines on its production system, constraints and peculiarity may be weak, hence, the need for

indigenous technical knowledge or technology. Also, the innovation may not be profitable to adopt.

(c) The pattern or method of diffusion of the new idea:

The nature of the spread of the innovation affects its adoption. 'Agricultural demonstration and personal contacts among the farmers and extension agents have been argued to be the most appropriate step in achieving agricultural change in rural communities.' This enables farmers ability to observe the possible result of a particular innovation when adopted and this makes them to be less risk aversive. The objective of adoption is also made possible where farmers are able to observe the skill involved in applying the innovation.

Jibowo (1980) was also able to identify certain personal characteristics of the farmers which affect adoption.

These are:

i. the age of the farmer;

ii. level of education;

iii. cosmopoliteness and;

iv. contact with extension agents.

Hague and Ray (1983) observed the utilization of a number of cosmopolite sources of information, knowledge about innovation, economic status and family size as important factors to the adoption of some recommended practices among fish farmers in Nadia district of Western Bengal, India.

Siyanbola (1991) remarked that we can safely include the following to the

constraints to adoption process of most innovation in Nigeria:

i. Lack of credit;

ii. Limited access to information;

iii. Inadequate farm size;

iv. Inadequate incentives associated with land tenure arrangement;

v. Insufficient human capital and absence of equipment to relieve labour shortage and;

vi. Inappropriate transportation infrastructures.

It is therefore acknowledged that almost all the factors (if not all) that affect adoption of an innovation would affect its discontinuance but in the opposite directions (inverse relationships).

2.9.2 Discontinuances:

When an individual rejects an idea after he must have adopted it, then "discontinuance" is said to have occurred. However, there are two forms of rejection: Symbolic and trial rejection (Leuthold, 1967). Symbolic rejection is the adoption unit's decision that the new idea is not acceptable in his situation. Trial rejection, on the other hand, is the adoption unit's decision not use the innovation after having experienced a limited application of the innovation to his situation.

Jibowo (1992) affirmed this by acknowledging that after the farmer has adopted an innovation, he may discontinue practicing the idea. Nevertheless, research studies have not fully concentrated on discontinuances per se, yet there are some studies which have either covertly or overtly addressed this phenomenon.

Chapin (1928) had such study but never utilized the term. He found a number of the United States of America cities had "abandoned" the commission form of government and the city manager plan for 1912 to 1923. 'There were almost as many cities abandoning the innovations during certain years as there were those adopting these ideas.

An investigation by Wilkening (1952) found discontinuances in the case of 16 of the 33 educational innovations he investigated among 170 public schools.

Rogers (1962) cited the findings of Eichholz (1961) that discontinuances were more common than 11 other types of rejection in his study of rejected audio-visual innovations by 45 elementary teachers in five public schools. Rogers (1962) also cited the findings of Silverman and Bailey (1961) in which they found about half as many discontinuances as adoptions by 107 Mississippi farmers over a three-year period. He also reported the investigation of disontinuances by Johnson and Van de Ban (1959) of which some of the cases were due to the superdesedence of newly introduced innovations replacing previously existing ideas.

In "the introduction of Hybrid corn to Spanish American farmers in New Mexico" written by Anacleto Apodaca and edited by Spicer (1952) it was reported that there would have been less or no discontinuances of the use of the "hybrid corn" if the following steps had been taken into consideration.

1. "Trial of several varieties of hybrid corn and selection of one
2. More thorough testing of the corn to see how it fitted into the culture patterns.
3. Continued demonstration of the advantages of the new seed.

4. Close contact with the growers to detect any difficulties and to make modifications in the plan as needed.

By these means, the taste problem might have been detected earlier and not through the use of a more suitable type of hybrid."

Goodenough (1963) has similar view on the community's culture by saying ".... no responsible development agency can afford to launch a development project without being informed as to the client community's culture in all its aspects, especially its principles of economic, social and political organization."

In the "Course of Events", two natures of discontinuances were made manifest in respect to the continued adoption of the "hybrid corn". Within two years, (1947-1949), there had been a reduction in the number of 60 growers to 3 growers. This showed individual immediate discontinuances and universal rapid discontinuances.

The influence of cultural values on the sustenance of a new idea is of immense significance as seen in the Spanish-American farm community in New Mexico. This same cultural value had a strong influence on the sustenance of tilapia fish farming introduced to Vietnam by the U.S. technical assistance workers.

Rogers (1962) reported this case thus:

> "These fish multiply like rabbits, provide needed protein, and are tasty eating. Lakes and farm ponds were stocked with tilapia fish. All went well until Communist sympathizers started a whispering campaign that the fish were poisonous. Sick persons were fed tilapia and induced to spread the word that the fish caused their sickness. A great deal of resistance of the idea was developed....."

Discontinuances could be rational or irrational as it were with adoption. Rationality is the use of the most effective means to reach a given end. An example of irrational discontinuance is an unsatisfactory experience with an innovation because the idea was not fully understood.

Rogers (1962), reported the case of one Netherlands laggard thus:

> "One Netherlands laggard.....adopted hay tripods upon the recommendation of a neighbor. However, he used the tripods incorrectly, the results were unsatisfactory, and discontinued the innovation after one year."

This form of irrationality is more likely found among later adopters who have low incomes, lack of resources (which prevent adoption or enhance discontinuances) and have less education coupled with their rigid traditional values.

Jibowo (1992) wrote that 'discontinuance could be caused by many reasons such as poor yield owing to improper application of the innovation, shortage of crop-land in case of crops, crop pests and diseases, and ill-health of adopters.' Such was the case of the discontinuance made with the continued adoption of OS6 rice variety in Ife Division of Oyo State, Nigeria.

The findings by Adler (1955), Johnson and Van de Ban (1959), and Silverman and Bailey (1961) as cited by Rogers (1962) all were in support of the generalization that "relatively later adopters are more likely to discontinue innovations than earlier adopters."

2.9.3 Conceptual Framework:

Kurt Lewin (1936) as reported by Rogers (1962) said a science without a theory is blind because it lacks the elements which alone is blind because it lacks the elements

which alone is able to organise the facts and give direction to research. Theory and facts must be closely related to each other.

The postulated relationship between concepts make a theory. However, this work aims at studying the interrelationships between conceptual variables that affect the farmer's behaviour towards discontinuance. Hence, the study is approached through a conceptual framework.

A concept according to Rogers (1962) is defined as a dimension stated in its most basic or "primitive" terms. This must be as general or abstract to enable its utilization in describing behaviour in many different types of social systems.

Adoption and discontinuance are two major concepts in this work. The former always precedes the latter.

Adoption is defined by Lionberger (1960) as the full-scale integration of a practice (innovation) into the on-going operation. The 'adoption of a new idea by an individual is a type of action. Discontinuance with the use of a new idea is also an act. Rogers (1962), defined discontinuance as a decision to cease use of an innovation after previously adopting. Leuthold (1967) also noted that it is the adoption unit's (farmer's) decision to stop using an innovation which has been used.

Parsons and Shils (1952) affirmed that an act consists of three basic elements. These are: (1) An actor (2) Orienting to (3) a situation. According to Rogers (1962) this behaviour conceptualization, implies that:

1. Behaviour is oriented towards attaining ends or goals.
2. It takes place in situation

3. It is normatively regulated

4. It involves an expenditure of effort or "motivation".

Sullivan (1953) as cited by Rogers (1962) wrote that the ultimate goal or end which individuals seek to attain is inter-personal security. Rogers (1962) defined security as that subjective state of well-being which minimizes tension. Good farm yield and fat cash returns are a form of security to farmers. Insecurity is a form of threat to existence and farmers like any other persons detest it.

In his "paradigm of the adoption of innovation....." Rogers (1962) showed clearly that the existing factors prior to adoption or discontinuance (the antecedents) affect both adoption and discontinuance decision of the farmer.

These factors are:

i. the personal characteristics of the farmer (actor's identity) and;

ii. the socio-economic characteristics of the farmer (farmer's perceptions of the situation).

Perception, as defined by Lindesmith and Strauss (1956), is the way in which an individual responds to any sense or impression which he detects. Borne out of this are other existing factors such as:

iii. the social structure of the community in which the farmer belongs. Durkheim (1953) as cited by Alao (1981) said individual action especially in a rural village is constrained to a large extent by the generalized norms and values of the society.

Alao (1981) wrote that several empirical studies of adoption of innovation

in various parts of the world have shown that the social structure of a community in which the farmer lives, exercises a contextual influence on the attitudes and behaviour of the farmer.

iv. The characteristics of the innovations also constitute the antecedents.

Barnet (1953), Alao (1980) and Ekong (1988) all submitted that the level of adoption of farmers is directly or indirectly determined by the innovation's characteristics. These include: Relative advantage of the innovation over old ones; Cost profitability; Compatibility with the existing culture, visibility; complexity; divisibility and feasibility of the innovation(s).

Kivlin (1960) as reported by Rogers (1962) said there were highest correlation between rate of adoption and relative advantage, complexity and compatibility of the innovation. He also reported Tucker (1961) as saying that complexity, divisibility, compatibility and relative advantage were not significantly related to rate of adoption although the relationship were all in the expected direction.

Alao (1980) reported that literacy, level of education, family size, social participation, mass media exposure, extension contacts, level of income had positive relationships with adoption.

Risk aversiveness (Okuneye, 1984), cosmopoliteness and age (Jibowo, 1980), economic constraints (Rogers, 1962), farm size (Siyanbola, 1991) are all other factors identified to have significant relationship with adoption.

Natural circumstances and 'information sources (intervening factors) are all important stimuli to the individual in the adoption process' (Rogers, 1962). All of these

stimuli could affect both the adoption and discontinuance decision of a farmer.

In his study of the results of recommendations for improvement by the ministry of Agriculture in 27 villages in four divisions of Western Nigeria, Kidd (1968) wrote:

> "..... the improved Alleyn J26 programme was a total failure. When adoption was restricted, it was so for the following reasons: no access to extension agents; no market for expanding products; lack of supervision to ensure proper use of innovations; lack of demand for the product. The last reason applied to NSI maize; potential consumers disliked its yellow colour....."

It is then inferred from the above that all the antecedents and intervening factors which affect adoption could also affect discontinuance. For instance, the yellow colour of NSI maize which was not compatible with the consumers' taste made no room for market and subsequently for the expansion of its production, hence, discontinuance.

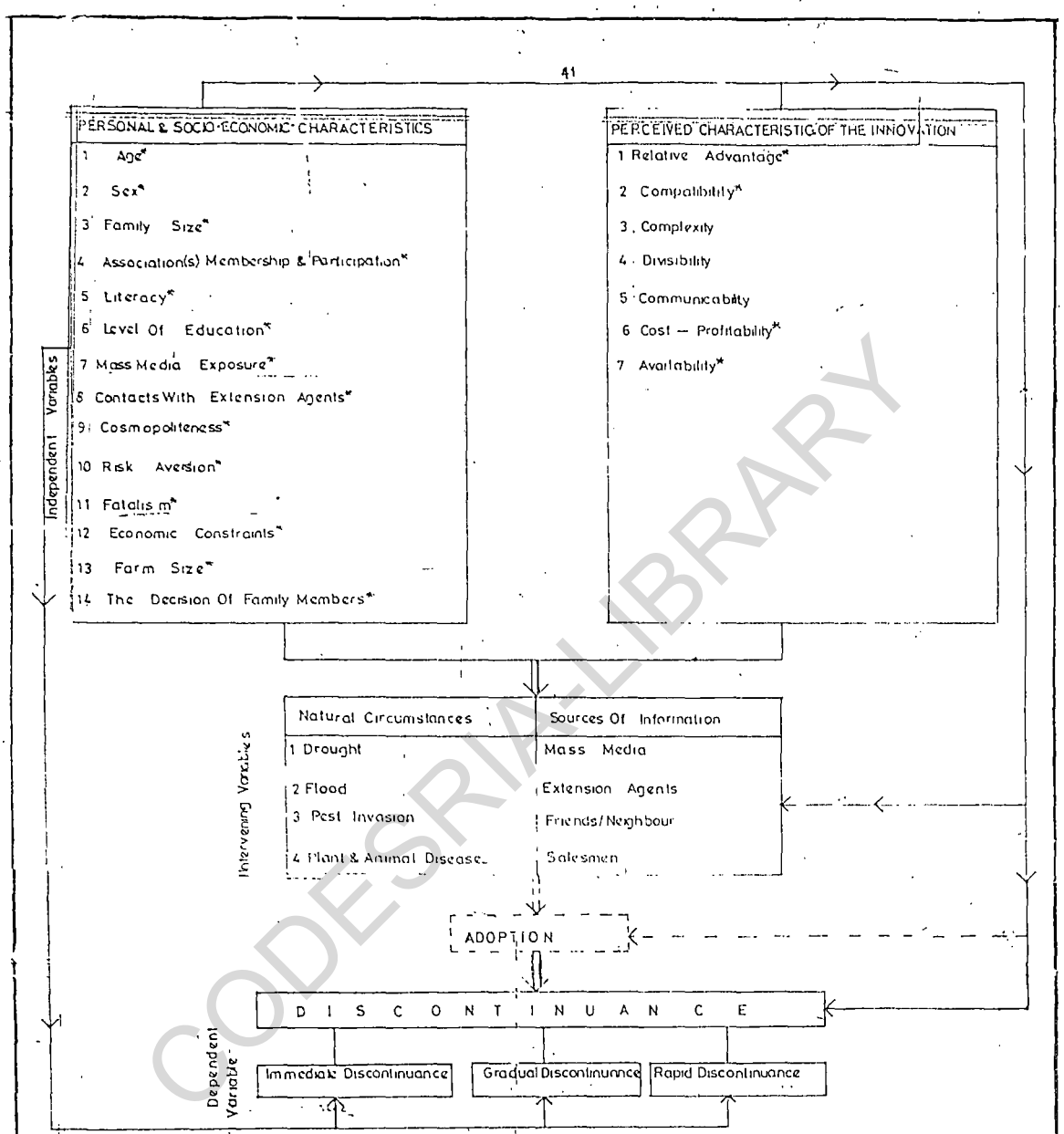

Figure 2: A Model of the discontinuance with an agric. innovation by a farmer within a community.
*: Independent variables investigated in the study.
Note: Dotted lines show the variable not vigorously investigated.

2.9.3 Model of the study:

The model of this research work showing the visual digramatic sketch of the pressumed relationship between explanatory variables and discontinuance was designed by the researcher. See figure 2 above.

2.9.4 Operation of the Model:

An operation is the empirical referent of a concept and may be a scale, index, or other measure (Rogers, 1962). The degree to which an operation is a valid measure of a concept is referred to as "epistemic relationship." Cottrell (1924) as cited by Rogers (1962) stated, 'items of behaviour such as attributes, trait, e.t.c., studied apart from the context provided by the actor's definition of the situation, yield meaningless results.' This model, therefore, accounts for the farmer's perceptions of the situation. Hence, it is divided into three phases. These are the:

i. antecedents;

ii. process;

iii. result.

Antecedents: According to Rogers (1962), antecedents are those factors present in the situation prior to the introduction of the innovation. These are further subdivided into two major groups:

(a) The farmer's personal and socio-economic characteristics

(b) The characteristics of the innovation

Process: This is the second phase of the model. It comprises of all intervening variables that interact between the antecedents and the result. All of these variables produce stimuli (during the course of adoption) which affect the farmer's discontinuance decision.

Result: The third phase of the model is the outcome of the farmer's decision to discontinue with the use of the innovation after it had been adopted. There is always an interregnum between final adoption and discontinuance. Rogers (op.cit) submitted that an innovation may be adopted at the conclusion of the adoption process and may either be used continuously, or rejected at later date, a form of discontinuance.

Discontinuance takes the form of immediate, gradual and rapid disengagement (rejection) from the adoption of an agricultural innovation by the farmer.

It is the interplay between the farmer's personal and socio-economic (his perceptions of the situation) characteristics and the characteristics of the innovation - in accordance with the aim of the innovation - holding all other factors (intervening variables) constant that brings about discontinuance.

CHAPTER THREE

3. METHODOLOGY

3.1 The Study Area:

Ekiti North of Ondo State is chosen for this study. The area comprises of two Local Governments - Ikole and Oye. There are about 31 communities in this area.

Ekiti North lies between latitudes 7°40¹ and 8°10¹ North of the Equator and between Longitudes 5°20¹ and 5°40¹ East of the Greenwich Meridian (London).

3.2 The Population Studied:

The population under study is predominantly the Yoruba, and specifically, the Ekiti dialectic group. Majority of the folk engage in farming and farm activities. The population, therefore, consists mainly of farmers.

3.3 Sample Selection:

Ekiti North was purposefully selected for this study. Five rural communities (Oye, Ikole, Ayede, Ayedun, Irele) were selected through simple random sampling. In each of the selected communities, thirty farmers were also selected by using simple random sampling. In all, a total of one hundred and fifty (150) farmers were studied.

3.4 Interviewing and Data Collection:

A field enumerator was employed for assistance in the collection of data between July and August, 1994.

3.5 Definition and Measurement of Variables

Two groups of variables (dependent and independent) were given consideration in this study.

Dependent Variable:

The dependent variable was farmer's level of discontinuance with recommended agricultural innovations. Information on innovations was obtained from the Ondo State Agricultural Development Project (Ikole Zonal Office). The total identified numbers of agricultural innovations disseminated to farmers were seventeen with their packages.* These innovations are: Improved maize, Improved Cassava cuttings, Improved rice, Improved cowpea, maize sole, optimum plant population, Use of fertilizer, Planting of yam minisett, Soybean production, Use of chemicals, Cocoa hybrid, copism, Alley farming, improved livestock feeding and housing, Rabbit production, Homestead fish production and Mechanization. Each of these innovations was assigned I point. Possible maximum score of a respondent is therefore 17.

Independent Variables:

These are the variables that affect or influence discontinuance decision, and yet are themselves conversely unaffected. Those that fall within this category in the study are the farmer's personal and socio-economic characteristics and, the characteristics of the innovations:

i. Age of farmer: This means the total number of years a farmer has spent on earth right through birth. Respondents were asked to give their age in years and grouped into 5 classes as follows: 25-34years, 35-44years, 45-55years, 55-64years, 64years and above.

ii. Sex: Respondents were observed and tagged male or female in accordance with their composition. 1 point was assigned to male while 0 was assigned to female

(dummy)

iii. Family Size: This comprises the total number of wives and children in addition to the husband. (where applicable). Respondents were grouped into 10 classes.

iv. Association(s) Membership and Participation: Respondents were asked the association(s) they belonged to and their degree of participation. 1 point was ascribed to ordinary membership; committee membership, 2 and, official status, 3. A farmer who is an ordinary member in just one association therefore score 1 point. A maximum score of 24 could only be obtained by a farmer who happened to be an officer in each of the eight given associations.

v. Literacy: Respondents were asked to indicate their abilities to read and write any of the major languages. A farmer who was able to read only scored 1 point while 2 points went to those who were able to read and write. No point went to those who could not do either of the two.

vi. Level of education: The total number of years spent at school was determined. This was obtained by asking farmers to state the number of years spent in each of primary, secondary and tertiary institution. A farmer who never had any formal education scored zero point.

vii. Mass media exposure: Respondents were asked to state mass medium/media from which they obtain information. Those media are radio, television, newspaper, magazines and leaflets. Each of these media scored 1 point. A farmer who had access to 1 medium scored 1 point; access to 2 media scored 2 points etc.

viii. Contact with extension agents: Respondents were asked to state how often they came in contact with extension agents per month. Scores were assigned according to the frequency.

ix. Cosmopoliteness: Farmers were asked how often they travelled out of their localities: whether daily; fortnightly; monthly; quarterly; or yearly. They were also required to state where they used to travel to. This was arranged in terms of distance to their localities: visits to other farms in the area was scored 1; other villages/towns outside the area, 2; other states in the federation, 3; and other countries, 4.

The places of visit (which were checked against purposes of visits) were also scored. 4 points accrued to travelling to collect agricultural information; 3 points was scored to visits made on business purposes; 2 points was scored to visits made to greet friends and 1 point for leisure. A respondent who travelled to other country(ies) (4) to collect agricultural information (4) had a total score of 16 points.

x. Risk aversion: This is the tendency to shy away from self-engagement with the "unknown". It is a form of attitude. An attitude according to Abiri (1976) as cited by Farinde (1991) is an organization of acquired emotional tendencies in varying degrees of favourability or unfavourability toward a particular concept. This may also be referred to as an affect or preparedness to respond in a certain way toward a social object or phenomenon. The affect will be for or against, whereas, preparedness is to accept or to reject. In attitude measurement,

therefore, a researcher focuses on both the positive and negative perspectives of attitude. The positive attitude is termed approach attitudinal change while negative attitude is termed avoidance attitudinal change. The values and beliefs of the people affect the attitude towards an object or a phenomenon. Measuring the risk aversiveness of the farmers was therefore ensured by asking respondents (farmers) to respond to four different statements all consisted in a given likert-type scale. All of these statements reflected negative attitudes although designed in way that attenuated the arousal of suspicion by the respondents.

Given a five point likert-type scale, farmers were asked to indicate one of the five response alternatives according to how best the statements characterise their feelings on socio-economic ground. The five point response categories were: strongly agree, scored 5; Agree, scored 4; Undecided, scored 3; Disagree, scored 2; strongly disagree, scored 1. Possible total score on the 4 items attitude on the farmers was 20 each as most unfavourable attitude and minimum of 4 scores for the most favourable attitude.

Total score for each respondent was calculated. The average scores were used in grouping the farmers into five categories thus: Highly risk-aversive, Risk-aversive, Neutral, Less risk-aversive, and Not risk-aversive. The neutral attitude was placed within the range. The neutral attitude is the attitude mean score. The unfavourable attitudes were placed below the mean score and the favourable attitudes were placed above the means score, as shown in the table below.

TABLE 3.1

Categories of attitude	Range
Not risk-aversive	1.0 - 1.99
Less risk aversive	2.0 - 2.99
Neutral	3.00
Risk aversive	3.1 - 4.00
Highly risk aversive	4.1 - 5.00

xi. Fatalism: This is another form of attitude which predisposes an individual to resigning to fate whenever situations are not working in his favour. The same procedure for the measurement of risk aversion was followed but with another 4 different statements based on beliefs and ideologies.

Total score for each respondent was calculated as well. The average scores were used in grouping the farmers into five categories thus: Highly fatalistic, Fatalistic, Neutral, Less fatalistic, and Not fatalistic. The neutral attitude was placed within the range as previously explained.

Below is a table showing this.

TABLE 3.2

Categories of attitude	Range
Not Fatalistic	1.0 - 1.99
Less Fatalistic	2.0 - 2.99
Neutral	3.00
Fatalistic	3.1 - 4.00
Highly Fatalistic	4.1 - 5.00

xii. Economic constraints: These explain the degree of availability and inavailability of resources (i.e production inputs like fund, labour and land) to the farmer during farming operations.

Respondents were asked whether: they were always faced with the problem of fund (which was scored 1 point); they were often faced with fund problem (scored 2); rarely faced with fund problem (scored 3); never faced with fund problem (scored 4).

They were also required to give the extent of labour availability; whether: enough labour was always available (scored 3); enough labour was not always available (scored 2); enough labour was never available (scored 1). They were also asked to indicate to what extent was land available; whether: enough land was always available (scored 3); enough land was not always available (scored 2); enough land was never available (scored 1). Fund, land and labour were checked against one another. Hence, the minimum score was assigned to the farmer who was always faced with the problem of fund (1), who never had enough labour (1) and who never had enough land (1), hence, scoring a total point of 1.

The maximum score was 36 points.

xiii. Farm size: The total number of hectares put under cultivation (with both arable and permanent crops) and the rearing of animals. Respondents were asked to give their total farm size in acres which was later converted to hectares.

xiv. The decision of family members: These are opinions of each member of the family (both extended and nuclear) as they affect the farmer's behaviour. Farmers were asked to indicate whether they were either influenced by any of

their family members. Those who responded 'Yes' were scored 1 point each while 'No' got zero point (dummy).

xv. Relative advantage of the innovation: Each of the 17 innovations under study was categorised into: Better off (with 3 points); the same (2 points) and Less better off (1), all relating to the existing traditional practices. Hence, a minimum score of 17 points could be got by a farmer whose perception of each of the innovations is "Less better off". Whereas, a maximum score of 51 could be got by a farmer whose perception of each of the innovations is "Better off". A response of 'no decision' got zero.

xvi. Compatibility: The consistence of an innovation to the existing norms and values of the recipient. The farmers were required to state whether each of the 17 innovations was either compatible (2 points) or not compatible (1 point).

In all, a farmer could score a total maximum score of 34 points and minimum score of 17 points or less. "No response" had no point.

xvii. Cost: Farmers were asked to state whether each of the 17 innovations was either: expensive (1 point) or not expensive (2 points). "No response" had no point. The possible maximum score that a farmer could have was 34 and the minimum score was 17 if he considered all the innovations expensive.

xviii. Availability: This shows how easy the innovation could be practised as a result of the easy procurement of inputs which are essential for use.

The farmers were required to state whether each of the 17 innovations was either:

Available (scored 3 points), Less available (scored 2 points) and Not available (scored 1 point).

The possible maximum score was 51 for the farmer who perceived that each of the innovations was "available." The farmer who perceived all the innovations to be "Not available" scored a total score of 17 points.

3.6 Research Instrument

Interview schedule consisting of structured, open and close-ended questions was used to elicit information from the farmers on the following parameters:

1. Farmer's selected personal and socio-economic characteristics
2. Characteristics of innovations
3. Number of agricultural innovations adopted and later discontinued by farmers.
4. The factors responsible for the discontinuances made
5. The natures of discontinuances made.

3.7 Validity and Reliability of Research Instrument: The test of validity of unstructured questionnaires was necessary to ascertain if the research instrument measured all the variables required within the framework of the research objectives. Hence, content validity was the focus. Technical advice were sought from experts in evaluation and rural sociology in the department of Agricultural Extension and Rural Sociology, Obafemi Awolowo University, Ile-Ife. This was with a view to subjecting the research instrument to critical evaluation. Having assessed and criticized the instrument, inadequate items were removed and necessary ones were added.

Pretesting: The research instrument was pretested in the month of June, 1994. A sample of ten farmers in Ekiti North division of Ondo State was used. Following the pretesting, necessary adjustments were made by modifying all the ambiguous items and questions.

Measuring reliability of instruments

Test-retest method was used to determine the consistency of the instrument-scale of the various variables included in the final research instrument. Ten farmers in Ekiti North division of Ondo State were sampled and administered with the interview schedule, twice at interval of two weeks in the month of July. The second test scores were correlated with the first test scores for all the variables given consideration in the research instrument. The correlation coefficient (r) for the test scores of the farmers was 0.87. This was gotten by using spearman's rank-order correlation analysis.

3.8 Analysis of Data:

Simple descriptive statistical techniques such as frequency counts, percentages, mean, standard deviation and weighted mean score were used in analysing the data collected. The relationship between the dependent variable (farmers level of discontinuance with innovations) and independent variables was determined by using correlation analysis.

Multiple regression analysis was used to determine the magnitude of change in farmer's level of discontinuance with innovations as explained by each of the independent variables.

Correlation and regression analyses were used to test the hypotheses of the study.

3.9 Justification for the use of Statistical Techniques

Regression and correlation analyses

Regression and correlation are both measures of association. However, while correlation co-efficient measures the joint relationship between two variables, regression co-efficient clearly shows the amount of change that will be observed in the value of one variable (the dependent variable), when there is an alteration in the value of the other variable (independent variable).

In essence, in measuring the joint relationship between farmer's level of discontinuance with the use of innovations and independent variables, correlation analysis was employed. Regression analysis was used to determine the magnitude of variation in farmer's level of discontinuance as explained by each independent variable.

Pearson's correlation coefficient (r)

Caswell (1982) as cited by Gboku, (1985) submitted that when two variables have numerical values and one is continuous, the magnitude of linear relationship between the two variables can be measured using the techniques of correlation.

Hence, Pearson's correlation coefficient was used in determining the degree of linear relationship between the dependent variable and each of the independent variables.

Multiple regression

Richard (1988) said when there are more than two variables having numerical values and continuous, the magnitude of relationship between the variables and most importantly, the degree of change in the dependent variable as explained by each of the

independent variables can be determined using multiple regression coefficient.

The effect of the relationship between farmer's level of discontinuance with agricultural innovations and all independent variables in this study was determined by carrying out multiple regression analysis.

3.9.0 Limitation of the study

The limitations of fund, and time at the researcher's disposal have engendered narrowing down the scope of study to an area (Ekiti North) in the state.

Also, farmers attitudinal drive (willingness and promptness) towards adoption of innovations as they affect discontinuance were not given consideration in this study.

It is however believed that this study would serve a major basis on which further studies on the subject of discontinuance could be conveniently carried out.

CHAPTER FOUR

4. ANALYSIS OF DATA AND DISCUSSION

This chapter is divided into five sections and these are outlined as follows:-

I Farmer's selected personal and socio-economic characteristics

II The innovations introduced and their characteristics

III Discontinuance of the use of agricultural innovations

IV The nature of discontinuance

V Farmer's level of discontinuance

VI Testing of hypotheses.

The data analysis and discussion on each section now follows:-

I FARMER'S SELECTED PERSONAL AND SOCIO-ECONOMIC CHARACTERISTICS

4.1 Age

The average age for the respondents was 52.5 with a standard deviation of 10.08. Data in Table 4.1 show that 38% of the farmers aged between 45-54 years, 28.7% was between 55-64 years while 17.3% of the farmers' age fell between 35-44 years. Also, 12.7% of the farmers aged above 64 years while 3.3% had a range of between 25-34 years. None of the farmers was below 25 years of age.

This analysis shows that just 58.6% of the farmers were able bodied people that are still active in farming whereas 41.4% are of age. It could then be inferred that age may be one of the major factors contributing to discontinuances as senility wanes the farmer's strength.

TABLE 4.1

Distribution of farmers by age

AGE (YEARS)	FARMERS	
	N	%
25-34	5	3.3
35-44	26	17.3
45-54	57	38.0
55-64	43	28.7
Above 64	19	12.7
Total	150	100.0

N = 150

Mean = 52.5 years

Standard Deviation = 10.08

4.2 Sex

Data in Table 4.2 reveals that 91.3% of the farmers were male and 8.7% were female.

This analysis clearly shows that the greater percentage of the farmers' population studied is mostly men who have more physical strength to meet with the rigorous tasks of agricultural activities.

TABLE 4.2

Distribution of farmers by sex

SEX	FARMERS	
	N	%
Male	137	91.3
Female	13	8.7
Total	150	100.0

N = 150

4.3 Marital Status

Data in Table 4.3 show the distribution of farmers according to their marital status. Majority (88%) of the respondents were married, 4.7% were either widowed or widowered, 3.3% of the population were single, 3.3% were divorced and 0.7% of the respondents happened to be separated. The analysis then shows that majority of the farmers were married. It could be said that, the decision of the farmers to discontinue with adoption of any innovation could be influenced by the decision of their family members.

Table 4.3

Distribution of farmers by marital status

MARITAL STATUS	FARMERS	
	N	%
Single	5	3.3
Married	132	88.0
Widowed/widowered	7	4.7
Divorced	5	3.3
Separated	1	0.7
Total	150	100.0

N = 150

4.4 Family Size

The average for the respondents was 8.74 with a standard deviation of 4.14. Data in Table 4.4 show that 24% of the farmers had between 5-6 family members, 19.3% had 7-8 family members, 16% had between 9-10 members, 8.7% had between 3-4 members, 8.7% of the respondents had 13-14 members and 8.7% had 15-16 members. Also, 4.7% of the respondent population had above 17 family members whereas 3.3% had between 1-2 members.

The above analysis reveals that majority of the farmers (59.3%) had family size that ranged between 5-10 members, 28.7% of the respondents had between 11-17 and above members and 12% of the total population had between 1-4 family members. It then shows that most farmers are most likely to have ready helping hands as these members constitute family labour (Alao, 1980). Also, the continued adoption or discontinuance decisions of farmers could be influenced directly or indirectly by these members as they are also affected by matters arising on the farm. At any rate, this assumptions hold only if a substantial number of family members are resident in the same place.

TABLE 4.4

Distribution of farmers by family size

NO OF MEMBERS	FARMERS	
	N	%
1-2	5	3.3
3-4	13	8.7
5-6	36	24.0
7-8	29	19.3
9-10	24	16.0
11-12	10	6.6
13-14	13	8.7
15-16	13	8.7
Above 17	7	4.7
Total	150	100.0

N = 150

Mean = 8.74 members

Standard deviation = 4.14

4.5 Association(s) Membership and Participation

Data in Table 4.5 show the distribution of farmers by the associations they belonged to and their level of participation in such associations. Within the Farmers Cooperative, 32.7% of the respondents were ordinary members, 16.7% were committee members while 8% were officers. Within the improvement union, 7.3% were ordinary members, 5.3% were committee members while 2.7% of the farmers were officers. In the Elite club, 4.7% of the respondents were ordinary members, 8.7% were committee members and 3.3% were officers. 20% of the farmers were ordinary members of Religious organization, 10.7% were committee members and 14.7% were officers within these same organizations. In the Trade Union, 7.3% of the farmers were ordinary members, 2.7% were committee members while 0.7% accounted for the officers. In the village council, 11.3%, 6% and 3.3% accounted for ordinary members, committee members and officers respectively. Also, political organization had 8% of the farmers as ordinary members, 2% as committee members and no officer. In other associations, 10% of the farmers were ordinary members, 0.7% accounted for committee members and 2.7% were officers. The analysis reveals that 101.3% of the farmers were ordinary members in the various associations they belonged to. 52.8% were committee members while 35.4% of the respondents were officers. Both committee members and officers summed up to 88.2% of the population. It could then be inferred that farmers had fairly active participation in social organizations. This may then have an inverse relationship with discontinuance decisions of the farmers.

TABLE 4.5

Distribution of farmers by Association membership and participation

ASSOCIATION	ORDINARY MEMBERS		COMMITTEE MEMBERS		OFFICERS	
	N	%	N	%	N	%
Farmers' Cooperative	49	32.7	25	16.7	12	8.0
Improvement Union	11	7.3	8	5.3	4	2.7
Elite Club	7	4.7	13	8.7	5	3.3
Religious Organization	30	20.0	16	10.7	22	14.7
Trade Union	11	7.3	4	2.7	1	0.7
Village Council	17	11.3	9	6.0	5	3.3
Political Organization	12	8.0	3	2.0	-	-
Others	15	10.0	1	0.7	4	2.7

N = 150

Note: Most farmers belonged to more than one association and different levels of participation.

4.6 Literacy

Table 4.6 shows the distribution of farmers by literacy. Data show that 38% of the respondents were neither able to read nor write. Just 4% were able to read only and 58% of the farmers could read and write. The analysis then shows that majority (62%) of the farmers were literate. It could then be safely inferred that most farmers studied are likely to have little or no problem in understanding all the written packages of (the) innovations introduced to their communities.

TABLE 4.6

Distribution of farmers by literacy

LITERACY	FARMERS	
	N	%
Not able to read or write	57	38.0
Able to read only	6	4.0
Able to read and write	87	58.0
Total	150	100.0

N = 150

4.7 Level of Education

(a) Data in Table 4.7 show the distribution of farmers by extent of formal education. They reveal that 42.7% of the respondent never had any formal eduction, 24.7% had primary education, 14% had secondary education and 18.7% had post-secondary education.

The analysis shows that 57.4% of the respondents had formal education ranging between primary and postsecondary education. Since it was found that there was no significant relationship between formal education and adoption (Alao, 1980), it could be said that there may be no significant relationship between discontinuance and level of formal education.

TABLE 4.7

Distribution of farmers by extent of formal education

EXTENT OF FORMAL EDUCATION	FARMERS	
	N	%
No formal education	64	42.7
Primary education only	37	24.7
Secondary education	21	14.0
Post-secondary education	28	18.7
Total	150	100.1

N = 150

(b) Data in Table 4.8 show the distribution of farmers by the number of years spent at school. The average for the respondents was 10.03 with a standard deviation of 4.93. Data show that 38.4% of the farmers spent between 11-15 years at school, 25.6% spent between 6-10 years, 23.3% spent between 1-5 years while 12.8% spent between 16-20 years in school.

This analysis reveal that majority of the farmers had education above primary school level. It may be inferred that farmers are more likely to adopt and continue with the use of innovations due to their high level of knowledge.

TABLE 4.8

Distribution of farmers by the number of years spent at school.

NO OF YEARS SPENT AT SCHOOL	FARMERS	
	N	%
1-5	20	23.3
6-10	22	25.6
11-15	33	38.4
16-20	11	12.8
TOTAL	86	100.1

N = 86

Mean = 10.03

Standard deviation = 4.93

4.8 Mass Media Exposure

Table 4.9 shows the distribution of farmers by Mass media exposure. Data show that 91.3% of the respondents had access to radio, 55.3% had access to television, 17.3% had information through newspapers, 28% got message from magazines or bulletins and 16.7% received information through leaflets.

The analysis reveals that many of the farmers had access to one or more media. Majority of the farmers however, listened to radio and watched television programmes rather than written information. It may then be inferred that farmers' access to mass media (through which they or receive farm information, on regular basis) may discourage discontinuance.

TABLE 4.9

Distribution of farmers by mass media exposure.

MASS MEDIA	FARMERS	
	N	%
Radio	137	91.3
Television	83	55.3
Newspapers	26	17.3
Magazines/bulletins	42	28.0
Leaflets	25	16.7

N = 150

Note: Respondents gave more than one medium-to-which were exposed.

4.9 Contacts with Extension Agents

Table 4.10 shows the distribution of farmers by the number of contacts made with extension agents. Data show that 63.3% of the respondents had contacts with extension agents twice in a month, 18.7% had no contact at all, 14.7% had contact once in a month and 3.3% had contacts with extension agents thrice in a month. The analysis clearly reveals that majority of the farmers (81.3%) had contacts with extension agents who furnished them with agricultural information. It may be safely deduced then that many of the farmers are likely to have more encouragement in continuing with the use of adopted innovations (all things being equal) since the agents are always available to render assistance through follow-up visits.

TABLE 4.10

Distribution of farmers by the number of contacts made with extension agents within a month.

NO OF CONTACTS	FARMERS	
	N	%
No contact	28	18.7
1 time	22	14.7
2 times	95	63.3
3 times	5	3.3
TOTAL	150	100.0

N = 150

4.9.0Cosmopoliteness

Table 4.11 shows the frequency of travelling made by farmers. Data show that 30.7% of the farmers travelled yearly, 21.3% of the population travelled quarterly, 24% travelled fortnightly and 14.7% travelled monthly. Also, 8.7% of the farmers used to travel weekly and just 0.7% travelled daily.

The analysis shows that few of the farmers (33.4% of the total population) had frequent travel experiences ranging between daily and fortnightly. Relatively greater percentage (66.7%) of the respondents population did not travel frequently (the range is between monthly and yearly). It could then be drawn that majority of the farmers are not likely to be exposed to much of external influences and experiences. This then could have a positive relationship with their discontinuance decisions as they are scared off by little hindrances in adoption which they do not know exist somewhere else.

TABLE 4.11

Distribution of farmers by frequency of travel.

FREQUENCY OF TRAVEL	FARMERS	
	N	%
Daily	1	0.7
Weekly	13	8.7
Fortnightly	36	24.0
Monthly	22	14.7
Quarterly	32	21.3
Yearly	46	30.7
TOTAL	150	100.1

N = 150

4.9.1 Reasons for Embarking on Travelling

Table 4.12 shows the distribution of farmers by places visited and purposes of such visits. Data show that 13.3% of the farmers visited other farms in the locality to obtain agricultural information. 'This may be during farm demonstration by extension workers on contact or progressive farmers' farm. Such trips may also be made during farm tour, field day...' (Farinde, 1991). Just 7.3% went to farms in the locality for business purposes. This could be during selling and buying of farm produce. About 13.0% of the respondents were on farms in the locality for courtesy call on friends and relatives. Out of those farmers who travelled to other villages and towns outside their locality, 18.7% went for agricultural information, 24% went on business purposes, 22% went on the ground of courtesy call on friends and relatives and 2% went for leisure purposes. As for the farmers who went to other states in the federation, 3.3% said the purpose was to collect agricultural information, 7.3% said, it was for business purpose, 13.3% of the respondents said the purpose of travel was based on courtesy on friends and relatives while 13.3% went for leisure purpose. Just 1.0% of the farmers travelled to other countries for the purpose of business transactions.

The analysis clearly reveals that 35.3% of the respondents travelled for the purpose of collecting agricultural information, 39.3% travelled for business purposes, 48.6% normally travelled to greet friends and relatives and 15.3% travelled for leisure purposes. It is then inferred that a relatively fair percentage of the farmers are committed to farming and business and perhaps, those who travelled to greet friends and relatives and those who went on leisure took

farming as a secondary profession. Farmers who are more committed are likely to have less discontinuance unlike those who take farming as a secondary profession.

TABLE 4.12

Distribution of farmers by places visited and purposes of such visits

PLACE VISITED	For Agric. Information N	%	For business purposes N	%	For courtesy/greetings made of friend/relatives N	%	For leisure purposes N	%
Other farms in the locality	20	13.3	11	7.3	20	13.3	-	-
Other villages/town outside the locality	28	18.7	36	24.0	33	22.0	3	2.0
Other states in the federation	5	3.3	11	7.3	20	13.3	20	13.3
Other countries	-	-	1	0.7	-	-	-	-

N = 150

4.9.2 Risk Aversion:

Table 4.13 shows the distribution of farmers by risk aversion. The average for the respondents was 2.09 with a standard deviation of 0.62. Data show that 49.3% of the farmers were highly risk-aversive, 38.7% were risk-aversive and 8.7% were neutral. Also, 3.3% of the respondents were less risk-aversive but none of the farmers were not risk-aversive.

The analysis reveals that majority of the farmers (88%) were more prone to averting risk in all of their ventures. 3.3% had little tendency of risk-aversion while 8.7% of the population were undecided. A conclusion could then be drawn that the farmers were majorly subsistent who were always cautious about new practices which might jeopardize their familiar sources of food or make them poor (Chambers, 1983). Even where such farmers adopt any innovation, they are quick to discontinue with its use if they experience any little problems in the course of adoption.

TABLE 4.13

Distribution of farmers by Risk-Aversion.

DEGREE OF RISK-AVERSIVENESS	FARMERS	
	N	%
Not risk-aversive (1.0-1.99)	-	-
Less risk-aversive (2.0-2.99)	5	3.3
Neutral (3.0)	13	8.7
Risk-aversive (3.1-4.0)	58	38.7
Highly risk-aversive (4.1-5.0)	74	49.3
TOTAL	150	100.0

N=150

Mean = 2.09, Standard Deviation = 0.62

4.9.3 Fatalism

Table 4.14 shows the distribution of farmers by Fatalism. The average for the farmers was 2.94 with a standard deviation of 0.95. Data show that 28.7% of the farmers were fatalistic, 28.7% were less fatalistic, and 18.7% were highly fatalistic. However, 13.3% of the respondents were not fatalistic while 10.7% were neutral. The analysis then shows that 42% of the total respondents had more of unfavourable attitude towards fatalism whereas, 47.4% were more prone to fatalism, and those who were undecided accounted for 10.7% of the total population. It could then be deduced that some of the farmers ".... would attempt to rationalize a lack of effort in the face of threatened catstrophy" (Ekong, 1988), hence making them to resigning to fate whenever they fail in the adoption of an innovation. This invariably results to discontinuance. Conversely, some of the farmers would keep on trying their best possible in all endeavours even at the face of difficulties.

TABLE 4.14

Distribution of farmers by fatalism.

DEGREE OF FATALISM	FARMERS	
	N	%
Not fatalistic (1.0-1.99)	20	13.3
Less fatalistic (2.0-2.99)	43	28.7
Neutral (3.0)	16	10.7
Fatalistic (3.1-4.0)	43	28.7
Highly fatalistic (4.1-5.0)	28	18.7
TOTAL	150	100.1

N = 150

Mean = 2.94, Standard Deviation = 0.95

4.9.4 Economic Constraints

Fund: Table 4.15a shows the distribution of farmers by their financial positions. Data show that 43.3% of the farmers were often faced with the problem of fund, 38% were always cash crunched, 14% were rarely faced with the problem of fund and 4.7% never had fund problem.

The analysis shows that a greater portion (81.3%) of the population under study were under severe problem of fund whereas only 18.7% could surge ahead with little or no problem of fund. The submission is that farmers who are poor are likely to discontinue with the adopted innovation when they find it difficult to source fund for continued adoption.

TABLE 4.15a

Distribution of farmers by their financial positions.

FINANCIAL POSITION	FARMERS	
	N	%
Always faced with the problem of fund	57	38.0
Often faced with the problem of fund	65	43.3
Rarely faced with the problem of fund	21	14.0
Never faced with the problem of fund	7	4.7
TOTAL	150	100.0

N = 150

Labour:

Table 4.15b shows the distribution of farmers by labour available to them. Data show that 78.7% of the population acknowledged, that enough labour was not always available during farming operations, 16.7% said enough labour was always available and 4.7% of the farmers believed that enough labour was never available to them. The analysis reveals that majority of the farmers (83.4%) were more or less constrained by the availability of labour and this could have a direct influence on their discontinuance decision.

TABLE 4.15b

Distribution of farmers by the amount of labour available to them during farming operations.

LABOUR AVAILABILITY	FARMERS	
	N	%
Enough labour is always available	25	16.7
Enough labour is not always available	118	78.7
Enough labour is never available	7	4.7
TOTAL	150	100.1

N = 150

Land:

Table 4.15c shows the distribution of farmers by the availability of land. Data show that 75.3% of the respondents said enough land was always available, 24% felt enough land was not always available and 0.7% acknowledged that enough land was never available.

The analysis shows that a greater percentage of the farmers had access to enough land. It may then be safely inferred that the access to the use of enough land has an inverse relationship with discontinuance decisions (if all other factors are held constant).

TABLE 4.15c

Distribution of farmers by land availability.

LAND AVAILABILITY	FARMERS	
	N	%
Enough land is always available	113	75.3
Enough land is not always available	36	24.0
Enough land is never available	1	0.7
TOTAL	150	100.0

N = 150

4.9.5 Farm Size:

Table 4.16 shows the distribution of farmers by farm size. The average for the respondents was 10.28 and standard deviation of 10.96. Data show that 49.3% of the respondents had farm sizes ranging between 1-5 hectares, 20% had between 6-10 hectares, 6% had between 21-25 hectares, 5.3% had between 11-15 hectares, 5.3% had between 16-20 hectares and 5.3% had between 26-30 hectares. Other categories are 2% of the farmers that fell between 31-35 acres, 2% had below 1 hectare and 4.7% of the respondents had above 40 hectares. The analysis clearly indicates that most of the farmers operated at subsistence level as only 4.7% had above 40 hectares of land put under farming. The submission then is that farmers who have relatively few hectares for farming are likely to discontinue with the use of innovations either gradually or rapidly (particularly if they intend to adopt other fresh innovations). The reason is that they are constrained by the size of farm to expand their production ventures.

TABLE 4.16

Distribution of farmers by farm size.

FARM SIZE (IN HECTARES)	FARMER	
	N	%
Below 1	3	2.0
1-5	74	49.3
6-10	30	20.0
11-15	8	5.3
16-20	8	5.3
21-25	9	6.0
26-30	8	5.3
31-35	3	2.0
36-40	-	-
Above 40	7	4.7
TOTAL	150	100.0

N=150
Mean = 10.28
Standard Deviation = 10.96

4.9.6 The Decision of Family Members

Table 4.17 shows the distribution of farmers by the decision of family members. Data show that 78% of the respondents were influenced by their husbands or wives and 22% of the population were neither influenced by wives or husbands. 53.3% of the respondents were influenced by their children and 46.7% were not influenced by children. Also, 67.3% of the farmers acknowledged that they were influenced by other family (extended) members, and 32.7% were never influenced by extended family members. The analysis indicates that almost all the farmers' decision were influenced by at least one of their family members. This invariably may affect the discontinuance decisions of farmers either favourably or unfavourably since each of the members is likely to serve as a source of labour on the farm (especially when resident within the same locality).

TABLE 4.17

Distribution of farmers by the decision of the family members.

FORMS OF INFLUENCE	FARMERS			
	'YES'	%	'NO'	%
Influenced by wife/husband	117	78.0	33	22.0
Influenced by children	80	53.3	70	46.7
Influenced by other family members	101	67.3	49	32.7

N=150

Note: Most respondents gave more than one source of influence

THE INNOVATIONS INTRODUCED AND THEIR CHARACTERISTICS

4.9.7 Relative Advantage

Table 4.18 shows the distribution of innovations by their relative advantage in terms of outputs and practicability over previously existing practices. Data show that farmers perceived the planting of improved maize as being: 'better off' than local vaireties (96.7%), 'the same' (0.7%) and 'less better off' (2%). About 1% of the farmers was undecided. Those who acknowledged that the innovation was less better off when interviewed specially, felt the yellow maize was only good for animal consumption and not for man. For the planting of improved cassava cuttings, 95.3%, 2%, and 0.7% said the innovation was better off, the same, and less better off respectively. The percentage of the farmers who wer undecided was 2%. When interviewed separately, the respondents who felt the innovation was less better off submitted that the harvesting of tubers is two time specific, otherwise, they (tubers) get rotten in no time. Also, some believed that flour made from them did not hold together for long when used in preparing "amala". Furthermore, 89.3%, 0.7%, and 2% of the farmers said planting of improved rice was better off, the same, less better off and undecided respectively. About 8% of the farmers was undecided. The planting of cowpea was perceived as better off, and the same by 74.7%, and 3.3% of the respondents respectively. None of the farmers said the innovation was less better off. Planting of maize as a sole crop was acknowledged better off by 63.3% of the respondents, the same by 7.3%, less better off by 10.7% and undecided by 18.7% of the farmers' population. Optimum plant population (correct spacing) was

said to be better off by 76% of the farmers, the same by 2.7%, less better off by 8.7% and 12.7% of the respondents was undecided. Also, 94%, and 0.7% of the respondents respectively submitted that fertilizer application was better off, and the same with existing old practices. About 5.3% of the farmers was undecided. Planting of yam minisett was viewed as better off (2.7%), less better off (17.3%) while 80% of the farmers was undecided. The planting of soybean was viewed as better off (62%), the same (5.3%), less better off (2.7%) and, undecided (30%) by the respondents. The use of chemicals (insecticides, herbicides, fungicides) was seen as being better off by 89.3% and undecided by 10.7% of the respondents. Planting of hybrid cocoa seedlings was acknowledged as better off by 85.3% of the farmers and 0.7% believed it was the same while 14% of the respondents were undecided. Cocoa rehabilitation (copism) was considered better off by 80% of the farmers while 0.7% felt it was the same and 19.3% of the respondents were undecided. The adoption of alley farming was perceived as better off by 0.7% of the farmers, 22.7% said it was less better off while 76.7% of the total population were undecided. About 64%, 2%, 6% and 28% of the respondents said improved feeding and housing of sheep and goat was better off, the same, less better off and undecided respectively. As much as 63.3%, 4.7% and 32% of the respondents believed rearing of rabbit was better off, less better off and undecided respectively. The adoption of homestead fish production was viewed as better off by 50% of the farmers population, the same by 2.7%, less better off by 13.3%, undecided by 34% of the respondents. About 69.0%, and 1.0%, 5.0% of the farmers believed that mechanization was better off,

the same, and less better off and respectively. Farmers who were undecided accounted for 25% of the population. With the exception of yam minisett and alley farming, all the innovations were deemed better off by majority of the farmers. This may encourage continued adoption.

TABLE 4.18

Distribution of innovations by their relative advantage.

INNOVATION	BETTER OFF N	%	THE SAME N	%	LESS BETTER OFF N	%	UNDECIDED (No response) N	%
Planting of improved maize	145	96.7	1	0.7	3	2.0	1	0.7
Planting of improved cassava	143	95.3	3	2.0	1	0.7	3	2.0
Planting of improved rice	134	89.3	1	0.7	3	2.0	12	8.0
Planting of cowpea	112	74.7	5	3.3	-	-	33	22.0
Planting of maize (sole)	95	63.3	11	7.3	16	10.7	28	18.7
Correct spacing (O.P.P.)	114	76.0	4	2.7	13	8.7	19	12.7
Application of fertilizer	141	94.0	1	0.7	-	-	8	5.3
Planting of yam minisett	4	2.7	-	-	26	17.3	120	80.0
Planting of soybean	93	62.0	8	5.3	4	2.7	45	30.0
Use of Chemicals (herbicides, pesticides, fungicides)	134	89.3	-	-	-	-	16	10.7
Planting of hybrid cocoa	128	85.3	1	0.7	-	-	21	14.0
Cocoa rehabilitation (copism)	120	80.0	1	0.7	-	-	29	19.3
Alley farming	1	0.7	-	-	34	22.7	115	76.7
Improved feeding/housing of sheep and goat	96	64.0	3	2	9	6.0	42	28.0
Rearing of rabbit	95	63.3	-	-	7	4.7	48	32.0
Homestead fish production	75	50.0	4	2.7	20	13.3	51	34.0
Mechanization	104	69.3	1	0.7	7	4.7	38	25.3

N = 150

4.9.8 Compatibility

Table 4.19 shows the distribution of innovations by compatibility with community's preference in terms of food habits values and norms. Data indicate that 95.3% and 4.7% of the respondents perceived planting of improved maize as compatible and not compatible respectively. About 94% and 6% said planting of improved cassava cuttings was compatible with their food habits and not compatible respectively. Planting of improved rice was perceived as compatible, not compatible and undecided by 94.7%, 2% and 3.3% of the respondents population respectively. Planting of cowpea was perceived compatible by 75.3% of the respondents, not compatible by 10.7% and undecided by 14%. Planting of maize (sole) was acknowledged compatible, not compatible and undecided by 63.3%, 20% and 16.7% of the respondents respectively. Farmers submitted that Optimum Plant Population (correct spacing) was compatible (78.7%), and not compatible (10.7%). About 11% of the farmers was undecided. Fertilizer application was perceived as compatible, not compatible and undecided by 92%, 4.7% and 3.3% of the farmers respectively. Farmers said planting of yam minisett was compatible (14%) not compatible (65%) and undecided (21%). Planting of soybean was considered compatible (46.7%), not compatible (38%), and undecided (15.3%) by of the respondents. Whereas, 14% of the respondents were undecided on the use of chemicals, 80.7% and 5.3% viewed the innovation as compatible and not compatible respectively. Planting of hybrid cocoa was acknowledged compatible by 85.3% of the respondents, and not compatible by 3.3% and, 11.3% of them was undecided. Cocoa rehabilitation (copism) was said to be compatible (75.3%), not compatible (9.3%) and undecided (15.3%) by the respondents. For alley farming, 18.7%, 52.7% and 28.7% of the

farmers said it was compatible, not compatible and undecided respectively. Improved feeding and housing of sheep and goat was considered compatible, not compatible and undecided by 63.3%, 21.3% and 15.3% of the farmers respectively. Rearing of rabbit was said to be compatible (58.7%), not compatible (17.3%), and undecided (24%) by the respondents respectively. While 24.7% of the farmers were undecided on Homestead fish production, 33.3% and 42% of the farmers respectively perceived the innovation as compatible and not compatible. Also, mechanization was viewed compatible by 62.7% of the respondents, and not compatible by 20% while 17.3% of the population was undecided.

The analysis then shows that all the innovations introduced, with the exception of yam minisett and alley farming, were considered compatible with the communities' tastes. It could then be inferred that, there may be no reasons for discontinuance, all things being equal.

TABLE 4.19

Distribution of innovations by compatibility

INNOVATION	COMPATIBLE N %	NOT COMPATIBLE N %	UNDECIDED N %
Planting of improved maize	143 95.3	7 4.7	- -
Planting of improved cassava cuttings	141 94.0	9 6.0	- -
Planting of improved rice	142 94.7	3 2.0	5 3.3
Planting of cowpea	113 75.3	16 10.7	21 14.0
Planting of maize (sole)	95 63.3	30 20.0	25 16.7
Correct spacing (O.P.P)	118 78.7	16 10.7	16 10.7
Application of fertilizer	138 92.0	7 4.7	5 3.3
Planting of yam minisett	21 14.0	97 65.0	32 21.0
Planting of soybean	70 46.7	57 38.0	23 15.3
Use of chemicals (herbicides, pesticides, fungicides)	121 80.7	8 5.3	21 14.0
Planting of hybrid cocoa	129 85.3	5 3.3	17 11.3
Cocoa rehabilitation (copism)	113 75.3	14 9.3	23 15.3
Alley farming	28 18.7	79 52.7	43 28.7
Improved feeding/housing of sheep and goat	95 63.3	32 21.3	23 15.3
Rearing of rabbit	88 58.7	26 17.3	36 24.0
Homestead fish production	50 33.3	63 42.0	37 24.7
Mechanization	94 62.7	30 20.0	26 17.3

N = 150

4.9.9 Cost-profitability Ratio

The distribution of innovations by cost-profitability ratio is shown in table 4.20. Data show that planting of improved maize was considered expensive by 8% of the respondents, not expensive by 86% of the population. 6% of the farmers was undecided. About 3.0%, 93.0% and 5.0% of the respondents said the planting of improved cassava was expensive, not expensive and undecided respectively. Planting of rice was acknowledged as expensive (14.7%), not expensive (77.3%) and, undecided (8%) by the farmers. Also, planting of cowpea was said to be expensive, not expensive and undecided by 22.7%, 66% and 11.3% of the respondents respectively. Farmers said planting of maize (as a sole crop) was expensive (9.3%), not expensive (76.7%) and, undecided (14%). Correct spacing (0.P.P.) was said to be expensive (11.3%), not expensive (70%) and, undecided (18.7%) by the population under study. Application of fertilizer was considered expensive by 83.3% of the population, not expensive by 12% and undecided by 4.7%. The farmers perceived as expensive (17.3%), not expensive (45.3%) and, undecided (37.4%) the planting of yam minisett. Soybean planting was viewed as expensive by 16% of the farmers, not expensive by 53.3% and, undecided by 30.7%. The use of chemicals was said to be expensive, not expensive, and undecided by 86%, 3.3% and 10.7% of the farmers respectively. Respondents asserted that planting of hybrid cocoa and copism were expensive (30%), not expensive (45.3%) and, undecided (27.7%). While 76.7% of the farmers were undecided on the adoption of alley farming, 22.7% and 0.7% of the population considered it expensive and not expensive respectively. Also, 64%, 14%, and 22% of the farmers said improved housing of sheep and goat was expensive, not expensive and undecided respectively.

Rearing of rabbits was said to be expensive (58.7%), not expensive (19.3%) and, undecided (22%) by the farmers. Homestead fish production was accorded expensive by

77.3%, not expensive by 3.3% and undecided by 19.3% of the farmers. Lastly, mechanization was said to be expensive, not expensive and undecided by 91.3%, 2.7% and 6% of the respondents respectively.

The analysis then shows that most farmers acknowledged that, of all the innovations introduced, fertilizer, chemicals, improved feeding and housing of sheep and goat, rearing of rabbits, homestead fish production and mechanization were rather expensive. It could then be inferred that the costs of these innovations may have a direct influence or relationship with their discontinuances by the farmers.

TABLE 4.20

Distribution of innovations by cost-profitability ratio.

INNOVATION	EXPENSIVE N	%	NOT EXPENSIVE N	%	UNDECIDED N	%
Planting of improve maize	12	8.0	129	86.0	9	6.0
Planting of improved cassava cuttings	4	2.7	139	92.7	7	4.7
Planting of improved rice	22	14.7	116	77.3	12	8.0
Planting of cowpea	34	22.7	99	66.0	17	11.3
Planting of maize (sole)	14	9.3	115	76.7	21	14.0
Correct spacing (O.P.P)	17	11.3	105	70.0	28	18.7
Application of fertilizer	125	83.3	18	12.0	7	4.7
Planting of yam minisett	26	17.3	68	45.3	56	37.4
Planting of soybean	24	16.0	80	53.3	46	30.7
Use of chemicals (herbicides, pesticides, fungicides)	129	86.0	5	3.3	16	10.7
Planting of hybrid cocoa	45	30.0	68	45.3	37	24.7
Cocoa rehabilitation (copism)	45	30.0	68	45.3	37	24.7
Alley farming	34	22.7	1	0.7	115	76.7
Improved feeding/housing of sheep and goat	96	64.0	21	14.0	33	22.0
Rearing of rabbit	88	58.7	29	19.3	33	22.0
Homestead fish production	116	77.3	5	3.3	29	19.3
Mechanization	137	91.3	4	2.7	9	6.0

N = 150

4.9.9.0 Availability

Table 4.21 shows the distribution of innovations by the extent of their availability in terms of production inputs. Data indicate that 97.3% of the farmers considered the planting of improved maize as available while 2.7% said it was less available. Planting of improved cassava was considered available by all the farmers (100%). Planting of improved rice was said to be available (94.7%) and less available (5.3%) by the farmers. Also, 80%, 17.3% and 2.7% of the farmers submitted that planting of cowpea was available, less available and not available respectively. Planting of maize (sole) was acknowledged available, less available and not available by 81.3%, 16% and 2.7% of the respondents respectively. Correct spacing (O.P.P.) was said be available by 80% of the farmers, less available by 17.3% and 2.7% of the respondents was undecided. Fertilizer application was considered available, less available, and not available by 40%, 57.3% and 2.7% of the farmers respectively. Planting of yam minisett was said to be available by 26.7%, less available by 64.7% and not available by 8.7% of the farmers population. The respondents indicated that the planting of soybeans was available (64%) less available (35.3%) and not available (0.7%). Use of chemicals was said to be available, less available and not available by 32.7%, 63.3% and 4% of the respondents respectively. Planting of improved cocoa was acknowledged available (80%) and less available (20%) by the respondents. Cocoa rehabilitation (copism) was believed to be available and less available by 70% and 27.3% of the farmers respectively while 2.7% of the population said the innovation was not available. Whereas 52.7% of the respondents said alley farming was not available, 18.7% and 28.7% said the innovation was available and less available respectively. Also, 35.3%, 60.7% and 4% of the respondents indicated that improved feeding and housing of sheep and goats was available, less available and not available respectively. The rearing of rabbit was

perceived to be. available (29.3%), less available (64.7%) and, not available by the farmers. Homestead fish production was said to be available, less available and not available by 16.7%, 59.3% and 24% of the farmers respectively. Whereas 14% of the farmers acknowledged that mechanization was not available, 24.7% and 61.3% consented that the innovation was available and less available respectively.

The analysis shows that most farmers indicated that improved maize, improved cassava cutting, improved rice, improved cowpea, maize sole, O.P.P., planting of soybean, hybrid cocoa and copism were all available for use whereas all other innovations introduced were either seen as less available and not available. Consequently, all the innovations which are perceived as less or not available have more chances of being discontinued by farmers when situations warrant such decision.

TABLE 4.21

Distribution of innovations by availability.

INNOVATION	AVAILABLE N	%	LESS AVAILABLE N	%	NOT AVAILABLE N	%
Planting of improved maize	146	97.3	4	2.7	-	-
Planting of improved cassava cuttings	150	100.0	-	-	-	-
Planting of improved rice	142	94.7	8	5.3	-	-
Planting of cowpea	120	80.0	26	17.3	4	2.7
Planting of maize (sole)	122	81.3	24	16.0	4	2.7
Correct spacing (O.P.P)	120	80.0	26	17.3	4	2.7
Application of fertilizer	60	40.0	86	57.3	4	2.7
Planting of yam minisett	40	26.7	97	64.7	13	8.7
Planting of soybean	96	64.0	53	35.3	1	0.7
Use of chemicals (herbicides, pesticides, fungicides)	49	32.7	95	63.3	6	4.0
Planting of hybrid cocoa	120	80.0	30	20.0	-	-
Cocoa rehabilitation (copism)	105	70.0	41	27.3	4	2.7
Alley farming	28	18.7	43	28.7	79	52.7
Improved feeding/housing of sheep and goat	53	35.3	91	60.7	6	4.0
Rearing of rabbits	44	29.3	97	64.7	9	6.0
Homestead fish production	25	16.7	89	59.3	36	24.0
Mechanization	37	24.7	92	61.3	21	14.0

4.9.9.1 Adoption_and_discontinuance

Table 4.22 shows the distribution of innovations by adoption and discontinuances made. It is shown from the data that 96.7% of the total population adopted the planting of improved maize while 3.3% did not adopt at all. However, all (100%) the farmers that adopted the innovation continued with the use. Majority (96.7%) of the farmers adopted the planting of cassava cuttings, 3.3% did not adopt the innovation, 96.7% of the adopters continued with the innovation, while 7.6% discontinued with its use. Planting of improved rice was adopted by 80.7% of the farmers, 19.3% did not adopt the innovation, 41.3% of the adopters later discontinued while 58.7% continued with the use of the innovation. About 63.0% of the total respondents adopted the planting of cowpea, 36.7% did not adopt the innovation, 64.2% of the adopters later discontinued while 35.8% continued with its use. Planting of maize as a sole crop, was adopted by 60.7% of the total population, while 39.3% did not adopt the innovation. About 59.3% of the adopters later discontinued while 40.7% of the adopters continued with the use of the innovation. With the use of correct spacing (O.P.P.), 72.7% of the farmers were adopters, while 27.3% were non-adopters. But then, 11% of the adopters later discontinued while 89% of the adopters continued with the use of innovation. 83.3% of the population adopted the use of fertilizer, 16.7% did not adopt with subsequent cases of discontinuance and continued adoption by 32.8% and 67.2% of the adopters respectively. All (100%) the farmers never adopted the planting of yam minisett and alley farming. About 53% of the total population under study adopted the planting of soybean, 47.3% never adopted it, 78.5% of the adopters discontinued with the innovation while 21.5% kept on using it. About 81% of the total respondent population adopted the use of chemicals, while 19.3% did not adopt the innovation. Whereas 80.2% of the adopters continued with its use, 19.8% discontinued with the use of the innovation. The planting of

cocoa hybrid was adopted by 68.7% of the total population, and 31.3% did not adopt the innovation. About 20.0% of the adopters later discontinued, while 79.6% of the adopters continued with the use of the innovation. About 57.3% of the population adopted copism, 42.7% did not adopt the innovation, 30.2% discontinued and, 69.8% of the adopters continued with its use. Also 36% of the total respondent adopted improved feeding and housing of sheep and goat. Whereas 64% of the farmers did not adopt the innovation, 70.4% of the adopters continued with its use while 29.6% discontinued with the use of the innovation. Of the total respondents, 22.7% adopted the rearing of rabbits, 77.3% never adopted the innovation, 58.8% of the adopters later discontinued, while 41.2% of the adopters continued using the innovation. Homestead fish production was adopted by just 3.3% of the total population while 96.7% never adopted it. All (100%) of the adopters of this innovation continued with its use.

As for mechanization, 38% of the total population had its adoption while 62% never adopted it. Whereas 68.4% of the adopters population continued with the use of this innovation, 31.6% later disontinued with it. The analysis shows that all the innovations were adopted with the exception of the planting of yam minisetts and alley farming. This might not be unconnected with the intricacies involved in adopting the afore-mentioned innovations.

Also, discontinuances were recorded mostly with soybean (78.5%), improved cowpea (64.2%); maize sole (59.3%); rabbit rearing (58.8%); improved rice (41.3%).

In all of the innovations under study, there were cases of a total number of 1,370 adoption and 416 discontinuances. Continued adoption and discontinuance cases therefore, were 69.9% and 30.4% respectively. This shows a relatively low level of discontinuance among farmers studied.

Table 4.22

Distribution of innovations by adoption and discontinuance.

INNOVATION	ADOPTED N	%	NOT ADOPTED N	%	DISCONTINUED N	%	CONTINUED N	%
Planting of improved maize	145	96.7	5	3.3	-	-	145	100.0
Planting of improved cassava cuttings	145	96.7	5	3.3	11	7.6	134	92.4
Planting of improved rice	121	80.7	29	19.3	50	41.3	71	58.7
Planting of cowpea	95	63.3	55	36.7	61	64.2	34	35.8
Planting of maize (sole)	91	60.7	59	39.3	54	59.3	37	40.7
Correct spacing (O.P.P.)	109	72.7	41	27.3	12	11.0	97	89.0
Application of fertilizer	125	83.3	25	16.7	41	32.8	84	67.2
Planting of yam minisett	-	-	150	100.0	-	-	-	-
Planting of soybean	79	52.7	71	47.3	62	78.5	17	21.5
Use of chemicals (herbicides, pesticides, fungicides)	121	80.7	29	19.3	24	19.8	97	80.2
Planting of hybrid cocoa	103	68.7	47	31.3	21	20.4	82	79.6
Cocoa rehabilitation (copism)	86	57.3	64	42.7	26	30.2	60	69.8
Alley farming	-	-	150	100.0	-	-	-	-
Improved feeding/housing of sheep and goat	54	36.0	96	64.0	16	29.6	38	70.4
Rearing of rabbits	34	22.7	116	77.3	20	58.8	14	41.2
Homestead fish production	5	3.3	145	96.7	-	-	5	100.0
Mechanization	57	38.0	93	62.0	18	31.6	39	68.4

N = 150

9.9.2 Causes of Discontinuance

Table 4.23 shows the distribution of innovations by those factors responsible for their discontinuance by farmers. Data reveal that all (100%) the farmers that discontinued with the use of cassava cuttings said the genetic trait and taste of the product were the reasons for discontinuance. Hence, farmers indicated that the harvesting of the cassava was too time specific as "tubers get rottened if they are harvested late". Also, some held the opinion that 'amala' made from the cassava flour does not hold together well when kept for too long; "it becomes watery quickly" was the assertion. Also, all (100%) of the farmers that discontinued with the use of improved rice acknowledged that the cause of discontinuance was natural hazard or circumstances like pest (bird and rodent invasion and drought). About 44.3% of the affected respondents discontinued with the planting of cowpea as a result of lack of fund, 27.9% discontinued due to lack of production inputs (like seeds and insecticides), 1.6% said there was no technical assistance, 4.9% indicated that discontinuance was due to the decision of family members, 8.2% acknowledged natural hazards (like pest invasion) as the cause of discontinuance. About 13.1% of the population believed that planting of cowpea was a risky venture. Planting of maize as a sole crop was discontinued by 48.1% of the farmers because of family decision while 51.9% believed it was less economical, (as limited land, according to some of the farmers, was not put to optimum use). All (100%) of the farmers that discontinued with the use of correct spacing said decision of family members was the cause of their discontinuance. This may be due to lack of support given to them (farmers) by their family members who constitute the farm labour. While 70.7% of the farmers acknowledged lack of fund as the cause of discontinuance with the use of fertilizer, 29.3% ascribed discontinuance to lack of inputs, as fertilizer could not be easily procured in time. About 6.5% of the affected farmers population adduced

discontinuance with the planting of soybean to lack of inputs, 14.5% discontinued due to family decision, 14.5% discontinued due to natural hazards or circumstances (problems of pests), while 64.5% of the respondents said there was no market for the product. Majority (83.3%) of the affected farmers attributed discontinuance with the use of chemicals to lack of fund and, 16.7% attributed it to lack of inputs respectively. All the farmers who discontinued with the use of improved cocoa (hybrid) said it was because of natural hazard (like fire outbreak) and circumstance (like senility). Copism was discontinued with by 11.5%, 3.8% and 84.6% of the affected farmers because of lack of technical assistance, family decision and natural circumstances (senility) and hazards respectively. Also, 68.8% and 31.3% of the respondents said they discontinued with the use of improved feeding and housing for sheep and goat due to lack of fund and lack of inputs respectively. The rearing of rabbit was discontinued by 65% and 5% respectively due to lack of fund and input.

Whereas 25% of the respondents believed the rearing of rabbit "demands too much attention", 5% discontinued due to the decision of family members. About 88.9% and 5.6% of those who discontinued mechanization did so due to lack of fund and inputs respectively. Also, 5.6% of the population adduced discontinuance with the decision of family members.

Table 4.23

Distribution of innovations by the causes of discontinuances.

Innovations	Lack of fund N %	Lack of inputs N %	No technical Assistance N %	Family Decision N %	Natural circumstances and Hazards N %	No market N %	Risky N %	Less Economical N %	Demands too much attention N %	Genetic trait and Taste N %
Planting of improved cassava cuttings	- -	- -	- -	- -	- -	- -	- -	- -	- -	11 100.0
Planting of improved rice	- -	- -	- -	- -	50 100.0	- -	- -	- -	- -	- -
Planting of cowpea	27 44.3	17 27.9	1 1.6	3 4.9	5 8.2	- -	8 13.1	- -	- -	- -
Planting of maize (sole)	- -	- -	- -	26 48.1	- -	- -	- -	28 51.9	- -	- -
Correct Spacing (O.P.P)	- -	- -	- -	12 100.0	- -	- -	- -	- -	- -	- -
Application of fertilizer	29 70.7	12 29.3	- -	- -	- -	- -	- -	- -	- -	- -
Planting of soybean	- -	4 6.5	- -	9 14.5	9 14.5	40 64.5	- -	- -	- -	- -
Use of chemicals (herbicides, pesticides and fungicides)	20 83.3	4 16.7	- -	- -	- -	- -	- -	- -	- -	- -
Planting of improved cocoa	- -	- -	- -	- -	21 100.0	- -	- -	- -	- -	- -
Cocoa rehabilitation (copism)	- -	- -	3 11.5	1 3.8	22 84.6	- -	- -	- -	- -	- -
Improved feeding/housing of sheep and goat	11 68.8	5 31.3	- -	- -	- -	- -	- -	- -	- -	- -
Rearing of rabbits	13 65.0	1 5.0	- -	1 5.0	- -	- -	- -	- -	5 25.0	- -
Mechanization	16 88.9	1 5.6	- -	1 5.6	- -	- -	- -	- -	- -	- -

N = 150

IV THE NATURE OF DISCONTINUANCES

4.9.9.3 Nature of Discontinuances

Table 4.24 shows the distribution of innovations by the natures of discontinuances made. The nature of discontinuances found in the study are immediate, gradual and rapid discontinuances.

Data reveal that all (100%) of the those who discontinued with the use of cassava cuttings had gradual discontinuance. About 18%, 72% and 10% of those who discontinued with the planting of improved rice had immediate, gradual and rapid discontinuances respectively. Also 8.2%, 73.8% and 18% of the farmers having discontinuance cases with the planting of cowpea had immediate, gradual and rapid discontinuances respectively. Immediate (13%), gradual (72.2%), rapid (14.8%) discontinuances were recorded against farmers who discontinued with the use of maize sole. Farmers who discontinued with the use of correct spacing had 8.3%, 66.7% and 25% of immediate, gradual and rapid discontinuances respectively. Among those who discontinued with the application of fertilizer, 9.8% and 90.2% had immediate and gradual discontinuances respectively.

Immediate (35.5%), gradual (53.2%) and rapid (11.3%) discontinuances were recorded against farmers who discontinued with the planting of soybean. Also, 12.5%, 83.3% and 4.2% of immediate, gradual and rapid discontinuances were respectively recorded against those who disconuinued with the use of chemicals. Discontinuances made by farmers with the planting of improved cocoa seedlings were in the proportion of 61.9% of immediate discontinuance, 4.8% of gradual discontinuance and 33.3% of rapid discontinuance. 34.6% of immediate discontinuance, 15.4% of gradual discontinuance and 50% of rapid

discontinuance were recorded against farmers that discontinued with copism. Improved feeding and housing of sheep and goat was discontinued with by farmers in the proportion of 31.3% (immediate), 62.5% (gradual) and 6.3% (rapid). About 45%, 50% and 5% of farmers that had discontinuance with the rearing of rabbit had immediate, gradual and rapid discontinuances respectively. 44.4% of immediate discontinuance, 44.4% of gradual discontinuance and 11.1% of rapid discontinuance were recorded against farmers who had discontinuances with mechanization.

TABLE 4.24

Distribution of innovations by the nature of discontinuance.

INNOVATIONS	IMMEDIATE DISCONTINUANCE N	%	GRADUAL DISCONTINUANCE N	%	RAPID DISCONTINUANCE N	%
Planting of improved cassava cuttings	-	-	11	100.0	-	-
Planting of improved rice	9	18.0	36	72.0	5	10.0
Planting of cowpea	5	8.2	45	73.8	11	18.0
Planting of maize (sole)	7	13.0	39	72.2	8	14.8
Correct spacing (O.P.P)	1	8.3	8	66.7	3	25.0
Application of fertilizer	4	9.8	37	90.2	-	-
Planting of soybean	22	35.5	33	53.2	7	11.3
Use of chemicals (herbicides, pesticides, fungicides)	3	12.5	20	83.3	1	4.2
Planting of impoved cocoa	13	61.9	1	4.8	7	33.3
Cocoa rehabilitation (copism)	9	34.6	4	15.4	13	50.0
Improved feeding housing of sheep and goat	5	31.3	10	62.5	1	6.3
Rearing of rabbits	9	45.0	10	50.0	1	5.0
Mechanization	8	44.4	8	44.4	2	11.1

N = 150

4.9.9.4 Causes of Immediate Discontinuances

Table 4.25 shows the distribution of immediate discontinuances by their causes. Data show that 4.2% of the causes for immediate discontinuances was inavailability of inputs, 3.2% of the causes was illness, 16.8% was shortage or non-availability of money, 18.9% was lack of adequate marketing channels, 8.4% was the cost of some of the innovations and 7.4% was ascribed to the time consuming nature of the innovation(s). Also, natural hazards (like fire outbreak, flood and pest invasion etc) accounted for 26.3% of the causes of immediate discontinuances. 3.2% of the causes was that farmers perceived innovation(s) as not economical, 8.4% was old age (senility) and the nature of the innovation, which demanded too much attention accounted for 3.2% of the causes. In all, there were 95 cases of immediate discontinuance.

TABLE 4.25

Distribution of immediate discontinuances by their causes.

CAUSE OF IMMEDIATE DISCONTINUANCE	N	%
Inputs were no longer available	4	4.2
Lack of good health (illness)	3	3.2
Money was no longer available	16	16.8
Lack of adequate marketing channels	18	18.9
Cost of the innovation	8	8.4
It is time consuming	7	7.4
Natural hazards (fire outbreak, flood, pests e.t.c.)	25	26.3
It is not economical	3	3.2
Old age (senility)	8	8.4
The innovation demands too much attention	3	3.2
TOTAL	95	100.0

N = 95

4.9.9.5 Causes of Gradual Discontinuances

Table 4.26 shows the distribution of gradual discontinuances by their causes. Data show that 1.9% of the causes was waning strength due to old age, 15.3% was that, availability of production inputs were becoming inadequate. Attendance of farmers to other pressing family issues accounted for 4.6% of the causes; No market for produce accounted for 8.4% of the causes of gradual discontinuance; uncertainties in weather condition (over the years) also accounted for 26% of the causes; 1.5% of the causes of gradual discontinuance was that the needed technical assistance was not obtained. Also, 4.2% of the causes was that the tastes of some of the innovations were not preferred while 38.2% of such causes was the lack of fund. In all, there were 262 cases of gradual discontinuance

TABLE 4.26

Distribution of gradual discontinuance by their causes

CAUSE OF GRADUAL DISCONTINUANCE	N	%
Waning strength due to old age	5	1.9
Availability of inputs is becoming inadequate	40	15.3
Attendance to other pressing family issues	12	4.6
No market for produce	22	8.4
Uncertainties in weather condition	68	26.0
The needed technical assistance is not obtained	4	1.5
The taste of the innovations is not preferred	11	4.2
Lack of fund	100	38.2
TOTAL	262	100.1

N = 262

Note: Some farmers gave more than one cause for each of the discontinuances they made.

4.9.9.6 Causes of Rapid Discontinuances

Table 4.27 shows the distribution of rapid discontinuances by their casual factors. Data show that 33.9% of the causes of rapid discontinuance was ascribed to depreciating health condition, 39% was ascribed to losses through natural hazards (like fire outbreak, flood, pest invasion etc), 5.1% of the causes in this category was that innovation(s) was or were less advantageous to other competing enterprises. Also, 20.3% of the causes was that the innovation(s) did not maximize the use of scarce resources (e.g. land). In fact, the planting of maize as sole was unwelcomed by some farmers as it never made them put land to optimum use.

The time-specificity of the practice of some innovations accounted for 1.7% of the causes of rapid discontinuances. In all, there were 59 cases of rapid discontinuance.

TABLE 4.27

Distribution of rapid discontinuances by their causes.

CAUSES OF RAPID DISCONTINUANCES	N	%
Depreciating health condition	20	33.9
Loss due to the natural hazards (fire outbreak, flood, pests etc.)	23	39.0
The innovation is less advantageous to other competing enterprises	3	5.1
It does not maximize the use of resources (e.g. land)	12	20.3
Cultural operations are too time-specific	1	1.7
TOTAL	59	100.0

N = 59

4.9.9.7 Farmer's Level of Discontinuance with the Use of Agricultural Innovations

Table 4.28 shows the mean score for farmers on the number of innovations they discontinued with as 2.68 with a standard deviation of 0.39. Data indicate that 55.3% of the farmers had discontinuances between 0 - 2 (low level of discontinuance), 33.3% had between 3-5 discontinuances (high level of discontinuance) and 11.3% had discontinuance between the range of 6-8 (very high level of discontinuance).

It could then be inferred that majority (55.3%) of the farmers in Ekiti North area of Ondo State had very low level of discontinuance, with some recording no discontinuance.

TABLE 4.28

Distribution of farmers according to their level of discontinuance with agricultural innovation.

NUMBER OF INNOVATION DISCONTINUED WITH	FARMERS	
	N	%
Low (0-2)	83	55.3
High (3-5)	50	33.3
Very High (6-8)	17	11.3
TOTAL	150	99.9

N = 150

Mean = 2.68

Standard Deviation: 0.39

V TESTING OF HYPOTHESES

Information on hypotheses testing are given in this section.

4.9.9.8 Hypotheses One and Two

Hypothesis 1: There is no significant relationship between personal/socio-economic characteristics and discontinuance with the adoption of innovations among farmers.

The selected personal and socio-economic characteristics are: Age, Sex, Literacy, level of education, family size, mass media exposure, contacts with extension agents, cosmopoliteness, risk aversion, fatalism, economic constraints, farm size and the decision of family members and association membership and participation.

Hypothesis 2: There is no significant relationship between the characteristics of innovation and discontinuance.

These selected characteristics are: Relative advantage, compatibility, cost-profitability ratio and availability.

TABLE 4.29

Correlation analysis showing linear relationship between farmer's personal and socio-economic characteristics, innovation characteristics and the level of discontinuance.

CHARACTERISTICS (X-variables)	Correlation Coefficient (r)	Co-efficient of determination (r^2)
Age	0.0536	0.0029
Sex	0.1875*	0.0352
Family size	-0.1174	0.0138
Association(s) membership and participation	-0.0150	0.0003
Literacy	-0.0172	0.0003
Level of education	-0.0686	0.0047
Mass media exposure	-0.0729	0.0053
Contacts with extension agents	-0.0670	0.0045
Cosmopoliteness	-0.1889*	0.0357
Risk aversion	0.1431	0.0205
Fatalism	0.3405*	0.1159
Economic constraints	0.1030	0.0106
Farm size	-0.0187	0.0003
The decision of family members	0.0482	0.0023
Relative advantage of the innovation(s)	-0.2661*	0.0708
Compatibility of the innovation(s)	-0.2265*	0.0513
Cost-profitability ratio of the innovation(s)	0.2050*	0.0420
Availability of the innovation	-0.0340	0.0012

Level of significance = 0.05

Critical value of 'r' at (0.05)(148) = 0.1603

*Test values of 'r' are significant at 0.05 level

Data in table 4.29 show a positive and significant relationship (correlation) between farmer's level of discontinuance and sex (r = 0.1875), fatalism (r = 0.3405) and cost-profitability ratio of the innovation(s) (r = 0.2050). This could be explained thus:

1. Women farmers who are more tenderly oriented are more likely to discontinue faster with the use of innovations if besieged with too much problems, which on the other hand, male farmers (who are more physically strong and emotionally determined) could still manage effectively;
2. the more fatalistic the farmer is, the more the incidents of discontinuances embarked upon and;
3. the more expensive the practice of the innovation(s) becomes, the more the discontinuances recorded by farmers.

Conversely, there is a negative but significant correlation between farmer's level of discontinuance and cosmopoliteness (r = -0.1889), relative advantage of the innovation(s) (r=-0.2661) and compatibility of the innovation(s) (r = -0.2265). This means that:

1. the more cosmopolite the farmer is, the less the number of discontinuances he embarks on. A farmer who has inclinations and orientation towards external cultures has broad-based views on agricultural activities. This enables him not to hold a parochial view about a phenomenon (be it positive or negative) which others who are less cosmopolite considered exclusive to their immediate communities. His experience and exposure discourage irrational decision-making on discontinuance;
2. the more the innovation is supersedent to existing practices, the less the occurrence of discontinuances. A study in Wisconsin (U.S) showed that some of the

discontinuances recorded were caused by the supersedence of a superior innovation replacing a previously adopted idea (Roger, 1962) and;

3. the more compatible the innovation(s) is/are to the community's and farmer's tastes, the less the frequency of discontinuances. An innovation which runs contrary to the values and norms of a social system is either prone to non-adoption or discontinuance. However, there is a negative and non-significant correlation between the farmer's level of discontinuance and family size (r = -0.1174), association(s) membership and participation (r = -0.0150), literacy (r = -0.0172), level of education (r = -0.686), mass media exposure (r = -0.0729), contacts with extension agents (r = -0.0670), farm size (r = -0.0187) and availability of the innovation(s) (r = -0.0340).

The negative correlation between the level of education and discontinuance is in support of Rogers (1962) who said that less education might be expected to cause discontinuances.

A positive and non-significant relationship exists between farmer's level of discontinuance and age (r=0.0536), risk-aversion (r = 0.1431), economic constraints (r = 0.1030) and family members' decision (r = 0.0482). The positive correlation between economic constraints and discontinuance supports the finding of Rogers (1962) who reported that lack of resources may either prevent adoption of ideas or cause discontinuances.

The co-efficient of determination (r^2) in table 4.29 shows the percentage variation in Y-variable (farmer's level of discontinuance as explained by each of the

X-variables in the study. About 3.5%, 3.6%, 11.6% and 7.1% variation in discontinuance (Y) was attributed to sex, cosmopoliteness, fatalism and innovation's relative advantage, respectively. Other variables that had relatively substantial contributions to the variation in discontinuance (Y) are compatibility of the innovation(s) (5.1%) and cost-profitability of the innovation(s) (4.2%).

The percentage contributions of age (0.29%), family size (1.38%), association membership and participation (0.03%), literacy (0.03%), level of education (0.47%), mass media exposure (0.53%), contacts with extension agents (0.45%), risk aversion (2.05%), economic constraints (1.06%), farm size (0.03%), the decision of family members (0.23%) and availability of the innovation(s) (0.12%) were extremely low. The low values of percentage contributions to variation in discontinuance (Y-variable) engendered the non-significant correlation between discontinuance and these variables.

TABLE 4.30

Multiple regression analysis showing the causal linear relationship between farmer's selected personal and socio-economic characteristics, innovation characteristics and, the level of discontinuance.

CHARACTERISTICS (X-variable)	Regression Coefficient (b)	T-value for H_o
Age	0.00806	0.380
Sex	1.77801	2.986*
Family size	-0.11278	-2.211*
Association(s) membership & participation	-0.09093	-1.589
Literacy	-0.08193	-0.337
Level of education	-0.02748	-0.613
Mass media exposure	-0.09564	-0.547
Contacts with extension agents	-0.22306	-0.008
Cosmopoliteness	-0.03293	-0.533
Risk aversion	0.05748	0.952
Fatalism	0.13346	3.254*
Economic constraints	0.06501	0.429
farm size	-0.00128	-0.125
The decision of family members	-0.24331	-0.672
Relative advantage of the innovation(s)	-0.01857	-0.950
Compatibility of the innovation(s)	-0.04340	-1.370
Cost-profitability of innovation(s)	0.00075	0.025
Availability of the innovation(s)	-0.08817	-2.255*

Critical value of 't' at (0.05)(150) = 1.976

150 d.f was chosen since 148 d.f could not be found on the table
*Test values of 't' are significant at 0.05 level
R-square (R^2) = 0.2777, Adjusted or corrected R-square = 0.1784

R-square gave the total percentage variations in Y-variable (discontinuance level) as could be ascribed to the joint contribution of the X-variables which showed significant relationship with Y. Hence, data in table 4.30 show that sex (t = 2.986), family size (t =-2.211), fatalism (t = 3.254) and availability of the innovation(s) (t = -2.255) all of which had significant relationship with the Y-variable explained 27.8% of the variations in the farmer's level of discontinuance (Y). The low value of R-square (0.2777) could be as a result of multicollinearity relationship between the independent variables, hence, lessening their joint contributions to the variation in Y-variable (farmer's discontinuance level) (Richard, 1988).

The positive relationship existing between sex and discontinuance may be explained on the ground of courage and determination. The more courageous and determined (which is more of male in many observation cases) the farmer is, the less the incident of discontinuance. This is because determination, courage and effort would overcome some of the threatening problems which could engender discontinuance. The positive relationship between fatalism and discontinuance entrenches the fact that a fatalistic farmer is more prone to discontinuance than a non-fatalistic farmer. The more fatalistic a farmer is, the more the discontinuances he records since he would always resign to fate as a way of overcoming his block through rationalization. As there is a negative relationship between family size and discontinuance, the larger the family size (where such constitutes the farm labour: Alao, 1980), the less the occurrence of discontinuance. This is because the farmer has helping hands in carrying out cultural and other farm activities (where almost all members are resident in the same locality).

Also, the more available the resources for practising an innovation, the less the occurrence of discontinuance.

Age (t = 0.380), risk aversion (t = 0.952), economic constraints (t = 0.429) and cost-profitability ratio of the innovation(s) (t = 0.025) had positive but non-significant relationship with the farmer's level of discontinuance. This shows that:

1. as the farmer's age increases, discontinuance levels also increase.
2. as the farmer experiences more constraints in the use of resources (like land, labour and capital), the more he discontinues with the adopted innovation;
3. as the farmer becomes more risk-aversive, the more he discontinues with the use of innovations and;
4. as the practice(s) of innovation(s) become(s) expensive, discontinuance(s) increase(s).

Conversely, regression co-efficient for farmer's family size (b = -0.11278), association(s) membership and participation (b = -0.09093), literacy (b = -0.08193), level of education (b = -0.02748), mass media exposure (b =-0.09564), contacts with extension agents (b =-0.22306), cosmopoliteness (b =-0.03293), farm size (b =-0.00128), the decision of family members (b=-0.24331), relative advantage of the innovation(s) (b =-0.01857) and compatibility of the innovation(s) (b =-0.04340) were negative. These results showed that;

1. the larger the family size is, the less the discontinuance.
2. the more the farmer is able to read/or write, the less the incident of discontinuances. It is inferred that a literate farmer utilizes more information as he reads (in addition

to hearing) about new dimensions of farming practices;

3. the higher the level of education, the less the occurrence of discontinuances embarked upon by the farmer. This is because education tend to change the farmer's parochial views and rigid traditional values to a more 'rational' reasoning;

4. the more exposed the farmer is to the use of mass media like the wireless, television, newspapers e.t.c., the less he discontinues with the use of innovations(s) as he obtains more guides and covert assistance in areas which seem intricate in the innovation he has adopted;

5. the more frequent the farmer comes in contact with extension agents, the less the occurrence of his discontinuances as he gets advice and more encouragement from these change agents from time to time.

6. the more the farmer has orientation to external social systems (cosmopoliteness), the more he broadens his scope of knowledge and experience in farming operations and hence, the less the incident of discontinuance;

7. the larger the farm size, the less the number of discontinuances recorded by the farmer since he has more land to continue with the practice of adopted innovations;

8. the more favourably disposed the majority of the family members are to innovation(s), the less the occurrence of discontinuance. This is because they mainly constitute the farm labour (Alao, 1980) and in most cases, land is jointly owned by the family members. An attempt by any individual farmer to act contrary to the wishes and aspirations of other members could gender conflicts, hence discontinuance;

9. the more advantageous the innovation is to the existing practices, the less the incidents of discontinuances and;

10. the more compatible the innovation(s) is/are to the farmer's and community's tastes and values, the less would be the frequency of discontinuances made by the farmer.

CHAPTER FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 SUMMARY

Statement of Research Problem

The sole objective of all government agriculturally biased agencies is to bring about an improvement in agricultural production. This they effect mostly through farmers who are on the farms. Efforts in this regards in Nigeria seem fruitless as food shortage is becoming more apparent on daily basis.

Despite all the improved technologies being pushed into the farmers' communities by extension agents, farmers seem not to be responding to the waves of change. Even where farmers adopt innovations, there are instances of discontinuances with the continued use of agricultural innovations. The concern of this study then is the identification of those factors engendering discontinuance cases among farmers with main focus on the following questions:

i. Are innovations introduced to farmers compatible, advantageous, cheap and available?

ii. Can the enabling inputs be procured with ease?

iii. Are considerations given to the values and ideals of other members of the family of the farmer?

Objectives of the Study

The main objective was to identify the factors associated with the problems of discontinuance after the adoption of innovations by farmers in Ekiti North of Ondo State. The specific objectives were;

i. To identify the agricultural innovations introduced to farmers in the study area.

ii. To identify those innovations which have been adopted and later discontinued by farmers.

iii. To identify those factors which are responsible for the discontinuance of the use of innovations among farmers.

iv. To analyse the characteristics of farmers who discontinued with their adopted innovations.

Hypotheses of the Study

To test the relationships between the variables in this study, the following null hypotheses were formulated and tested:

Hypothesis 1: There is no significant relationship between personal/socio-economic characteristics and discontinuance with the adoption of innovations among farmers. These personal and socio-economic characteristics are:

(a) Age, (b) Sex (c), literacy (d) level of education, (e) family size (f) mass media exposure (g) contacts with extension agents (h) cosmopoliteness (i) risk-aversion (j) fatalism (k) economic constraints (l) farm size (m) the decision of family members and (n) association membership and participation.

Hypothesis 2: There is no significant relationship between the characteristics of innovation and discontinuance. These selected characteristics are:

(a) Relative advantage;

(b) Compatibility;

(c) Cost-profitability and;

(d) Availability

Contribution to Knowledge

This research study was designed to identify those problems and factors associated with discontinuance which most studies on diffusion and adoption of innovations have not given thorough consideration. The nature of discontinuance which in the past remained unstudied was investigated in this study.

The study threw light on how research and extension agencies could overcome besieging problems leading to discontinuances. It would also serve as a data bank on problems of discontinuance (with innovations) for researchers who want to undertake study in this area.

Methodology of Study

The study area was Ekiti North of Ondo State comprising of two (rural) local government - Ikole and Oye local government areas. Five communities - Oye, Ikole, Ayede, Ayedun and Irele - were randomly sampled. In each of these communities, 30 farmers were also selected by simple random sampling. The total number of One hundred and fifty (150) farmers were studied. Interview schedule consisting of open and close-ended questions was used to obtain information from the farmers. This instrument was pre-tested after critical evaluation by experts in rural sociology and programme planning and evaluation in the Department of Agricultural Extension and Rural Sociology, Obafemi Awolowo University. The pretesting was done in Ekiti North area of Ondo State on ten farmers. The interview

was conducted between the months of July and August, 1994 with the assistance of a field enumerator.

Analysis of Data

All the one hundred and fifty interview schedules were analysed for the study.

Descriptive statistical techniques such as frequency counts, percentages, mean, standard deviation and weighted mean score were used in analysing the data collected. Correlation and regression analyses were used in determining the relationship between the independent variables and the dependent variable Y (discontinuance).

5.2 SUMMARY OF FINDINGS

Age

Majority (84%) of the farmers were between 35 and 64 years of age. Just 3.3% of the farmers aged between 25 and 34 years while those above 64 years accounted for 12.7% of the population.

Sex

About 91.0% of the farmers were male while 8.7% were female.

Marital Status

About 3.0% of the farmers were single, 88% were married, 4.7% were widowed/widowered, 3.3% were divorced and just 0.7% accounted for separated.

Family Size

Analysis showed that 24% of the farmers had a family size of between 5-6 members. Farmers having between 1-2, 3-4, 7-8 and 9-10 family members accounted for 3.3%, 8.7%, 19.3% and 16% respectively. 6.6%, 8.7%, 8.7% and 4.7% of the farmers had between 11-

12, 13-14, 15-16 and above 17 family members respectively.

Association(s) membership and participation

Majority of the farmers belonged to farmers' cooperative (57.4%), religious organizations (45.1%) and village council (20.6%).

Literacy

Majority (58%) of the farmers were able to read and write, 38% were neither able to read nor write while 4% of the farmers were able to read only.

Level of education

The study showed that 42.7% of the farmers had no formal schooling while 57.3% had formal education. Majority (51.2%) of the farmers who had schooling spent between 11 and 20 years in school while 48.9% spent between 1 and 10 years in school.

Mass media exposure

Most (91.3%) of the farmers had access to radio, 55.3% used television, and 28% read magazines and bulletins. Also, 17.3% and 16.7% of the farmers read newspapers and leaflets respectively.

Contacts with extension agents

Majority (63.3%) of the farmers had contacts with extension agents twice in a month, 14.7% and 3.3% had contacts once and three times in a month respectively. 18.7% of the farmers never had any contact at all.

Cosmopoliteness

Farmers studied travelled daily (0.7%), weekly (8.7%), fortnightly (24%), monthly (14.7%), quarterly (21.3%) and yearly (30.7%).

Risk aversion

Most (49.3%) of the farmers were highly risk-aversive, 38.7% were risk-aversive, 8.7% were neutral and 3.3% were less risk-aversive. However, none of the farmers were not risk-aversive.

Fatalism

About 29.0% of the farmers were either less fatalistic or fatalistic. While 18.7% were highly fatalistic, 13.3% were never fatalistic and 10.7% of the population were neutral.

Economic constraints

Majority (43.3%) of the farmers were often faced with the problem of fund, 38% were always faced with fund problem, 14% were rarely faced with the problem of fund and 4.7% were never faced with the problem of fund. 78.7% of the farmers asserted that enough labour was not always available, 16.7% said enough labour was always available and 4.7% believed enough labour was never available. Majority (75.3%) of the farmers said that enough land was always available, 24% said enough land was not always available while just 0.7% said enough land was never available.

Farm Size

Most (49.3%) of the farmers had between 1-5 hectares and 43.9% had between 11-35 hectares of farmland. While 2% had below 1 hectare of farm land, 4.7% of the farmers had above 40 hectares.

The decision of family members

Most (78%) farmers were either influenced by their wives or husbands, 53.3% were influenced by their children and 67.3% were influenced by other (extended) family members.

Relative advantage

With the exception of the planting of yam minisett (2.7%) and alley farming (0.7%), most of the farmers believed that the innovations introduced were better off than old existing practices. Improved maize (96.7%), improved cassava cuttings (95.3%), improved rice (89.3%), the use of chemicals (89.3%), improved hybrid cocoa (85.3%), copism (80%), cowpea (74.7%) e.t.c. all got the nod of being more advantageous to existing practices.

compatibility

Most of the innovations introduced to the study area were considered as being compatible by majority of the farmers except yam minisett planting (14%), alley farming (18.7%) homestead fish production (33.3%) and the planting of soybeans (46.7%)

Cost-profitability ratio

Of all the innovations introduced into the study area, the application of fertilizer (83.3%), the use of chemicals (86%), improved feeding and housing of sheep and goat (64%), rearing of rabbit (58.7%), homestead fish production (77.3%), and mechanization (91.3%) were mostly rated by the farmers as being expensive or costly to practise.

Availability

Improved maize (97.3%), improved cassava cuttings (100%), improved rice (94.7%), improved cowpea (80%), maize sole (81.3%), correct spacing (80%), soybeans (64%), hybrid cocoa (80%) and copism (70%) were rated by the farmers as being available. Fertilizer (57.3%), yam minisetts (64.7%), chemicals (63.3%), improved feeding and housing of sheep and goat (60.7%), rearing of rabbits (64.7%), homestead fish production (59.3%) and mechanization (61.3%) were the innovations mainly rated as 'less available'.

Distribution of innovations by adoption and discontinuance

With the exception of yam minisett and alley farming which were never adopted, those innovations with which farmers recorded few or relatively low levels of adoption are: homestead fish production (3.3%), rearing of rabbits (22.7%), improved feeding and housing of sheep and goat (36%) and mechanization (38%).

The highest percentage (78.5%) of discontinuance was recorded in soybean planting. Other innovations with which there were more occurrences of discontinuances are: improved cowpea (64.2%), maize sole (59.3%), rearing of rabbits (58.8%), improved rice (41.3%), application of fertilizer (32.8%), mechanization (31.6%), copism (30.2%) and, improved feeding and housing of sheep and goat (29.6%).

Causes of (or factors associated with) discontinuance

All (100%) of the factors associated with discontinuance of the planting of cassava cuttings was singly by the innovation's genetic trait and taste. Natural circumstances and hazards (100%) caused the discontinuance with the planting of improved rice. Lack of fund (44.3%), lack of inputs (27.9%), no technical assistance (1.6%), family decision (4.9%), natural circumstances and hazards (8.2%) and the innovation's risky nature (13.1%) were the factors that engendered the discontinuance with the planting of improved cowpea. The planting of maize as a sole crop was discontinued due to family decision (48.1%) and less economical nature of the innovation (51.9%).

All the discontinuances recorded against Optimum plant population (O.P.P.) were ascribed to the decision of family members (100%).

Lack of fund (70.7%) and lack of inputs (29.3%) were attributed to the discontinuances made with the use of fertilizer.

Lack of inputs (6.5%), family decision (14.5%), natural circumstances and hazards (14.5%) and no market (64.5%) were factors associated with the discontinuances of soybean planting. The use of chemicals were discontinued with due to lack of fund (83.3%) and lack of inputs (16.7%). Natural circumstances and hazards (100%) was the only cause of the discontinuance made with the use hybrid cocoa. No technical assistance (11.5%), family decision (3.8%) and natural circumstances and hazards (84.6%) were attributed to the discontinuances embarked on the use of copism. Lack of fund (68.8%) and lack of inputs (31.3%) were the major causes of discontinuances had with improved feeding and housing of sheep goat.

The rearing of rabbits was discontinued with as a result of lack of fund (65%), lack of inputs (5%), family decision (5%) and its nature of "demanding too much attention" (25%). Mechanization was discontinued by farmers as a result of lack of fund (88.9%), lack of inputs (5.6%) and family decision (5.6%).

The natures of discontinuances

With the exception of hybrid cocoa (4.8%), copism (15.4%) and mechanization (44.4%) all the discontinuances made with innovations were mainly gradual discontinuances. A substantial number of immediate discontinuances were recorded against cocoa hybrid (61.9%), rearing of rabbits (45%), mechanization (44.4%), soybean (35.5%), copism (34.6%) and improved feeding and housing of sheep and goat (31.3%). The highest level of rapid discontinuances was recorded against copism (50%). Improved cocoa (33.3%),

O.P.P. (25%) and improved cowpea (18%) were substantially discontinued in a rapid fashion as well.

Cause of Immediate discontinuances

Most of the immediate discontinuances recorded were mainly due to natural hazards (26.3%), lack of adequate marketing channels (18.9%) and non-availability of money (16.8%). Others are selinity (8.4%) and cost of the innovation (8.4%).

Causes of gradual discontinuances

Lack of fund (38.2%), uncertainties in weather condition (26%) and inadequacy of inputs' availability (15.3%) were the major factors of gradual discontinuances recorded by farmers. Lack of market for produce (8.4%) was also a relatively substantial factor of gradual discontinuance.

Causes of rapid discontinuances

Loss due to natural hazards (39%), depreciating health condition (33.9%) and the nature of certain innovation(s) "not being able to maximise the use of resources" (20.3%) were the major attributes of rapid discontinuances.

Farmer's level of discontinuance with the use of innovation(s)

Majority (55.3%) of the farmers had low level of discontinuance with some recording no discontinuances. 33.3% and 11.3% had high and very high level of discontinuances respectively.

Relationship between farmer's personal/socio-economic characteristics and discontinuance

1. Sex ($r = 0.1875$) had positive and significant correlation with discontinuance.
2. Cosmopoliteness ($r = -0.1889$) had negative but significant correlation with

discontinuance.

3. Fatalism (r = 0.3405) had positive and significant correlation with discontinuance.

4. Family size (t = -2.211) had negative but significant association with discontinuance.

Relationship between the characteristics of innovations and discontinuance

1. Relative advantage (r = -0.2661) had negative but significant relationship with discontinuance

2. Compatibility (r = -.02265) had negative but significant relationship with discontinuance.

3. Cost-profitability ratio (r = 0.2050) had positive and significant relationship with discontinuance

4. Availability (t = -2.255) had negative but significant relationship with discontinuance.

5.3 CONCLUSION

The following conclusions were drawn from the major findings of this study thus:

1. A substantial proportion (41.4%) of farmers were of age and this might have been one of the major factors contributing to discontinuance as senility wanes the farmer's strength. Majority (88%) of the farmers were married with most (24%) of them having 5-6 members. The decision and influence of these family members on the farmers could at one time or the other engender discontinuance.
2. Most farmers (57.4%) who belonged to the farmers' cooperative societies were literate (58%) and had spent a substantial number of years (11-20 years) at school. All these attributes may have contributed to low level of discontinuance decisions by most farmers as they (i) interacted with colleague farmers and shared new ideas and experiences; (ii) are able to read and write, hence enabling them to decode most written agricultural information and; (iii) have spent quite a number of years at school diffusing new cultures and orientation which eventually influence their perspectives of life in the positive direction.
3. The ability of most (91.3%) farmers to have access to the use of at least one mass medium and having contacts with extension agents (81.3%) with their high level of cosmopoliteness may have been the major factors contributing to low level of discontinuance.
4. The risk-aversiveness of most (91.3%) farmers and fatalistic idiosyncrasy of the farmers (76.1%) may serve as major attributes contributing to discontinuances. This is because farmers who are risk-aversive and fatalistic tend to shy away from

continued use of innovation(s) which success they perceive uncertain. They might want to overcome their blocks in their failures in previous adoption through rationalization by resigning to fate respectively.

5. Major economic constraints (production resources) such as fund, labour and land were also identified as major barriers in discontinuance cases amidst farmers: only 4.7% of the farmers had above 40 acres of farmland; 81.3% were constrained by fund and; 78.7% asserted that labour non-availability was a barrier to agricultural practices.

6. The relative advantage, compatibility, cost and availability of most innovations introduced to farmers in the study area may have contributed inversely to discontinuance decisions. Farmers would be encouraged to continue with the use of innovations when all the innovations characteristics are in line with what they (farmers) desire.

7. Most of the discontinuances recorded in the study area were mainly due to lack of fund, lack of inputs, family decisions, natural circumstances/hazards, genetic traits/tastes and, lack of market for produce. All of these factors have led to either immediate, gradual or rapid discontinuances.

8. Whereas, some of the farmers in Ekiti North area of Ondo State never discontinued with any of their adopted innovations, discontinuance levels were between 1-8 amidst the farmers who had discontinuances. The incidents of low level of discontinuance had the highest percentage (55.3%). Hence, farmers in the study area are believed to have low level of discontinuance.

9. Out of the variables investigated in this study, sex, cosmopoliteness, fatalism, family size, relative advantage, compatibility, cost-profitability ratio and availability had significant relationship with discontinuances. These relationships were in the expected directions and showed the extent of association of each of the variables with discontinuance index. That is to say that, sex, fatalism and cost-profitability ratio all had positive correlation with discontinuance while cosmopoliteness, family size, relative advantage, compatibility and availability had negative relationship with discontinuance.

5.4 RECOMMENDATIONS

The cases of discontinuance with agricultural innovations among farmers in the study area are directly linked with either covert or overt problems inherent in the innovations, its diffusion and adoption processes, as well as in the farmers themselves. Hence, the identification of these problems (although not exhaustive) has led to the following recommendations:

1. More cognizance to key role of producer incentives

Two major problems associated with discontinuance amidst farmers in the study area are lack of fund and inputs. The drastic reduction in the prices of production inputs (like seeds, fertilizer, chemicals: herbicides, fungicides, insecticides etc.) by the government through good fiscal policies would go a long way to encouraging farmers in continued adoption of innovations. The Agricultural Credit Guarantee Scheme Fund (established in 1977) would only perform its effective role of loan disbursement to farmers through the commercial banks only if the payment of indemnity to the latter by the Central Bank of

Nigeria (CBN) is stabilized. In addition, mobile banking system (pioneered by a special Agro-allied Bank) should be well entrenched in order to reach unto farmers (at village level) who are scared of bureaucratic trauma of the conventional commercial banks.

2. Strengthening farmers' confidence

The need to establish a scheme which would strengthen farmers' confidence in their decisions to continue with the adoption of innovations is an imperative. Contrary to the approach of the Agricultural Credit Guarantee Scheme that ensures the payment of compensation to benefactor banks in cases of default, this scheme should pay indemnity to victim farmers. This would go a long way to consolidate the role of Nigeria Agricultural Insurance Company (NAIC). Losses due to natural disaster or hazards (like flood, drought, pest-invasion e.t.c) in the course of adoption should be compensated. This would go a long way in disabusing the farmers' minds of risk-aversive and fatalistic dispositions.

3. The creation of marketing facilities

Government should create avenues through which produce could be favourably disposed. For instance more agro-allied industries (which process farm produce to finished items) should be established. Most of the farmers that discontinued with the planting of soybean attributed their reason to lack of market. If farmers make timely and profitable sales of their farm produce, they would be encouraged to continue with adoption.

4. More focus on the values of the farm families

Most farmers are peasants. They plant crops for their family and personal consumption. While encouraging them to rear animals and plant crops for consumption and sales, change agencies must not overlook the fact that most 'subcultures of peasantry' could

favour immediate gratification. Hence, if the farmers taste is not in line with the innovation, he may become indifferent and shirk the continuity of adoption. Kidd (1968), in support of this argument, observed that there were discontinuances with NSI maize because "potential consumers disliked its yellow colour...." In essence, it could be that the taste of a particular farm product makes more meaning to the farmer than the potential monetary returns from its sales. Extension and research agencies must then be able to identify the major needs of the farmer for any efforts to be considered worthwhile.

Suggestions for further research

Key area of study in this research work is the identification of factors associated with the discontinuance of agricultural innovations among farmers in Ekiti North of Ondo State. This study is however not exhaustive. Some of the characteristics of innovation not studied in relation to discontinuance are: complexity, communicability and divisibility.

The farmer's drive towards adoption of innovations as they affect his discontinuance behaviour was not given consideration.

These areas would serve as major bases for further studies on discontinuance.

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APPENDIX

DEPARTMENT OF AGRICULTURAL EXTENSION AND RURAL SOCIOLOGY

OBAFEMI AWOLOWO UNIVERSITY, ILE-IFE

INTERVIEW SCHEDULE

Dear respondent,

I am a research student in the Dept, of Agricultural Extension and Rural Sociology. The title of my research is: "Factors Associated with Discontinuance of some Agricultural Innovations Among Farmers in Ekiti North of Ondo State, Nigeria". Your cooperation is therefore solicited in supplying necessary information which shall be made confidential.

Thankyou

KOLAWOLE, Olutoyin - Dare
(RESEARCHER)

1. Independent Variables

(a) Personal and Socio-economic characteristics

Could you please tell me few things about yourself:

1. Name.....(Optional) 2. Location.....

3. Age, please, how old are you?.....

4. Sex (observe and record) Male..... Female.....

5. Marital Status: Singe..... Married..... Widow/Widowered.....

Divorced..... Separated.....

6. Family size: (i) Number of wives (for married male).....

(ii) Number of children.....

Association(s) membership and participation

Specify any of the association you belong to and the corresponding position you hold

	Position		
Association	Ordinary member	Committee member	Officer
Farmers Cooperation			
Improved Union			
Elite Club			
Religious Organisation			
Trade Union			
Village Council			
Political Organization			
Others			

Literacy

8. Are you able to read/write or both? Yes/No

9. If 'Yes' to question 8, then specify (Tick the appropriate option given): I am able to read only I am able to read and write

Level of Eduction

10. Did you have any formal education? Yes/No

11. If 'Yes' to question 10, then specify the level of your education and years spent at school.

Level of Education	Mark 'X' where applicable	Years spent at school
Pry Education only		
Secondary education		
Post Secondary education		

Mass Media Exposure

12. State which of the following media through which you obtain agric information (Tick the appropriate option(s):

(i) radio (ii) Television (iii) Newspaper (iv) Magazines/Bulletin (v) Leaflets

Contact with Extension Agents

13. Have you ever had contact(s) with an agent before? Yes/No

14. If 'Yes' to question 13, then state how often you have met with extension agents within a month. Tick the appropriate option

5= □ 4= □ 3= □ 2= □ 1= □ Cosmopoliteness

15. Have you ever travelled outside your immediate community before? Yes/No

16. If 'Yes' to question 15, state how often you travel out of your locality (Tick the appropriate option)

(i) Daily □ (ii) Weekly □ (iii) Fortnightly □ (iv) Monthly □ (v) Quarterly □ (vi) Yearly □

17. State where you have travelled to (Tick the appropriate option):

(i) Visit(s) made to other farms in the locality □ (ii) Visit(s) made to other villages/towns outside the locality □ (iii) Visit(s) made to other States in the Federation □ (iv) Visit(s) made to other countries.

18. What are the purposes of your visit(s)? (Tick whichever is correct)

(i) Visit(s) made to collect agricultural information □ (ii) visit(s) made on business purposes □ (iii) Visit(s) made on simple courtesy on friends □ (iv) Visit(s) made just for leisure purposes □.

Risk Aversion

19 What are your responses on the following statements?

		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
i.	I hate trying out any venture of which I have little or no experience					
ii.	I can't afford to fail in any venture I am involved					
iii.	I don't want anything to jeopardise my means of livelihood for any reason					
iv.	I hate getting involved in business activities					

which success I am not sure of

Fatalism

20 Please respond to the following set of statements

i. There is no amount of effort that could bring about any change in man's destiny

ii. No amount of information and teaching can make a good change in farming practices

iii. Whatever happens to any person is the handiwork of providence.

iv. What will happen will happen no matter the amount of efforts man puts into any endeavour.

Economic Constraints

21. Specify your financial position while adopting an innovation (Tick the most appropriate option).

(i) I am always faced with the problem of fund □ (ii) I am often faced with the problem of fund □ (iii) I am rarely faced with the problem of fund □ (iv) I am never faced with the problem of fund □.

22. To what extent is labour available to you during farming operations?

(i) Enough labour is always available □ (ii) Enough labour is not always available □ (iii) Enough labour is never available □.

23. To what extent is land available to you during farming operations?

(i) Enough land is always available □ (ii) Enough land is not always available □ (iii) Enough land is never available □.

Farm Size

24. (i) What is the size of your arable crop farm in acres?....

(ii) What is the size of your permanent/tree crop farm in acres? .....

The Decision of Family Members

25. Has your wife ever played key roles in your decision making before? Yes/No

26. If 'Yes' to question 25, it means; I am always influenced by my wife I am often influenced by my wife □; I am rarely influenced by my wife □ ; I am not influenced by my wife □

27. Have your children in any case influenced you in making decision before? Yes/No

28. If 'Yes' to question 27, it means; I am always influence by my children

I am often influence by my children □; I am rarely influenced by my children □; I am not influence by my children □.

29. Have your family members (other than your wife and children) ever influenced you in making decision before? Yes/No.

30. If 'Yes' to question 29, then you are: always influenced □ often influenced □; rarely influenced □; not influenced □.

(b) Characteristics of Innovation

Relative Advantage

31. How do you compare those innovations you have adopted to those of traditional practices? Match innovation with appropriate options.

Innovation	Better off	The same	Less better off
The use of improved varieties of maize			
Improved varieties of cassava			
Improved varieties of rice			
Improved varieties of cowpea			
Maize sole			
Correct spacing (O.P.P)			
Correct fertilizer usage			
Yam minisett production			
Soy bean production			
The use of chemicals (Pesticide, herbicides, fungicides)			
Improved varieties of cocoa			
Cocoa plantation rehabilitation (copism)			

Alley farming			
Improved feeding and housing systomsin sheep and goat			
Rabbit production			
Homestead fish production			
Ploughing, harrowing, ridging & planting			

Compatibility

32. What is the relationship between innovations introduced and your community taste and preference? Match innovations with the appropriate option.

Innovation	Compatible	Not compatible
Improved varieties of maize		
Improved varieties of cassava		
Improved varieties of rice		
Improved varieties of cowpea		
Maize sole		
Correct spacing (O.P.P.)		
Correct fertilization usage		
Yam minisett production		
Soybean production		
The use of chemicals (Pesticides, herbicides, fungicides)		
Planting of improved varieties of cocoa		
Cocoa plantation rehabilitation (copism)		
Alley farming		

Improved feeding and housing systemsinsheep and goat		
Rabbit production		
Homestead fish production		
Ploughing, harrowing, ridging planting		

33. Cost

How do you perceive those innovations introduced in terms of capital outlay? Match innovations with appropriate options.

Innovation	Expensive	Not expensive
Improved varieties of maize		
Improved varieties of cassava		
Improved varieties of rice		
Improved varieties of cowpea		
Maize sole		
Correct spacing (O.P.P.)		
Correct fertilization usage		
Yam minisett production		
Soybean production		
The use of chemicals (Pesticides, herbicides, fungicides)		
Planting of improved varieties of cocoa		
Cocoa plantation rehabilitation (copism)		

Alley farming		
Improved feeding and housing systemsinsheep and goat		
Rabbit production		
Homestead fish production		
Ploughing, harrowing, ridging planting		

34. Availability

Identify innovations in terms of how easy it for you lay hold on its practices.

Innovation	Available	Less Available	Not available
The use of improved varieties of maize			
Improved varieties of cassava			
Improved varieties of rice			
Improved varieties of cowpea			
Maize sole			
Correct spacing (O.P.P)			
Correct fertilizer usage			
Yam minisett production			
Soy bean production			
The use of chemicals (Pesticide, herbicides, fungicides)			
Improved varieties of cocoa			
Cocoa plantation rehabilitation (copism)			
Alley farming			

Improved feeding and housing systomsin sheep and goat			
Rabbit production			
Homestead fish production			
Ploughing, harrowing, ridging & planting			

II. Dependent Variable

35. Discontinuance Index

Identify all innovations introduced into your community showing those you adopted and those you discontinued with.

Innovation	Not adopted	Adopted	Discontinued	Continued
Improved maize				
Improved cassava				
Improved rice				
Improved cowpea				
Maize sole				
Correct spacing (O.P.P)				
Fertilizer				
Yam minisett . production				
Soybean production				
Chemicals				

Improved cocoa				
Cocoa (copism)				
Alley farming				
Feeding and housing				
Rabbit production				
Homestead fish production				
Ploughing, harrowing, ridging and planting.				

36. What were the causes of your discontinuances in respect to the innovations?

	Lack of fund	Lack of Inputs	No Technical Assistance	Family Decision	Natural Circumstance	No Market	Risky
Improved maize							
Improved cassava							
Improved rice							
Improved cowpea							
Maize sole							
Correct spacing (O.P.P)							
Fertilizer							

37. What is the nature of the discontinuances you made? Mark 'X' on the appropriate column.

Innovation	Immediate Discontinuance	Gradual Discontinuance	Rapid Discontinuance
The use of improved varieties of maize			
Improved varieties of cassava			
Improved varieties of rice			
Improved varieties of cowpea			
Maize sole			
Correct spacing (O.P.P)			
Correct fertilizer usage			
Yam minisett production			
Soybean production			
The use of chemicals (Pesticide, herbicides, fungicides)			
Improved varieties of cocoa			
Cocoa plantation rehabilitation (copism)			
Alley farming			
Improved feeding and housing systems in sheep and goat			
Rabbit production			
Homestead fish production			
Ploughing, harrowing, ridging & planting			

38. In the case of spontaneous discontinuances you made, what were the causes of such? Tick the appropriate option(s). Inputs were no longer available □; Lack of good health □; Money was no longer available □; Political unrest □; Lack of adequate marketing channels; Government policy; Cost of innovation □; Time consuming □.

39. In the case of gradual discontinuances you made, what were the causes of such? Tick the appropriate option(s)

(i) Waning strength due to old age □ (ii) Availability of inputs is becoming inadequate □ (iii) Attendance to other pressing family issues □ (iv) Lack of market for produce □ (v) Uncertainties in weather conditions □ (vi) The needed technical assistance is not obtained.

40. What were the causes of the rapid discontinuance you made? Tick the appropriate option(s)

(i) The innovation(s) is/are not serving indigenous useful purpose to other enterprises on the farm.

(ii) Government policy on pricing □

(iii) Depreciating health condition □

(iv) Loss due to natural circumstances □

(v) The innovation is less advantageous to other competing enterprises □.

(vi) Others.....