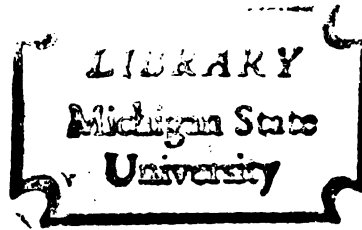






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THESIS



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A STUDY OF PERSUASIVE STRATEGIES ADOPTED BY
THE AGRICULTURAL EXTENSION AGENTS OF MICHIGAN
STATE UNIVERSITY TO DISSEMINATE NEW FARM TECHNOLOGIES
TO MICHIGAN FARMERS WITH RESEARCH IMPLICATIONS FOR
DEVELOPING COUNTRIES.

presented by

HYACINTH IBE DIKE

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TO MICHIGAN FARMERS WITH RESEARCH IMPLICATIONS
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By

Hyacinth Ibe Dike

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ABSTRACT

**A STUDY OF PERSUASIVE STRATEGIES ADOPTED BY THE
AGRICULTURAL EXTENSION AGENTS OF MICHIGAN STATE UNIVERSITY
TO DISSEMINATE NEW FARM TECHNOLOGIES TO MICHIGAN FARMERS
WITH RESEARCH IMPLICATIONS FOR DEVELOPING COUNTRIES**

By

Hyacinth Ibe Dike

The present study is to determine some of the factors agricultural extension agents in Michigan consider for persuading farmers to use a new farm practice and the implications of the findings to developing countries.

Analysis of the result showed that farmers' interest in a new farm practice and the relative advantage of a new farm practice are the most important variables for getting Michigan farmers to try a new farm practice. Agent's trustworthiness, open-mindedness and patience are considered more important than their knowledgeability, flexibility and ability to like farming. Person to person contact and use of demonstration plots are more effective means of persuasion than newsletter, newspaper, radio and television.

It is suggested that a network analysis to identify channels of communication existing among agricultural institutes, agricultural extension agents and farmers be conducted. Extension agent's self role perception and farmers perceptions of agent's role and the effect of these on agent performance should be determined.

To my wife

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Finally, to my wife, Mrs. Angelina C. Dike, who was the cause of my undertaking this project, I am grateful.

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CHAPTER ONE

INTRODUCTION AND STATEMENT OF THE PROBLEM

Inability of many "developing" countries to produce enough food for their rapidly increasing population has been a perennial problem in the world food scene.¹ Many of these countries have embarked on food production projects aimed at solving this food problem. A case in point is Nigeria which in 1973 launched her "National Accelerated Food Production Project (presently known as the "Green Revolution")² aimed at making that country self sufficient in food production.

Over the past four or five decades, many institutions in the "developed" countries have shown tremendous interest in helping to produce more food for the "developing" countries. In U.S. for instance, the Midwest Universities Consortium for International Activities, is one such institution whose members have developed new farm technologies for use in the "developing" countries.³

Another group of workers have devoted their attention to determining how these new farm techniques can be adopted by their clients. This has led to many adoption models and to a determination of the characteristics of individuals in an adoption model continuum (Rogers and Shoemaker, 1971;⁴ Zaltman and Duncan, 1977;⁵ Huse, 1975.⁶)

Despite all these innovative farm technologies and the various "innovation-decision" models, food shortage still persists in many "developing" countries. Among the many factors that could be the root cause of this persistent food shortage is the lack of knowledge of persuasive strategies and the application of these persuasive strategies by agricultural extension agents in "developing" countries for getting their farmers to adopt new farm practices. Different authors have provided differing definitions of persuasion (7,8,9,10). As is used in this study, persuasion refers to an interactive exchange between a source and a receiver in which the source obtains data from the receiver which is used to manipulate the beliefs, attitudes and behavior of the receiver in a manner predetermined by the source.

Persuasive strategy is not the only strategy that can be used for an innovation-decision process. Others are "re-educational", "facilitative" and "power" strategies.¹¹ However, this study takes the view suggested by Zaltman and Duncan (1977)¹² that all messages transmitted from a source to a receiver are persuasive in nature. This buttresses the importance of persuasive strategy in any innovation-decision process. It is the contention of this study that new farm technologies have failed to be adopted by farmers from "developing" countries because of inadequate knowledge and application of effective persuasive strategies for their implementation by their agricultural extension agents.

Food shortage was once considered a problem in U.S. Today, U.S. exports food to many "developing" countries of the world to help them combat their food shortage problem. One way in which U.S. solved her food problem was through the establishment of Land Grant Colleges of which Michigan State University was a pioneer. The Federal Smith-Lever Act of 1914 established the Cooperative Extension Service directed by these Land Grant Colleges and provided them with funds to "aid in diffusing among the people of the United States useful and practical information on subjects relating to Agriculture and Home Economics and to encourage the application of the same."¹³ Cooperative Extension Service is therefore a means of bringing to fruition the philosophy of the Land Grant Colleges which is "education to meet the needs of the people".¹⁴

The agricultural and natural resources industries in the State of Michigan are said to have "taken a quantum leap forward during the past year and remains one of the stabilizing industries"¹⁵ in the State's economy. "The growth rate for Michigan's agriculture was 15 percent in 1980 and it contributed \$16.3 billion to the State's economy".¹⁶

The good performance of the agricultural and natural resources industries in the State of Michigan has been attributed in part to the establishment of the Agricultural Experimental Station and the Cooperative Extension Service. In a report presented by Michigan State University to the Senate and House of Representatives of the State of Michigan it is stated that:

The joint efforts of scientific investigation by the Agricultural Experimental station and dissemination of the practical information from that research by the Cooperative Extension Service have increased productivity in the State and improved the quality of life. 17

It is the assumption of this study that the Cooperative Extension Service has been successful because she uses effective persuasive strategies to disseminate new farm technologies to her farmers. It is on the basis of this assumption that this study is being conducted to determine these persuasive strategies. It is hoped that such strategies can be adapted for conducting comparative studies in developing countries and developing a program for training agriculture extension agents.

ORGANIZATION OF COOPERATIVE EXTENSION SERVICE IN MICHIGAN

The Cooperative Extension Service is one of the three divisions in the College of Agriculture and Natural Resources at Michigan State University charged among others with the duty of educating Michigan farmers on how to apply new farm technologies. The other two divisions are the various departments in the College involved in teaching and the Agriculture Experimental Stations involved in research. The interactions of the agricultural unit of Cooperative Extension Service with farmers and with the Experimental Stations help to generate new farm technologies which are passed back to farmers. The agricultural unit of the Cooperative Extension Service therefore serves as a resource linker between Michigan farmers

and specialists involved in research. It does not postulate to be a solution giver but rather provides an unbiased information to farmers on the best ways to solve their problems.

The Cooperative Extension Service has an Assistant Dean College of Agriculture as its director. There are two associate directors, one for programs and the other for administration¹⁸ (Appendix E). The Associate Director for Administration is in charge of hiring, evaluating, promoting and transfer of personnel in the service as well as preparing reports to supporting agencies. There are four assistant program directors namely, the directors for Agriculture and Marketing, Natural Resources and Public Policy, Family Living, and 4-H Youth programs.

The State of Michigan is divided into six regions and each region has a regional supervisor. There are eighty-three counties in the State of Michigan and 81 County extension directors. These County extension directors and their extension agents form the direct link with the various clients in the four program areas.

Each county has boards of commissioners representing various programs. The county extension director works with these boards or their committees. In the case of agriculture and marketing sector of the Cooperative Extension Service, the board of commissioners or their committees serve as "bridges" between farmers, county extension staff, Cooperative Extension Service and Agriculture Experimental Stations. Farmers provide inputs for these committees. These inputs lead to the

development or adaptation of technologies as well as educational programs. The committees also recommend adequate county appropriation for extension works and may work with boards and committees across county lines to finance area projects.

In addition to these boards and committees, the county extension agents also work with over 35,000 volunteer leaders whose assistance help to produce the "multiplier effect" that has led to effective dissemination of information.

Other program areas in the Cooperative extension service are:

1. The international extension unit which trains extension agents for overseas duties and serves as a "liaison" between foreign visitors and agricultural establishments in Michigan.

2. The Management information unit which maintains the extension management information system, processes plans of work and reports budget and personnel data.

3. The Information Service unit which produces news releases, newsletters, extension bulletins, radio and television shows and films.

4. Management Services which maintain a computerized accounting system for budget and personnel management for Cooperative Extension Service and the College.

5. The Agriculture and Natural Resources Education Institute which "coordinates the development of professional improvement programs and offers in-service training in

communication, management and subject-matter areas related to the roles and responsibilities of extension staff members."¹⁹

FINANCING OF COOPERATIVE EXTENSION SERVICE IN MICHIGAN

The term "cooperative" in Cooperative Extension Service reflects the joint financing by the federal, state and county governments. Under provision of the federal act, 4 percent of the federal appropriation is allocated to the federal extension service for administration. The remainder is appropriated as follows:

1. 20 percent to states in equal proportion.
2. 20 percent to states in the proportion that the rural population of each bears to the total rural population of U.S.
3. The balance to each state in the proportion that the farm population of each bears to the total farm population as determined by the U.S. census.

The State of Michigan as well as county governments also make appropriations to support extension service.²⁰

AGRICULTURAL EXTENSION DIVISION AND STATE DEPARTMENT OF AGRICULTURE IN MICHIGAN

The Agricultural and Marketing unit of the Cooperative Extension Service has the sole responsibility of educating farmers on the application of new farm technologies. Even though it works cooperatively with the State Department of Agriculture, it does not belong to that Department. The

Department of Agriculture on the other hand is involved in such other activities as credit, standards and quality control, etc. This separation of the educational functions from those of control and supervision provides the agricultural extension agents the neutrality they need to be an objective provider of information to farmers.

AGRICULTURAL EXTENSION SERVICE IN DEVELOPING COUNTRIES

Agricultural Extension Service in developing countries belongs to the Ministry of Agriculture. This is unlike what obtains in U.S. Thus the extension service combines the functions of education with those of control and supervision.

In a country like Nigeria for instance, which has 19 states, each state has a Ministry of Agriculture. A federal Ministry of Agriculture enunciates government policies and coordinates the execution of these policies as they relate to agriculture.

Each state is divided into divisions. A divisional agricultural extension officer is in charge of all extension activities in a division. Each division is divided into Local Government Authority areas to which at least one extension agent is posted. Not all extension agents are graduates. The following listing shows the rank and type of training of extension staff. (Table 1.1).

The divisional officer may be a Principal or Senior Agricultural Officer while the Local Government extension

TABLE 1.1 STAFF OF EXTENSION SERVICE BY RANK AND TRAINING

<u>RANK</u>	<u>TRAINING</u>
Principal Agric. Off.	Graduate of a University
Sen. Agric. Off.	
Agric. Res. Off.	
Agric. Advisor	
Agric. Off.	
Agric. Supt.	Secondary school diploma and 2 years diploma from Agric. School
Asst. Agric. Supt.	
Sen. Agric. Asst.	
Agric. Asst.	Secondary school diploma and one year diploma from Agric. School.
Agric. Demonstrator	Primary school diploma. 6 months course in school of agric.
Agric. Overseer	

officer may be an officer ranging in rank from Agricultural Superintendent to Agricultural Assistant.

All requests for supplies and services from an extension agent are channeled through the divisional officer to the Chief Inspector of Agriculture in the Ministry who in turn consults specialist staff in the Ministry. Extension agents therefore combine the dual functions of training and supervision.

The bulk of extension agents are primary and secondary school graduates. It is therefore assumed that they may not have the expertise to be effective persuaders. It is hoped the results of this study will provide data that can be used to improve their expertise in persuasion.

NEED FOR THE STUDY

Several survey studies by the Food Agricultural Organization (FAO) have shown that:

...some 20% of the people in the under developed areas are undernourished and 60% are malnourished. Experience shows that the majority of the undernourished are also malnourished. It is believed therefore.... some 60% of the people in the under developed areas comprising some two-thirds of the world's population suffer from undernourishment or malnourishment or both. 21

Many reasons have been adduced to account for this persistent food shortage.²² One such reason is "inadequate training of extension personnel".²³ Extension workers ought to be taught how to be good persuasive strategists. This is

because by knowing the various skills to use under varying client conditions, they will be better able to get their new ideas across to their clients.

Food shortage was a problem in U.S. at the beginning of this century. Presently, the U.S. exports food to many developing countries of the world to help them combat their food problem.

Several studies have attributed U.S. self sufficiency in food production to the efficiency of her Cooperative Extension Service established to help disseminate new farm technologies to farmers. It is the assumption of this study that these extension agents are successful because of their ability to effectively apply persuasive strategies in trying to get new farm technologies adopted by their clients.

The purpose of this study therefore is four-fold:

1. It will determine the various types of farmer characteristics considered by the agricultural extension agents in Michigan to get new farm technologies adopted by Michigan farmers.
2. It will determine some persuasive strategies agricultural extension agents use to persuade Michigan farmers to adopt a new farm technology.
3. It will determine characteristics of an agricultural extension agent considered essential in getting new farm technologies adopted by Michigan farmers.
4. It will determine the types of medium agricultural extension agents in Michigan have found effective for getting new farm technologies adopted by Michigan farmers.

Limitations of the Study

The following limitations influenced the course of this study.

1. Because of time and cost constraints, only a selected sample of Agricultural extension agents was used for this study.
2. The method of collecting data was limited to questionnaire only.
3. The study did not attempt to analyze the content of messages used by agricultural extension agents in Michigan to persuade farmers to adopt a new farm technology.
4. This is an exploratory study designed to find out farmer characteristics, agent characteristics and types of media used by agricultural extension agents in Michigan.

Research Questions

Data collected in this study were used to answer the following research questions:

1. What characteristics of Michigan farmers should an agricultural extension agent consider to effectively persuade them to adopt a new farm technology?
2. What persuasive techniques do agricultural extension agents in Michigan use to get a new farm technology adopted?
3. What characteristics of an agricultural extension agent are needed for being an effective persuader?

4. What various types of media have agricultural extension agents in Michigan found effective for persuading farmers to use a new farm technology?

Research Hypotheses

The following null hypotheses derived from the above research questions were tested at alpha .05 level of significance.

1. Agricultural extension agents in Michigan have not found any type of persuasive strategy effective in persuading farmers to adopt a new technology.
 - 1.a There is no relationship between the education of an agricultural extension agent in Michigan and the type of persuasive strategies used.
 - 1.b. There is no relationship between the level of experience of an agricultural extension agent in Michigan and the type of persuasive strategies used.
2. Agricultural extension agents in Michigan do not consider any agent characteristics essential for being an effective persuader.
 - 2.a. There is no relationship between the education of an agricultural extension agent in Michigan and perceived agent characteristics for being an effective persuader.

- 2.b. There is no relationship between the level of experience of an agricultural extension agent in Michigan and perceived agent characteristics for being an effective persuader.
- 3. Agricultural extension agents in Michigan have not found any particular means of communication more effective than others.
 - 3.a. There is no relationship between the education of an agricultural extension agent in Michigan and the type of media used for persuading Michigan farmers.
 - 3.b. There is no relationship between the level of experience of agricultural extension agent in Michigan and the type of media used for persuading Michigan farmers.

Generalizability of the Study

The findings of this study will only be generalized to Agricultural extension workers in Michigan.

Definition of Terms

"Developing" Country. Any country in the world whose people lack the technology to exploit and process resources in their environments for improving the quality of their lives. Rather they export their raw materials elsewhere and consume the finished products arising therefrom.

New Farm Technology Any method of farming different from what already exists that is capable of leading to improved farm productivity.

Agricultural Extension Agent. A trained agriculturist who serves as a bridge between farmers and agricultural experimental/research stations and who helps farmers to become aware of and utilize effectively new farm techniques and provide feedback from farmers to the agricultural stations. An extension worker strives to ensure that farmers eventually become self reliant and can use their initiative and training to embark upon new projects for improved farm production.

Overview:

The following format is adopted for this study. Chapter One covers the introduction and statement of the problem, the purpose of the study, the need for the study, limitations of the study, research questions and research hypotheses, generalizability of the study and definition of terms.

Chapter Two reviews literature pertinent to this study. In Chapter Three the procedures and methodology for the study are presented. Analysis of data is presented in Chapter Four. Chapter Five discusses the Summary, Conclusions and Recommendations made on the basis of the findings from this study.

CHAPTER TWO

REVIEW OF LITERATURE

This review is organized into four sections. Section A analyzes the various definitions of persuasion to identify their common elements. Section B focuses on the theoretical underpinnings of persuasion. Section C considers factors necessary for persuasion while Section D concentrates on persuasive strategies used during a persuasive communication.

A. Definitions of Persuasion

Several definitions of persuasion appear in the literature. Bettinghaus (1968) for instance, regards persuasion as a form of communication involving:

A conscious attempt by one individual to change the attitudes, beliefs or the behaviour of another individual or group of individuals through the transmission of some message. 24

According to Zaltman and Duncan (1973), persuasive strategies are:

strategies which attempt to bring about change partly through bias in the manner in which a message is structured and presented. 25

Scheider (1967) points out certain distinct factors essential for communication to be regarded as persuasive. These are

choice, communication, influence, etc. According to him, persuasive speaking is:

that activity in which speaker and listener are cojoined and in which the speaker consciously attempts to influence the behavior of the listener by transmitting audible and visible symbolic cues. ²⁶

Scheider's definition of persuasion represents the "two-way" model which is distinct from the "one-way" model. In the "one-way" model, the persuadee is depicted as a passive individual in a persuasive encounter. The "two-way" model on the other hand, operates at two levels. At the first level, persuasion is conceived as an interactive exchange between a source and a receiver in which the source obtains data from the receiver used to manipulate the beliefs, attitudes and behavior of the receiver. At the second level, both the source and the receiver make some compromises in a persuasive encounter. This may be possible because both the source and the receiver have equal power base prior to entering into the persuasive encounter. Bettinghaus (1968) has provided illustration of the "two-way" model of persuasion. ²⁷

Miller and Burgoon (1973) have presented a comparative analysis of the definitions of persuasion. ²⁸ They are of the opinion that the only way to infer that persuasion is effective is through a change in behavior manifested by the persuadee. According to them:

whether the influence attempt aims at changes in attitudes motives, values or behavior is regarded here as relatively unimportant, perhaps a pseudoproblem.... All the persuader ever has available to gauge his relative success or failure is the behavior of the intended persuadee. ²⁹

In as much as the above contention is true, it does not negate the importance of attitudes, motives, values and beliefs in a study of persuasion. In fact, Hovland and Janis (1959) regard attitude change as a precursor for effective persuasion. According to them, attitude change leads to opinion change, perception change, affect change and action change.³⁰

Relying only on external manifestation of behavior as a sign of success or failure of a persuasive message has its shortcomings when considered in the light of Keisler's (1969) work on "conformity". Keisler defines "conformity" as

a change in behavior or belief toward a group as a result of real or imagined group pressure.³¹

Keisler identified two aspects of "conformity" namely "compliance" and "private acceptance". "Compliance" refers to overt behavior which becomes more like the behavior a group wishes its members to show. According to Keisler:

when we speak of "compliance" only, we mean that the person is behaving as the group wants him to behave but does not really believe in what he is doing, that is, he is going along with the group without privately agreeing with the group. ³²

"Private acceptance" on the other hand implies a change in attitude or belief in the direction of group attitudes and beliefs. In this regard, the individual not only acts as the group wishes, but changes his opinions so that he believes as the group believes. According to Keisler:

the person who believes in what he does will probably persist in his behavior long after the group has stopped monitoring his behavior. 33

For persuasion to be lasting therefore, overt behavior must be accompanied by a change in beliefs, attitudes, etc. in the direction predetermined by the persuader using data obtained from the persuadee.

It must, however, be pointed out that the aim of some persuasive messages may be to obtain change in overt behavior of the persuadee. Such a change in overt behavior may serve to increase the level of awareness of the persuadee to the project thereby creating a favourable climate for change in attitude and beliefs through more concerted efforts on the part of the persuader.

Agricultural extension workers attempt to change the behaviors of their clients. For such a change in behavior to have a lasting effect, it must be accompanied by a change in beliefs and attitudes favourable to the change. Only in this way can the change be expected to persist long after the pressure from the extension worker is withdrawn. As is used in this study therefore, persuasion is an interactive exchange between a source and a receiver in which the source obtains data from the receiver which is used to manipulate the beliefs, attitudes and overt behavior of the persuadee in a manner predetermined by the persuader.

B. Theoretical Basis For Persuasion

To understand what happens during a persuasive encounter, a knowledge of how individuals acquire new ideas about the world around them is pertinent. Individuals perceive the world around them as a result of interaction between their genetic composition and factors in their environment.^{34, 35}

One way in which this interaction is fostered is through learning in and out of schools. During such learning process, an individual's frame of reference is broadened through exposure to activities arranged either by himself or other instructors in his environment. Considered in its true perspective therefore, the instructor is a persuader who tries to change or modify the behavior, beliefs and attitudes of his client in a desired direction. It would therefore appear appropriate to consider some learning theories and principles for their suitability to a persuasive situation.

Two major schools of learning theorists--the behaviorists and the cognitives have tried to explain how individuals acquire new information into their frame of reference.

Behaviorist Theories

The behaviorists believe that learning takes place following a presentation of stimuli to which an individual responds. According to the "operant" or "instrumental" (a subschool of the behaviorists) theory of learning, "behavior is a function of its consequences".³⁶ This means that an

individual's response to a stimulus will reinforce the original behavior (stimulus) that triggered it off. Under the "operant" learning situation, it might take several trials before the right response is emitted but once this is done, it reinforces the original stimulus. It is through such interaction of stimulus-response that individuals perceive things in their environments and form their frame of reference. Many studies have shown that such perceptions are culturally determined.^{37, 38} This means that the meaning an individual attaches to a social object or event is his environment will be different from the meaning another individual will attach to the same social object or event.

Rather than waiting until an individual emits the right response, that individual can be guided into producing the right response. This is the basis for the "classical or respondent conditioning" (another sub school of the behaviorist) theory of learning. According to Yelon (1976), respondent or classical conditioning involves:

association of two classes of stimuli one which does not produce a respondent behavior and one which does in order to get the former to elicit the same respondent action as the latter.³⁹

Both the "operant" and the "respondent" theories are essential in a persuasive communication.⁴⁰ A good illustration of the application of the "operant" theory is when a Zoological

association of a university solicits for money from her alumni and follows this up with a letter of thanks to those who donate. For "respondent" conditioning, a situation in which a teacher gets a student to like History by associating history with something that produces "pleasant feeling" for the student is a good illustration.

One of the principal proponents of the behaviorists theory is Skinner⁴¹ who in his principle of "successive approximation" proposed that by breaking down any learning encounter into small units and reinforcing each successful unit, it is possible to achieve the overall objectives of the learning encounter. This has given rise to different "schedules of reinforcement" (Yelon, 1976)⁴² for rewarding individuals for successive approximations towards a desired behavior.

The implications of "successive approximation" principle to persuasion has been illustrated by Bettinghaus,⁴³ 1968. A producer who designs his messages so that the "first message merely tries to attract interest in the product, the second asks for favourable attitude...." is employing this principle of successive approximation to sell his products.

Cognitive Theories

It is not all psychologists that support the "mechanistic" view of learning as presented by the behaviorists. One group that views learning differently are the cognitive

psychologists. The cognitives believe that the "internal state" of an individual is an essential consideration in assessing any learning encounter. They contend that instructional principles must take account of the internal cognitive changes which occur during learning.⁴⁴ Presented with a novel learning event, the individual first "reorganizes" the information he already possesses before coming up with a solution to the problem. Individuals are said to possess "chunks" of knowledge or "list structures" which they "reorganize using various short cut techniques."⁴⁵

Among the leading contributors to cognitive psychology have been the Gestalt psychologists (Wertheimer, 1944; Kohler, 1925; Koffka, 1935). Their principal tenet is that the whole is greater than the sum of its parts. The whole has its own quality which is a commulation of the qualities of its parts. However, this quality of the whole is unique and distinct from the properties of its elements. According to Wertheimer (1944), the founder of Gestalt psychology:

there are contexts in which what is happening in the whole cannot be deduced from the characteristics of the separate pieces, but conversely, what happens to a part of the whole is, in clear-cut cases, determined by the laws of the inner structure of its whole. 46

Primarily interested in perception and only secondarily interested in learning, the Gestalts presented a guiding principle (the law of Pragnaz) and four laws of organization subordinate to it (the law of similarity, proximity, closure and good continuation) for explaining the relationship between parts and their whole in any perceptual phenomenon. 47

The law of Pragnaz suggests that psychological organizations always tend to move towards a state of "good" gestalt depending on the prevailing conditions in the environment. Because of the dynamic nature of elements in the "field", the concept of equilibrium becomes essential in attaining this state of the "good" gestalt. Thus just as the concept of "steady state" in systems theory is made possible as a result of interaction of system variables through permeable "boundaries" so is this state of the "good" gestalt.

The other laws of organization attempt to amplify on this guiding principle of Pragnaz. For instance, the law of similarity states that items which are similar (in color or form) or that have similar transitions (i.e. have similar intervening steps) tend to form groups in perception. The law of proximity states that "perceptual groups are favored according to the nearness of the parts". Thus if several parallel lines are evenly spaced on a page, those nearest together will tend to form groups against the background of empty space.⁴⁸

The relationship between these perceptual laws of organization and learning is not hard to determine. To Kohler (1959),⁴⁹ learning is initiated by the "discovery of the correct responses in the first place. This initial discovery depends on the structuring of the field as it is open to the learner. The ease or difficulty of the problem is largely a matter of perception." Using his experiments with apes, Kohler

showed that the ability of apes to solve the task presented to them was dependent on their ability to literally see the situation correctly in the first place. Being able to do so meant they had "insight" into the problem. Kohler's studies showed that apes could obtain rewards without going through the laborious processes of "stamping out incorrect responses and stamping in correct ones". It showed that apes could turn away from the end of activity towards a means to the end.

Kohler's experiments on "insightful" learning using apes was an expatiation of Wertheimer's work on "productive thinking" which was independently confirmed by the works of Yerkes (1916).⁵⁰ His application of "past experiences" to explain learning differs from those presented by the behaviorists. The behaviorists application presupposes the "past experience guarantees the solution of a problem, no matter how the problem is presented". The "insight" point of view is that past experience makes it possible to determine the "components of a problem" and "their natural relations" which makes a "sensible solution" a possibility. Thus:

with sufficient past experience, some problems are more difficult than others owing to their display or structural features. Some learners can, to be sure, solve the more difficult problems because of experience with the particular kind of display, others because they are better able to generalize and not be misled by the display.⁵¹

Kohler's postulations about "insightful" learning were warmly received by educators in U.S. who were becoming

disenchanted with the "mechanistic" views of education as provided by the behaviorists. Such educators like Dewey (1938) found Koehler's "insightful" learning very supportive of their own learning propositions.

Consistency Theories

The cognitive theories of learning have given rise to another group of psychologists who are interested in finding out how individuals maintain their internal "balance" or "consistency" when presented with contradictory information. Heider (1946) was the first person to consider an individual's cognitive organization in terms of a tendency to prefer a balanced cognitive system. Other workers who have looked at variations of Heider's "balance" theory are Newcomb (1953), Osgood and Tannenbaum (1955), Rosenberg (1956), and Festinger (1957).

Osgood and Tannenbaum were interested in a situation in which they can measure the changes that occur if an incongruent cognitive structure occurs. In contrast to Heider's classification of attitudes as positive or negative, favorable or unfavorable, Osgood and Tannenbaum classified attitudes into 7 degrees ranging from -3 to +3.

The theory of cognitive balance is crucial to persuasive communication. Earlier we discussed how individuals attach meanings to the "social objects and events" they encounter in their environments thereby broadening their frame

of reference. Much of persuasive communication is to induce a persuadee to accept new information which may or may not be contrary to the ones originally held. "Consistency" theories therefore help us to understand how a persuadee tries to maintain his "balance" when presented with such contradictory or non-contradictory information. Such a knowledge assists us in designing a message that may have a chance of success with the persuadee.

IMPLICATIONS OF LEARNING THEORIES TO PERSUASION

Learning can be conceptualized as an organized and interactive process through which a society inculcates and perpetuates its values among its members. From the above definition, the relationship between learning and persuasion becomes apparent for persuasion is one of the techniques that can be used in this acquisition and modification of individual behaviors in any society. According to Bettinghaus (1968), the "one way" model of persuasion "paid relatively little attention to learning as a vital part of the persuasive process". However, "an interactional, "two-way" view of communication cannot ignore learning".⁵² The following are some principles derived from learning theories that can serve as good "rule of thumb" for developing persuasive strategies.

1. Active participation of a persuadee in a persuasive encounter is better than passive participation. This principle is based on the understanding that individuals

learn more when they are doing something related to the activity in which they are involved. Such persuasive techniques as anchoring, commitment, role playing and counter attitudinal advocacy rely on this principle for their fulfillment.

2. In addition to active participation, providing a persuadee with feedback or knowledge of results is beneficial in persuasive encounter. Letting a persuadee know how he is performing not only helps to improve his responses but also "helps to strengthen his frame of reference". A persuadee may not have developed a fixed point of view with regard to a topic. Providing additional information helps to strengthen a frame of reference.

3. The more meaningful a persuasive message is to an audience the better are its chances of acceptance. Mere telling a persuadee to do something without providing him with what Rogers and Shoemaker (1971) term "how-to knowledge" and "principle knowledge" will not lead to effective persuasion.

4. Breaking a complex message into small manageable units leads to a better understanding of the message. If a small unit of this complex information is mastered, it will help to strengthen the frame of reference so that the next phase will be received more favorably.

5. Individuals differ in what motivates them.

6. Different reward factors provide satisfaction to different individuals under varying conditions.

7. Individuals have an inner drive towards organization of inputs and experience into coherent, integrated concepts. This principle is derived from the gestalt law of Pregnaz. Its implication for preparing a persuasive message is to structure the messages so that they serve as a guide to internal attempts at organization. It also enjoins a persuader to ensure that "disorienting factors" are eliminated from a persuasive encounter.

c. Factors That Affect Persuasibility

We have seen how an individual acquires new information into his frame of reference and maintains "balance" when confronted with contradictory information. There are certain individual factors that have been found essential in understanding how individuals respond in a persuasive situation.

1. Individual Belief System

An individual's frame of reference can be regarded as the sum total of meanings which he attaches to "social objects and events" in his environment. An individual's beliefs on the other hand, depict the perceived relationship existing among these objects and events. According to Bettinghaus:

whenever an individual professes to see some relationship between two events or objects or people or between some events and characteristics of the event we say he holds a belief. 53

The entire relationship an individual "sees" among all "social objects and events" constitute his belief system.

There are two parts to one's belief system--the central belief system and the peripheral system. There are two layers within the central belief system. The first is the "primitive" beliefs or beliefs in which there is complete consensus within the society as to its veracity. An example of such "primitive" belief is one's belief in a supreme being. At the second layer are beliefs about "authority" which may be negative or positive. If our belief about authority is positive, we tend to "place faith in statements" emanating from such sources. On the other hand, if we hold a negative belief towards an authority we tend to view with distrust statements emanating from such authority figures. According to Bettinghaus:

Our beliefs about authority are firmly held. They shift slowly over time, but changing an authority belief is difficult. They are beliefs less firmly held than primitive beliefs but they help govern to whom we will listen and whom we will respect. 54

Understanding individual's belief structures have the following implications for persuasive communication.

1. Individuals are more resistant to change in their central beliefs than they are to change in their peripheral beliefs.

2. Changes in the central belief are accompanied by more widespread changes in the remainder of the individual's belief structure.

Since one's frame of reference is the sum total of meanings attached to social objects and events in an environment, the following are some implications of frame of reference to persuasive communication.

1. If a frame of reference is "extensive and relatively complete", much more effort is needed by a persuader to get a new contradictory idea accepted.
2. If a frame of reference is "extensive and relatively complete" a new non contradictory idea helps to reinforce the frame.
3. If a frame of reference is "sketchy and incomplete", a new contradictory idea does not help to reduce entropy in the frame.
4. If a frame of reference is "sketchy and incomplete," a new non contradictory idea leads to negative entropy.

From the above, it is apparent that a prerequisite for effective persuasive communication is understanding a client's belief structure and frame of reference before presenting him with a persuasive message. It must be stressed that presenting a message that is contradictory to a frame of reference requires more effort on the part of the communicator. According to Bettinghaus, the communicator:

has to continue communicating until enough information has been added to force changes in the receiver's attitude structure. 55

2. Individual Personality

Personality has been defined as the "consequences of possessing certain belief structure".⁵⁶ There are certain factors which are known to influence one's personality. These are: self esteem, anxiety, authoritarianism, open and closed mindedness, etc.

a. Self-Esteem

An individual can have a high regard of himself. Such an individual is said to be confident, competent and optimistic. On the other hand, an individual with low esteem of himself is less sure of himself. It can therefore be said that an individual with a low esteem of himself will be more susceptible to persuasive messages than an individual that has a high esteem of himself.⁵⁷

b. Anxiety Levels

Another personality factor that influences an individual's persuasibility is his anxiety level. Individuals exhibit two types of anxiety levels--the neurotic anxiety level and the normal anxiety level. Neurotic anxiety level is characterized "by feelings of apprehension, uncertainty and panic in daily encounters with situations and events."⁵⁸ According to Bettinghaus:

the individual with high neurotic anxiety is less persuasible than the individual who does not become highly defensible about his relationship with the world.⁵⁹

Normal anxiety is more common in our day to day life. It is characterized by "a reaction of mild apprehension and

uncertainty about a particular goal or situation". This reaction is often accompanied by attempts to reduce doubt or uncertainty. Thus according to Bettinghaus, "an increase in normal anxiety may lead to an increase in the individual's general readiness to respond to communication."⁶⁰ It should be pointed out, however, that if the strength of this normal anxiety approaches the neurotic level, its susceptibility to persuasion diminishes since an individual will now be pre-occupied with how to reduce the anxiety level.⁶¹

The other factors such as open mindedness, authoritarianism and need achievement that are known to affect an individual's persuasibility have been explicated by Bettinghaus,⁶² Bradley.⁶³

3. Persuader's Qualities

Persuader's qualities that may enhance his persuasibility have commonly been discussed under the term "ethos". Ethos is the image of the speaker held by a particular listener. Aristotle is said to be of the opinion that "it is the most potent of all means of persuasion".⁶⁴ Bradley (1974) points out that "ethos exist not in the speaker but in the eyes of the beholder."⁶⁵ For instance, a university professor of international reputation may make little impact in a community where university professors are held in low esteem. Conversely in a community where university professors are highly regarded his ethos may increase significantly.

Ethos therefore is dynamic and varies from audience to audience. Thus even though each individual carries along his unique qualities, the interpretation given to this "ethos" is dependent on audience disposition. The implication of this is that a persuasive communicator has to know his audience very well before presenting his persuasive message.

To use "ethos" successfully, a persuader must know its source. Different authors have used various terms to designate the source of "ethos".^{66 67 68} Bradley (1974), however, presents five main sources of "ethos" namely: competence, trustworthiness, similarity, attraction and sincerity.⁶⁹

Competence refers to those factors which could indicate that the speaker is a source of valid information. Competence is enhanced by a speaker's experience, age, any leadership offices or titles held, educational background, etc.

Trustworthiness is the appearance a speaker gives of being "honest, just and objective". The speaker must seem to be free from any self interest in the outcomes of the speaking effort. Most people are suspicious of the speaker whose self interest will be served by the proposal he is advocating. Trustworthiness can be exhibited by a speaker who has low prestige. Studies have shown that "when arguing against his own self interest, a communicator who would normally be considered to have low prestige can be extremely effective..." According to Bradley:

It is evident that a speaker may increase his ethos by making listeners aware of his objectivity or his lack of self interest. 70

Other factors that enhance one's ethos are similarity of the attitudes or other factors between the persuader and the persuadee; attraction which is defined as "any kind of orientation towards another person that involves psychological approach rather than avoidance, moving towards rather than away from".⁷¹

4. Membership to Social Groups

The influence of the social group to which an individual belongs in moulding his beliefs, attitudes and behaviors has been documented by many workers in persuasive communication.

There are different types of social groups. One type is the "membership group" in which individuals become members "involuntarily". This type of social group is also referred to as a "demographic group". Examples of demographic groups are ethnic groups, sex, age, etc.

Sex: Researchers are of the opinion that sex is a factor in persuasibility. However, most evidence insist that the influence of sex is dependent on the topic under discussion rather than any inherent differences in persuasibility between men and women. ⁷²

Age: Researchers also are of the opinion that as an individual grows older, the more complete his frame of reference becomes. Thus messages directed towards such individuals

may not be expected to have drastic effect on their behaviors or attitudes. Conversely, the younger the individual is, the relatively incomplete is his frame of reference and hence the more susceptible is he to persuasive messages.⁷³

Social Class, Educational Achievement, Occupation and Income: The above four variables are treated as demographic factors by most sociologists even though individuals do have control over them unlike such demographic variables like age, or sex. Following the lead provided by Bettinghaus, these will be discussed as demographic variables.

The work of Tryon (1955)⁷⁴ has clearly shown that one's social class determined by economic groupings is highly correlated with one's preferences with respect to attitudes towards politics and government, community enterprise, state support of churches and welfare organizations. Lipset and Linz are said to have found out that individuals lower in social strata are more susceptible to messages that will enable them to move to the next higher social class.⁷⁵

Educational Achievement: A study by CBS with high school and college students is reported to have shown that college students have more "liberal" views than their high school counterparts. The experiences of a college student had enabled him to broaden his frame of reference more than those of his counterparts who had not gone to college.

Since a persuasive communicator belongs to a specific social class and may possess a certain level of college

education, it means that he has his own frame of reference which may affect his ability to assess the attitudes and beliefs of others. A way out of this dilemma for a persuasive communicator is for him to use data about the attitude and beliefs of a client obtained by others. These data can serve as a gauge of what reaction to expect from the client.

In addition to the influence of the above non voluntary groups to individual's susceptibility to persuasion, the works of Newcomb (1965) and another by Homans (1950) tend to show that membership to voluntary clubs influence one's susceptibility to persuasion. However, it is not all the tenets of such a voluntary social group that an individual will adhere to outside the direct influence of the group.

D. Persuasive Strategies

The following are some persuasive strategies that can be used by a persuader to change the attitudes, beliefs and behavior of a persuadee in a persuasive communication.

1. Show that a desired behavior is approved by an esteemed person or group.
2. Show that a new proposal is consistent or inconsistent with a value premise.
3. Appeal to an alternative value premise, that is, show that a currently held value position is inadequate to solve existing problem and suggest an alternative.

4. Arouse fear in a listener.
5. Present reward or incentive to a persuadee.
6. When the persuadee initially opposes the position advocated, a high credibility source can increase persuasion.
7. Make use of latent persuasive messages, that is, persuasive messages that are not obvious to create an openness to change or receptivity to information about change.
8. Identify favourable and unfavourable reference groups of individuals and invoke these favourable reference groups during a persuasive encounter.
9. Identify the norms of reference groups and invoke these norms to increase the probability that an individual will respond.
10. Create the right atmosphere for invoking a reference group. Providing a persuasive message on politics to an individual watching a wrestling contest may be counter productive.

The above persuasive strategies have their focus on how to induce a change in the beliefs, attitudes and behaviors of a persuadee in a direction predetermined by the persuader. Recently, workers in the field of persuasive communication have devoted their attention to how to induce resistance to change or to persuasive messages directed at inducing change in a

client system. Inducing resistance to persuasion is regarded "as an extension of the persuasive process".⁷⁶ This is because by so doing, the persuader is leading the persuadee to continue with the existing practice. Inducing resistance to change is therefore a way of preserving the status quo and fits into the definition of persuasion. Many of the variables such as self esteem, anxiety level, education that a persuader would use to induce persuasion are thus considered pertinent for inducing resistance to persuasion.

Some of the strategies used to induce resistance to persuasion are:

1. Commitment--Inducing a persuadee to become more committed (through private endorsement, "public endorsement, behavioral commitment, and external commitment") to a belief leads to more resistance to efforts to change the belief.
2. Anchoring--Linking one belief to other beliefs a persuadee already holds is an effective way of inducing resistance to persuasion. Linkages can be made with "accepted values and or goals", with related beliefs on other issues or to individuals or groups.
3. Source derogation--This involves lowering the credibility of a source.
4. Denial--This involves letting the source "deny any responsibility for assertions about attitude issue".

5. Innoculation Approach--This involves providing messages that raise individual's knowledge on a topic in order to render him less vulnerable to future persuasive attacks.
6. Refutational Pretreatments--This is an aspect of inoculation approach. It involves presenting arguments that attack a persuadee's position and refuting these arguments.
7. Role playing--This involves letting the persuadee act the role a persuader would want him to discontinue.
8. Counter attitudinal advocacy--This involves letting the persuadee encode and present a message opposing his point of view.

It has to be pointed out that the following strategies for inducing resistance to persuasion can also be used to increase an individual's susceptibility to persuasion by varying the circumstances of use. For instance, it might be possible to increase a farmer's ability to adopt a new farm technique by letting him play the role of one who has successfully adopted the new technique.

Implication of the Review for the Present Study

This study attempts to determine the various persuasive strategies used by the Agricultural extension workers in Michigan to disseminate new farm techniques to Michigan farmers. Towards this end, a review of the theoretical basis for

persuasion has been done. This is followed by an identification of factors that can lead to effective persuasion as well as different persuasive strategies for getting a change in the belief, attitude and behavior of a client. Recently, workers in persuasive communication have developed strategies for inducing resistance to persuasion. It is the assumption of this study that such strategies can also be used to induce persuasion by changing the circumstances in which they were used.

The different factors essential for effective persuasion as well as the various persuasive strategies so far identified will form the basis for developing the questionnaire to be used for this study. Basically each respondent would be requested to specify the type of strategies used and the factors put into consideration before using such strategies.

CHAPTER THREE

DESIGN OF THE STUDY

The Population

The Agriculture extension unit of the Cooperative extension service of Michigan State University has approximately 52 agriculture extension agents located all over the 83 counties in the state. The population under study consists of these 52 agriculture extension agents.

The Sample

Twenty-five Agriculture extension agents were randomly selected for this study. This constituted 48 percent of the entire population of agriculture extension agents.

The Selection of Sample

A field and campus directory of staff of Cooperative extension service at Michigan State University for 1981 was obtained from the Office of Cooperative Extension Service. This directory contains the names of County directors for each county extension service unit and the names and addresses of extension agents for the 4H, Home Economics, Agriculture and Marketing and Natural Resources and Public Policy divisions.

From this directory, the names of the 52 agriculture extension agents were written down on a piece of paper and serially numbered with the first name in the list representing number one and the last name representing number 52.

A table of random numbers was used to select 25 names from the list of 52.

Development of the Questionnaire

In order to develop the final questionnaire for this study (Appendix C) the researcher identified persuasive strategies used by authorities in the field of Persuasive Communication. These persuasive strategies formed the basis for developing this questionnaire. The aim is to determine the extent to which agriculture extension agents in the State of Michigan apply these strategies for getting their farmers to adopt a new farm technique.

The questionnaire is organized into 6 sections. Section 1 contained statements on farmer characteristics which agricultural extension agents have found useful for persuading farmers to adopt a new farm technique. Section 2 contains statements on some persuasive strategies. Section 3 contains statements on qualities of effective change agent. Section 4 contains statements on methods of communicating information to farmers. Section 5 was to enable the researcher to collect personal data about each agent while Section 6 was to provide each agent an opportunity to make further suggestions about persuasive strategies used to persuade farmers.

Responses to statements in Section 1 are to provide answers to Research Question 1 in this study. Responses to statements in Section 2 are to provide answers to Research Question 2. Responses to statements in Section 3 are to provide answers to Research Question 3 in this study. Responses to statements in Section 4 are to provide answers to Question 4.

Pilot Study

In order to improve the validity of the questionnaire, the Associate Director/Programs of Cooperative Extension Service at Michigan State University posted a letter (Appendix A) to 5 agriculture extension agents in 5 counties. This letter solicited their cooperation to enable the researcher to interview them to determine the persuasive strategies they use to disseminate new farm techniques to farmers. Because of cost and time constraints only 2 extension agents were orally interviewed. A question format used for this oral interview is provided (Appendix B). Questions in this oral interview format were cued to specific research questions in the study.

Respondents during this oral interview had no objection to having the interview taped. Analysis of the taped interviews provided additional data and more clarifications which were used to revise the questionnaire.

The revised questionnaire (Appendix C) was further pre-tested with 3 agents. The revised questionnaire was typed and photocopies produced for distribution.

Administration and Collection of Questionnaire

A letter (Appendix D) from the Associate Director/Programs of Cooperative Extension Service of Michigan State University explaining the purpose of this study was posted along with the revised questionnaire to the 25 selected agricultural agents. A self-addressed and stamped envelope was also enclosed to enable each agent return the completed questionnaire to the researcher.

Of the 25 questionnaires distributed, 21 or 84 per cent were completed and returned to the researcher. The data collected was hand coded and sent to the Scoring Center at Michigan State University for key punching. The punched cards were later sent to the Computer Center at Michigan State University for analysis using the Statistical Package for the Social Sciences (SPSS). This analysis was in the nature of descriptive statistics which was used to describe the frequency, percentage, mean and mode of the responses to the various statements covered in the questionnaire. As the data were in discrete frequency counts and were arranged in categories, chi-square statistics was used to test the null hypothesis at $\alpha = .05$ level of significance. The open-ended questions were also subjected to content analysis for consistency.

CHAPTER FOUR

ANALYSIS OF RESULTS

This analysis is presented in the form of answers to research questions and results of the tested null hypotheses.

Research Question 1

What farmer characteristics do agricultural extension agents in Michigan put into consideration in order to persuade them to adopt a new farm technique?

Table 4.1 presents the frequency and percentage of responses to research question 1. Nine (42.9) percent of agricultural extension agents did not consider the education of farmers to be a factor that determined farmer persuasibility. Seven (33.3) percent found farmers with Bachelor degree to be more easily persuaded. Sixteen (76.2) percent of the agents did not consider farmers who belong to a farmer organization to be more easily persuaded. Nineteen (90.5) percent of the agents considered the interest of farmers towards a new farm technique to be important for persuasion.

TABLE 4.1 FREQUENCY AND PERCENTAGE RESPONSES TO RESEARCH QUESTION 1

	<u>Education of Agents</u>			<u>Experience of Agents</u>			<u>Total</u>		
	<u>Bachelors</u>			<u>1-10 yrs</u>			<u>11 yrs+</u>		
	F	%	F	F	%	F	F	%	F
1. Farmer Education									
Bachelors	3	14.3	4	4	19.0	3	14.3	7	33.3
High School	2	9.5	2	2	9.5	2	9.5	4	19.0
Any Other	0	0.0	1	1	4.8	0	0.0	1	4.8
Education No Difference	4	19.0	5	5	23.8	4	19.0	9	42.9
2. Farmer Organizations									
Disagree	7	35.0	9	10	50.0	6	30.0	16	76.2
Agree	1	5.0	3	2	10.0	2	10.0	4	19.0
3. Farmer Interest									
Disagree	1	4.8	1	1	4.8	1	4.8	2	9.5
Agree	8	38.1	11	11	52.4	8	38.1	19	90.5

Research Question 2

What persuasive techniques do agricultural extension agents in Michigan use to get a new farm technique adopted?

Table 4.2 presents the frequency and percentage of responses to Research Question 2. Two out of 20 respondents (9.5 percent) always show farmers that a new farm technique is familiar with what they are used to doing while 17 (81.0 percent) sometimes use this technique. Eighteen (85.7 percent) always show the relative advantage of a new technique. Eight (38.1 percent) always present a new technique in small packages while 13 (61.9 percent) sometimes do this. Fifteen (71.4 percent) never present money as a reward for adopting a new technique while 6 (28.6 percent) always offer recognition through publicity. Twelve (57.1 percent) use this technique some of the time. Two (9.5 percent) always use an external authority figure while 16 (76.2 percent) sometimes did so. Ten (47.6 percent) always get one or more farmers to use a new technique and demonstrate it to their fellow farmers. Eleven (52.4 percent) sometimes use this technique. Twelve (57.1 percent) always get progressive farmers to use and demonstrate a new technique while 9 (42.9 percent) sometimes use this technique.

Research Question 3

What characteristics of an agricultural extension agent are essential for being an effective extension agent.

TABLE 4.2 FREQUENCY AND PERCENTAGE RESPONSES TO RESEARCH QUESTION 2.

	Education of Agents				Experience of Agents				Total	
	Bachelors		Masters		1-10 yrs		11 yrs+			
	F	%	F	%	F	%	F	%	F	%
<hr/>										
1. Familiarity of New Technique										
Never	0	0.0	1	5.0	1	5.0	0	0.0	1	4.8
Sometimes	8	40.0	9	45.0	10	50.0	7	35.0	17	81.0
Always	0	0.0	2	10.0	1	5.0	1	5.0	2	9.5
2. Relative Advantage of a New Technique										
Never	0	0.0	1	4.8	1	4.8	0	0.0	1	4.8
Sometimes	1	4.8	1	4.8	1	4.8	1	4.8	2	9.5
Always	8	38.1	10	47.6	10	47.6	8	38.1	18	85.7
3. Presenting new technique in small packages										
Never	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sometimes	5	23.8	8	38.1	8	38.1	5	23.8	13	61.9
Always	4	19.0	4	19.0	4	19.0	4	19.0	8	38.1
4. Offering monetary reward to farmers										
Never	4	19.0	11	52.4	7	33.3	8	38.1	15	71.4
Sometimes	3	14.3	0	0.0	2	9.5	1	4.8	3	14.3
Always	2	9.5	1	4.8	3	14.3	0	0.0	3	14.3
5. Offering recognition to adopters										
Never	2	9.5	1	4.8	3	14.3	0	0.0	3	14.3
Sometimes	5	23.8	7	33.3	6	28.6	6	28.6	12	57.1
Always	2	9.5	4	19.0	3	14.3	3	14.3	6	28.6
6. Inviting External Authority										
Never	1	4.8	2	9.5	1	4.8	2	9.5	3	14.3
Sometimes	7	33.3	9	42.9	9	42.9	7	33.3	16	76.2
Always	1	4.8	1	4.8	2	9.5	0	0.0	2	9.5
7. Getting one or more farmers to use and demonstrate a new technique										
Never	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sometimes	4	19.0	7	33.3	7	33.3	4	19.0	11	52.4
Always	5	23.8	5	23.8	5	23.8	5	23.8	10	47.6
8. Getting a progressive farmer to use and demonstrate a new technique										
Never	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sometimes	4	19.0	7	33.3	6	28.6	3	14.3	9	42.9
Always	5	23.8	5	23.8	6	28.6	6	28.6	12	57.1

Table 4.3 presents frequency and percentage responses to Research Question 3. The most outstanding characteristic which an extension agent should possess is trustworthiness. Ninety-five (95.2) percent respondents are of the opinion that an agricultural extension agent should be trustworthy. Fourteen (66.7 percent) think an agent has to be open-minded always. Seven (33.3 percent) think an agent has to be open minded most of the time. Twelve (57.1 percent) think an agent must be patient while dealing with farmers. Nine (42.9 percent) think an agent has to be patient most of the time. Only 9 (42.9 percent) think an agent has to be always knowledgeable while 12 (57.1 percent) think knowledgeability is an important characteristic for an agent most of the time. Eight (38.1 percent) think an agent has to be flexible always while 12 (57.1 percent) think an agent has to be flexible most of the time. Seven (33.3 percent) think an agent must like farming always while 12 (57.1 percent) think an agent has to like farming most of the time.

Research Question 4

What various types of media have agricultural extension agents in Michigan found effective for persuading farmers to use a new farm technique?

Table 4.4 presents frequency and percentages of responses to Research Question 4. The most effective means of persuading farmers is the person-to-person contact. Twenty (95.2 percent) of respondents agreed that this was the most

TABLE 4.3 FREQUENCY AND PERCENTAGE RESPONSES TO RESEARCH QUESTION 3

	<u>Education of Agents</u>				<u>Experience of Agents</u>					
	<u>Bachelors</u>		<u>Masters</u>		<u>1-10 yrs</u>		<u>11 yrs+</u>		<u>Total</u>	
	F	%	F	%	F	%	F	%	F	%
<hr/>										
1. An agent must be trust-worthy										
Never	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sometimes	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Most of the time	1	4.8	0	0.0	0	0.0	1	4.8	1	4.8
Always	8	38.1	12	57.1	12	57.1	8	38.1	20	95.2
2. An agent has to be knowledgeable										
Never	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sometimes	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Most of the time	6	28.6	6	28.6	5	23.8	7	33.3	12	57.1
Always	3	14.3	6	28.6	7	33.3	2	9.5	9	42.9
3. An agent must like farming										
Never	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sometimes	1	4.8	2	9.5	2	9.5	0	0.0	2	9.5
Most of the time	6	28.6	6	28.6	5	23.8	7	33.3	12	57.1
Always	3	14.3	4	19.0	5	23.8	2	9.5	7	33.3
4. An agent must be flexible										
Never	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sometimes	1	4.8	0	0.0	1	4.8	0	0.0	1	4.8
Most of the time	6	28.6	6	28.6	7	33.3	5	23.8	12	57.1
Always	2	9.5	6	28.6	4	19.0	4	19.0	8	38.1
5. An agent must be patient										
Never	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sometimes	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Most of the time	5	23.8	4	19.0	5	23.8	4	19.0	9	42.9
Always	4	19.0	8	38.1	7	33.3	5	23.8	12	57.1
6. An agent must be open minded										
Never	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sometimes	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Most of the time	5	23.8	2	9.5	4	19.0	3	14.3	7	33.3
Always	4	19.0	10	47.6	8	38.1	6	28.6	14	66.7

TABLE 4.4 FREQUENCY AND PERCENTAGE RESPONSES TO RESEARCH QUESTION 4

	<u>Education of Agents</u>				<u>Experience of Agents</u>				Total	
	<u>Bachelors</u>		<u>Masters</u>		<u>1-10 yrs</u>		<u>11 yrs+</u>			
	F	%	F	%	F	%	F	%	F	%
<hr/>										
1. Person to person contact										
Least effective	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mod. effective	1	4.8	0	0.0	0	0.0	1	4.8	1	4.8
Most effective	8	38.1	12	57.1	12	57.1	8	38.1	20	95.2
2. Use of workshops										
Least effective	1	4.8	0	0.0	0	0.0	1	4.8	1	4.8
Mod. effective	6	28.6	9	42.9	10	47.6	5	23.8	15	71.4
Most effective	2	9.5	3	14.3	2	9.5	3	14.3	5	23.8
3. Use of newspaper articles										
Least effective	1	4.8	4	19.0	3	14.3	2	9.5	5	23.8
Mod. effective	8	38.1	8	38.1	9	42.9	7	33.3	16	76.2
Most effective	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4. Use of monthly newsletter										
Least effective	1	4.8	0	0.0	0	0.0	1	4.8	1	4.8
Mod. effective	7	33.3	11	52.4	11	52.4	7	33.3	18	85.7
Most effective	1	4.8	1	4.8	1	4.8	1	4.8	2	9.5
5. Use of demonstration plots										
Least effective	1	4.8	0	0.0	0	0.0	1	4.8	1	4.8
Mod. effective	3	14.3	3	14.3	5	23.8	1	4.8	6	28.6
Most effective	5	23.8	9	42.9	7	33.3	7	33.3	14	66.7
6. Use of radio announcements										
Least effective	1	4.8	6	28.6	3	14.3	4	19.0	7	33.3
Mod. effective	8	38.1	6	28.6	9	42.9	5	23.8	14	66.7
Most effective	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7. Use of Radio discussion groups										
Least effective	2	9.5	6	28.6	4	19.0	4	19.0	8	38.1
Mod. effective	6	28.6	6	28.6	8	38.1	4	19.0	12	57.1
Most effective	1	4.8	0	0.0	0	0.0	1	4.8	1	4.8
8. Use of television spots										
Least effective	3	14.3	6	28.6	6	28.6	3	14.3	9	42.9
Mod. effective	6	28.6	6	28.6	6	28.6	6	28.6	12	57.1
Most effective	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9. Use of television reports										
Least effective	3	14.3	4	19.0	4	19.0	3	14.3	7	33.3
Mod. effective	6	28.6	6	28.6	8	38.1	4	19.0	12	57.1
Most effective	0	0.0	2	9.5	0	0.0	2	9.5	2	9.5
10. Use of television demonstration										
Least effective	3	14.3	4	19.0	4	19.0	3	14.3	7	33.3
Mod. effective	5	23.8	4	19.0	5	23.8	5	23.8	10	47.6
Most effective	0	0.0	4	19.0	3	14.3	1	4.8	4	19.0

effective means of persuading farmers. This is followed by the use of demonstration plots in 2 or 3 farms. Fourteen (66.7 percent) of respondents agreed use of demonstration plots is the most effective means of persuading farmers to adopt a new farm technique. The following means of communication are considered to be moderately effective: use of monthly newsletter (85.7 percent); use of newspaper articles (76.2 percent); use of workshop (71.4 percent); use of radio announcements (66.7 percent); use of radio discussion groups (57.1 percent); use of T.V. spots (57.1 percent); use of T.V. reports (57.1 percent); and use of T.V. demonstration (47.6 percent).

The following null hypotheses were tested at .05 level of significance.

General Hypothesis I

Agriculture extension agents in Michigan have not found any type of persuasive strategy effective in persuading farmers to adopt a new farm technique.

Operational Hypotheses

1.a There is no relationship between the education of an agricultural extension agent in Michigan and the type of persuasive strategies agents use.

1.b There is no relationship between the level of experience of an agricultural extension agent in Michigan and the type of persuasive strategies agents use.

Table 4.5 presents a chi-square result of the test of the null hypotheses 1a and 1b at $\alpha .05$ level of significance. This result shows that the null hypotheses are accepted in all cases except one. Thus there is no relationship between the education and level of experience of agriculture extension agents and the type of persuasive strategies they use to persuade farmers. The chi-square analysis shows a relationship between the education of extension agents and the use of monetary rewards to farmers.

General Hypothesis 2

Agricultural extension agents in Michigan do not consider any agent characteristics essential for being an effective persuader.

Operational Hypotheses

2.a There is no relationship between the education of an agricultural extension agent in Michigan and perceived agent characteristics for being an effective persuader.

2.b There is no relationship between the level of experience of an agricultural extension agent in Michigan and perceived agent characteristics for being an effective persuader.

Results presented in Table 4.6 show that the null hypotheses are accepted in all cases. Therefore one can say that there is no relationship between the education and level of

TABLE 4.5 STATISTICAL TABLE OF THE RESULTS OF NULL HYPOTHESES 1a AND 1b

Characteristics	n	EDUCATION OF AGENTS			LEVEL OF EXPERIENCE OF AGENTS				
		X ²	df	P	Decision	X ²	df	P	Decision
1. To persuade farmers I show that a new technique is familiar with what they are used to doing before	20	2.353	2	.308	Accepted	.759	2	.684	Accepted
2. To persuade farmers I show the relative advantage of a new technique	21	.810	2	.667	Accepted	.810	2	.667	Accepted
3. Presenting a new technique in small packages at a time enhances chances of persuasion.	21	.269	1	.604	Accepted	.269	1	.604	Accepted
4. To ensure adoption of a new farm technique I offer monetary rewards.	21	6.3	2	.043	Rejected	3.033	2	.219	Accepted
5. I offer recognition to farmers who have adopted a new technique by publicizing their achievements.	21	.924	2	.630	Accepted	2.625	2	.269	Accepted
6. To persuade farmers I invite an external authority to demonstrate the new technique	21	.158	2	.924	Accepted	2.199	2	.333	Accepted
7. To persuade farmers I get one or more of the farmers to use a new technique and demonstrate it to his colleagues	21	.398	1	.528	Accepted	.398	1	.528	Accepted
8. To persuade farmers I get progressive farmers to use a new technique and demonstrate it to their colleagues	21	.016	1	.899	Accepted	.583	1	.445	Accepted

TABLE 4.6 STATISTICAL TABLE OF THE RESULTS OF NULL HYPOTHESES 2a AND 2b

Characteristics	n	EDUCATION OF AGENTS			LEVEL OF EXPERIENCE OF AGENTS				
		χ^2	df	P	Decision	χ^2	df	P	Decision
1. An extension agent has to be trustworthy	21	1.4	1	.237	Accepted	1.4	1	.237	Accepted
2. An extension agent has to be knowledgeable in his field	21	.582	1	.445	Accepted	2.738	1	.098	Accepted
3. An extension agent has to like farming	21	1.75	2	.417	Accepted	3.257	2	.196	Accepted
4. An extension agent has to have the flexibility to do what is best for his farmers	21	2.625	2	.269	Accepted	.924	2	.630	Accepted
5. An extension agent has to be patient with his farmers	21	1.037	1	.308	Accepted	.016	1	.899	Accepted
6. An extension agent has to be open minded while dealing with farmers	21	3.5	1	.061	Accepted	.000	1	1.00	Accepted

experience of agriculture extension agents and agent characteristics deemed essential for being an effective extension agent.

General Hypothesis 3

Agricultural extension agents in Michigan have not found any particular means of communication more effective than others.

Operational Hypotheses

3.a There is no relationship between the education of an agricultural extension agent in Michigan and the type of media used for persuading Michigan farmers.

3.b There is no relationship between the level of experience of agricultural extension agent in Michigan and the type of media used for persuading Michigan farmers.

Results presented in Table 4.7 indicate that the null hypotheses are accepted in all cases. Thus there is no significant relationship between the level of education and the level of experience of an agricultural extension agent and the type of media found effective for persuading Michigan farmers.

TABLE 4.7 STATISTICAL TABLE OF THE RESULTS OF NULL HYPOTHESES 3a AND 3b

Characteristics	EDUCATION OF AGENTS			LEVEL OF EXPERIENCE OF AGENTS		
	n	x ²	df	P	Decision	x ² df P Decision
1. Person to person contact with individual farmers	21	1.4	1	.237	Accepted	1.4 1 .237 Accepted
2. Workshops with supporting media presentations	21	1.4	2	.496	Accepted	2.489 2 .288 Accepted
3. Use of newspaper articles	21	1.4	1	.237	Accepted	.022 1 .882 Accepted
4. Use of monthly newsletter	21	3.305	2	.191	Accepted	1.491 2 .474 Accepted
5. Use of demonstration plots in 2 or 3 farms	21	1.75	2	.417	Accepted	3.305 2 .192 Accepted
6. Use of radio announcements	21	3.5	1	.061	Accepted	.875 1 .349 Accepted
7. Use of radio discussion groups	21	2.625	2	.269	Accepted	1.944 2 .378 Accepted
8. Use of T.V. spots	21	.583	1	.445	Accepted	.583 1 .445 Accepted
9. Use of T.V. reports of successes	21	1.75	2	.417	Accepted	3.111 2 .211 Accepted
10. Use of T.V. demonstrations	21	4.2	2	.122	Accepted	.729 2 .694 Accepted

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Interest in the present study was triggered off by a realization that inadequate food supply posed a serious problem to many "developing" countries. Despite efforts by agricultural research institutes both in the "developed" and the "developing" countries, food shortage continues in these "developing" countries. An assumption of this study is that one of the many factors that could account for this continued food shortage is inadequate knowledge of persuasive strategies by agricultural extension agents from "developing" countries for persuading their farmers to use a new farm technology.

The picture is different in the State of Michigan where the "accumulative state allocations for agricultural research and extension from 1888 to 1980" amounts to "\$272 million" whereas the estimated income was "\$460 million" "for a select group of 13 Michigan agricultural commodities". In addition to other factors, such gains can be attributed to the use of effective persuasive strategies by her agricultural extension agents.

Persuasive strategy constitutes an element of many "innovation-decision" models. Others are "re-educational," "facilitative," and "power" strategies. However, the importance attached to persuasive strategy can be found in the words of Zaltman and Duncan (1977) which states that:

all messages transmitted from a source to a receiver are persuasive in nature.

This study is exploratory in nature and is designed to determine farmer characteristics, agent characteristics, types of persuasive strategies and types of media used by agricultural extension agents in Michigan to persuade their farmers to use a new farm technology. It is hoped that strategies identified can be adapted for conducting similar studies in developing countries and for developing a program for training their agricultural extension agents.

Four research questions and 3 general and 6 operational null hypotheses guided this study.

In order to develop the instrument for examining the research questions the author reviewed some pertinent literature and identified elements of persuasive strategies. These elements formed the basis for developing the questionnaire used for this study. These elements formed the dependent variables in this study and were organized in four sections. Section one provided answers to research question one which was about farmer characteristics; section two provided answers to research two which was on some persuasive techniques; section three provided answers in research question three which was on agent characteristics while section

four provided answers to research question four which was on types of media.

Two independent variables--extension agent education and level of experience--were examined in this study. Section five of the questionnaire enabled extension agents to provide information about their education and level of experience. Finally section six of the questionnaire provided space for additional information on persuasive strategies an extension agent might provide.

The six null hypotheses were tested at .05 level of significance using chi-square statistics.

The questionnaire was validated through pilot testing with some extension agents.

Limitations of the Study

Before a discussion of the results of this thesis can be undertaken a major problem pertaining to the obtained data on the independent variables and its effect on the result must be noted. It was hypothesized that the education and level of experience of extension agents will not have any effect on their responses to the dependent variables in the questionnaire. Analysis of the personal data provided by the extension agents showed that out of the 21 extension agents 19 have Bachelor's degree while only 2 have Bachelors and Masters degrees. Thus there is no variability in the education of the extension agents.

The same observation may be made with regard to the level of experience. While 12 respondents fall within the category of 1-10 years of experience and 9 respondents fall within the category of 11+ years of experience, it may be that the critical point for the impact of experience may be much earlier than 10 years.

Major Findings and Conclusions

The following are the major findings in this study:

1. Farmer interest in a new farm technology is the most crucial characteristic that will ensure his persuasibility. This characteristic is considered more important than farmer education or membership to farmer organization. It is also considered more important than offering monetary reward or offering recognition to farmers through publicizing their achievements in papers. Interviews conducted with some extension agents revealed that some farmers do not want any publicity but will try a new farm practice if they realize they will make some profit.

Few empirical studies have assessed the effect of organization on attitude change. However, those by Newcomb and Homans are cited by Bettinghaus (1966) as showing that "social groups serve to direct decision-making about persuasive messages". The findings of this study where 76.2 percent of extension agents did not consider farmers who belong to a farmer organization to be more easily persuaded seem to be a contradiction of this contention. Part of this

contradiction could be the difference between formal and informal organization.

2. The relative advantage of a new farm practice is another important factor that can enhance farmer persuasibility. This supports the opinion expressed by extension agents that a farmer will try a new farm practice if he realizes the profit he will make by embarking on the new farm practice. Relative advantage is an important characteristic of an innovation which Rogers and Shoemaker (1971) identified as being essential for an innovation to be adopted. This finding is therefore consistent with what obtains in the literature.

3. Getting a progressive farmer to use and demonstrate a new farm practice is considered an important factor that can enhance farmer persuasibility. This is considered more important than getting one or more farmers to do this. This study however did not indicate whether progressive farmers are opinion leaders neither did it indicate the criteria for identifying progressive farmers. But the fact that progressive farmers are preferred over any farmer indicates that progressive farmers possess some attributes which can be identified in future studies.

4. An important agricultural extension agent characteristic is his trustworthiness. This is followed by his ability to be open minded and patient in dealing with farmers. These take precedence over such other characteristics as

extension agent knowledgeability, flexibility and ability to like farming.

Trustworthiness and "expertness" are some of the "source" qualities which "receivers" of information consider important in any persuasive encounter. This study indicates that agricultural extension agents who are regarded as "sources" of new farm technologies to farmers also consider this quality important. The nature of the work of an agricultural extension agent explains why trustworthiness is considered an important quality. Agricultural Extension agents are seen as resource linker by farmers and not as supervisors or auditors. An extension agent persuades a farmer and does not lure him through any form of coercion. A farmer has to have some trust in an agent to divulge his problems to him in the belief that an agent will not betray him. By not playing a dual role, an agent can augment this trust in subsequent encounters with a farmer.

Almost half of the agricultural extension agents surveyed (42.9 percent) feel that an agent has to be knowledgeable always to be effective while 57.1 percent think that an agent has to be knowledgeable most of the time. Knowledgeability is a quality considered important for a source of information. However, a realization that expert knowledge can be easily obtained from experts in the agricultural experimental stations may have influenced this response by agricultural extension agents.

As regards the quality of being patient, it would appear that a realization that a new farm practice takes time

to be fully accepted may be the reason why agents consider this as an important agent quality.

5. The most effective methods of communicating a new farm practice to farmers is person to person contact. This is followed by the use of demonstration plots. Use of newspaper, newsletter, workshops and radio announcements are considered to be moderately effective. Use of television is considered a least effective means of persuading farmers to use a new farm technology. One of the reasons suggested for not using television is cost.

6. Only in one instance in the study was the null hypothesis rejected. This rejection indicates that there is a relationship between the education of an agricultural extension agent and the offering of money as incentive for using a new farm practice. Results of the percentage analysis for this dependent variable however showed that 15 (71.4 percent) of the extension agents never offered money as an incentive.

The rest of the chi-square analyses indicate that the null hypotheses are accepted. It would seem there are other intervening variables that affect the perceptions of agricultural extension agents outside their education and level of experience. Other reasons are as presented in the limitations of findings.

Recommendations

Based on the findings of this study, it can be seen that farmer interest in a new farm practice is the most important factor an extension agent has to solicit for to ensure farmer persuasibility. Presenting farmers with monetary rewards and publicizing farmer achievements in papers have not been found to enhance farmer persuasibility. However, showing a farmer the profitability of a new farm practice does. It is therefore suggested that extension agents determine in what ways a new farm practice can be profitable to a farmer so that this information can be incorporated in the in-service training workshops.

Even though extension agents do not think that belonging to farmer organizations enhances farmer persuasibility, the importance of formal and non-formal groups in modifying member attitudes and behaviours has been documented by Bettinghaus (1966). It is therefore important for the extension agents to consider establishing such farmer organizations and use this as a means of winning acceptance of a new farm practice. Since demonstrations by progressive farmers are known to enhance farmer persuasibility, getting such progressive farmers to be members of these farmer organizations can improve the chances of persuading other farmers to try a new farm practice.

It is also suggested that extension agents be exposed to persuasive strategies. This can be a part of their

in-service training on how to be effective change agents.

It is also suggested that extension agents be encouraged to make more use of radio in persuading farmers to try a new farm practice. Use of radio has been found effective in the adoption of new technologies in other countries like Mexico, Guatamala, etc. Use of radio can be augmented by the multi media approach.

Suggestions for Future Research

1. Since using a selected sample of agricultural extension agents in Michigan it was found that there is no relationship between the education and level of experience of these extension agents and the persuasive strategies they use, it is suggested that a similar study be conducted using the entire population of agricultural extension agents.

2. A similar study is being suggested using farmers in Michigan. Such a study can embrace other variables such as size of farm, membership to farmer organizations, location of farms, sex, age and education of farmers.

3. A content analysis of training programs on persuasion for agricultural extension agents and how this relates with the practice of agricultural extension agents in the field is also proposed.

4. A study to determine farmer perception of the characteristics of an effective agricultural extension

agent including style of operation is also being proposed.

5. It is suggested that an observatory/interview study of the activities of different agricultural extension agents working with different categories of farmers be conducted to determine factors they consider in dealing with farmers.

Implications of This Research for a Developing Country

Agricultural activities in many developing countries are highly centralized in a Ministry of Agriculture. There are many agricultural research institutes that serve as organs of the Ministry of Agriculture. In addition are colleges of agriculture in all universities. To avoid duplication of efforts, it is suggested that resources in the various colleges of agriculture be incorporated into the research activities of these agricultural research institutes. A proper definition of communication rules should help to overcome the problem of animosity arising from a struggle for ownership of projects. Inputs from personnels of food production and food services units should also be utilized in the activities of the various research institutes.

2. It is suggested that the functions of the agricultural extension agents be confined to that of education and facilitation. The functions of control and supervision can be delegated to officers in the other departments.

3. A training program for agricultural officers and extension officers should be instituted. Such topics as strategies for innovation-decision process models, improving human relations, developing objectives and performance standards, managing stress, developing leadership styles, persuasive strategies can form the contents of this training program.

4. It is suggested that secondary schools be encouraged to start farm clubs and a unit of this be established in the ministry.

The following additional studies are suggested:

1. A network analysis to identify channels of communication existing among agricultural research institutes, colleges of agriculture and among these and farmers. This study is to identify causes of noise, overload and underload in these communication channels and recommend remedial actions if a cause is identified.

2. An observatory/interview/questionnaire study of agricultural extension agents at work with farmers including a determination of factors that hinder or promote effective application of new farm practices.

3. A study of agricultural extension agent self role perception and farmer perceptions of extension agents role and the influence of these on extension agent performance.

APPENDIX A

COOPERATIVE
EXTENSION
SERVICE

MICHIGAN STATE UNIVERSITY • U.S. DEPARTMENT OF AGRICULTURE & COUNTIES COOPERATING
OFFICE OF THE DIRECTOR • EAST LANSING, MICHIGAN 48824

August 11, 1981

MEMO TO: Jack Gergen, Barry County
Charles Cooper, Jackson
George McQueen, Clinton
Jim Pelham, Hillsdale
Jim Hutchinson, Lapeer

FROM: Ray Gillespie, Associate Director/Programs

RE: Interview with Hyacinth Dike

Mr. Dike, a graduate student in Communications from Nigeria, would like to visit with a few Agricultural Extension Agents. His objective is to learn how you strategize communications with farmers. Would you be willing to spend an hour or so with him?

Thinking that you will probably agree I have given him your name and phone number. He will call you to set up a time for such a visit. Thanks in advance for making this contribution to international education.

lb

cc: Mr. Dike, 1626 H. Spartan Village
Mr. Madaski
Mr. Thorburn

APPENDIX B

INTERVIEW FORMAT

I am a Nigerian working towards my M.A. degree in Communication at M.S.U. A major problem confronting Nigeria and other "developing" countries is scarcity of food to feed their rapidly increasing population. The food situation is different here in U.S. which exports food to many countries of the world. Much of U.S. self sufficiency in food production have been attributed to her efficient agricultural extension service. This is why I am conducting this survey study to determine the persuasive strategies you use for getting new farm practices adopted by your farmers.

1. Since you have a lot of experience in your work, may I know how long you have been working as an agricultural extension officer in Michigan or outside the State of Michigan?
2. May I know your educational qualifications?
3. Are there any special trainings/workshops that have enhanced your performance in the field as an extension officer?
4. How regular are you exposed to such trainings/workshops?
5. Let's assume you have a new farm practice you intend to sell to your Poultry farmers. What farmer characteristics determine the persuasive strategies you use to get them to adopt this new practice?

6. If I understand you clearly, the _____ of a farmer influences the persuasive strategy you would use. Can you expatiate on this point?
7. What types of support do you present to farmers to help them make up their minds about the new practice?
8. What characteristics of a new farm practice do you present to farmers to help them adopt the new practice?
9. Are there any characteristics of an extension officer that makes him/her more effective in persuading a farmer to adopt a new farm practice?
10. What types of rewards do you provide to your farmers to ensure adoption of a new farm practice?
11. Do you provide different rewards to different classes of farmers?
12. Can you elaborate on this please?
13. How do you ensure that farmers will continue to use the new farm practice when you have left?
14. What do you do if a farmer raises an objection about a new farm practice?
15. What types of media have you found useful in getting a new practice adopted?
16. Have you found a particular type of media more useful with any particular group/groups of farmers?

APPENDIX C

Department of Communication
Michigan State University
1626 H Spartan Village
East Lansing, MI 48823
Phone: 517-355-9909

September 1981

Dear Colleague:

MASTER'S DISSERTATION QUESTIONNAIRE

I am a Nigerian working towards my Masters degree in Communication at Michigan State University. I need your help to develop a program that can be used by extension agents in my country to disseminate information about new farm techniques to farmers.

A major problem confronting many "developing" countries is inadequate food supply to feed their rapidly increasing population. Many of these countries have embarked on numerous agricultural projects aimed at improving this food problem. For instance, many research institutes are springing up and concentrating their efforts on finding new farm techniques that can be of use to local farmers.

However, evolving new farm techniques will not make much impact on food production if farmers are not persuaded to adopt such new farm techniques.

I know that much of the success of the State of Michigan in food production can be attributed to her excellent Extension Service which helps to disseminate new ideas to her farmers. This is why I want to benefit from your rich experience. Specifically, I am interested in finding out what persuasive strategies you use to get your farmers to adopt new farm techniques. Towards this end, I am conducting this study entitled:

A STUDY OF PERSUASIVE STRATEGIES ADOPTED BY THE
AGRICULTURAL EXTENSION WORKERS IN MICHIGAN TO
DISSEMINATE NEW FARM TECHNIQUES TO MICHIGAN FARMERS

This study is a requirement for my Master's degree in the Department of Communication, at Michigan State University. I would, therefore, appreciate having you complete the attached questionnaire aimed at determining the persuasive strategies you use with your farmers.

Page 2

Knowing how busy you are, this questionnaire has been structured so as not to take more than 15-30 minutes of your time. The result of this study will be made available to you through Dr. Ray Gillipsie.

Many thanks for your cooperation.

Yours truly,

Hyacinth I. Dike

THE QUESTIONNAIRE

Introduction

This questionnaire contains statements on strategies that you can use to persuade a particular category of farmers (e.g. Poultry farmers, Dairy farmers, Grain growers, etc.) to adopt a new farm technique. There are 6 sections in the questionnaire.

SECTION 1:

Section 1 contains statements on farmer characteristics that you have found useful in trying to persuade them to adopt a new farm technique.

1. Given a new farm technique for a particular group of farmers, I have found farmers with the following educational qualification to be easily persuaded to adopt a new farm technique:

- a. Bachelor's degree
- b. High School diploma
- c. Any other, please specify _____
- d. Educational qualification does not make a difference.

2. Please indicate whether you agree or disagree with the following:

- a. Farmers who belong to certain farmer organizations are easily persuaded to adopt a new farm technique

Agree

Disagree

- b. If you agreed with statement number 2a, please specify which organizations. _____

- c. The level of interest a farmer has towards a new farm technique determines his susceptibility to persuasion.

Agree

Disagree

- d. In the space provided below, please provide any other farmer characteristics that determine their susceptibility to persuasion.

SECTION II:

This section contains statements on some persuasive strategies you use to get a new farm technique accepted. Indicate by marking an (X) on the rating scale the extent to which you use each strategy.

- | | | | |
|--|---------------|------------------|--------------|
| 1. To persuade farmers I show that a new technique is familiar with what they are used to doing before | <u>Always</u> | <u>Sometimes</u> | <u>Never</u> |
| 2. To persuade farmers I show the relative advantage of a new technique compared with what they are used to | <u>Always</u> | <u>Sometimes</u> | <u>Never</u> |
| 3. Presenting a new technique in small packages at a time enhances chances of persuading a farmer to adopt it. | <u>Always</u> | <u>Sometimes</u> | <u>Never</u> |
| 4. To ensure adoption of a new farm technique I offer monetary rewards to farmers | <u>Always</u> | <u>Sometimes</u> | <u>Never</u> |
| 5. I offer recognition to farmers who have adopted a new technique by publicizing their achievements | <u>Always</u> | <u>Sometimes</u> | <u>Never</u> |
| 6. To persuade farmers I invite an external authority to demonstrate the new technique | <u>Always</u> | <u>Sometimes</u> | <u>Never</u> |

7. To persuade farmers
I get one or more of
the farmers to use a
new technique and
demonstrate it to his
colleagues

AlwaysSometimesNever

8. To persuade farmers
I get progressive
farmers to use a new
technique and demon-
strate it to their
colleagues

AlwaysSometimesNever

SECTION 3:

This section attempts to find out qualities of an extension agent. Indicate by marking an (X) in the rating scale provided the extent to which you consider the following qualities of an extension agent essential for him/her to be effective.

1. An extension
agent has to
be trustworthy

AlwaysMost of
the timeSometimesNever

2. An extension
agent has to
be knowledge-
able in his
field

AlwaysMost of
the timeSometimesNever

3. An extension
agent has to
like farming

Very
MuchA lotQuite a
LotDoesn't
Matter

4. An extension agent has to have the flexibility to do what he thinks is best for his farmers
- | | | | |
|---------------|-------------------------|------------------|--------------|
| <u>Always</u> | <u>Most of the time</u> | <u>Sometimes</u> | <u>Never</u> |
|---------------|-------------------------|------------------|--------------|
5. An extension agent has to be patients with his farmers
- | | | | |
|---------------|-------------------------|------------------|--------------|
| <u>Always</u> | <u>Most of the time</u> | <u>Sometimes</u> | <u>Never</u> |
|---------------|-------------------------|------------------|--------------|
6. An extension agent has to be open minded while dealing with farmers
- | | | | |
|---------------|-------------------------|------------------|--------------|
| <u>Always</u> | <u>Most of the time</u> | <u>Sometimes</u> | <u>Never</u> |
|---------------|-------------------------|------------------|--------------|
7. In the space provided below, please provide any other qualities an agent must possess.

SECTION 4:

Below are statements on methods of communicating information to your farmers. Indicate by marking an (X) in the rating scale provided the extent to which you consider the following means of communication effective in persuading your farmers to adopt a new farm technique

1. Person to person contact with individual farmers	<u>Most effective</u>	<u>Moderately effective</u>	<u>Least effective</u>
2. Workshops with supporting media presentations	<u>Most effective</u>	<u>Moderately effective</u>	<u>Least effective</u>
3. Use of newspaper articles	<u>Most effective</u>	<u>Moderately effective</u>	<u>Least effective</u>
4. Use of monthly newsletter	<u>Most effective</u>	<u>Moderately effective</u>	<u>Least effective</u>
5. Use of demonstration plots in 2 or 3 farms	<u>Most effective</u>	<u>Moderately effective</u>	<u>Least effective</u>
6. Use of radio announcements	<u>Most effective</u>	<u>Moderately effective</u>	<u>Least effective</u>
7. Use of radio discussion group	<u>Most effective</u>	<u>Moderately effective</u>	<u>Least effective</u>
8. Use of television:			
a. Spots	<u>Most effective</u>	<u>Moderately effective</u>	<u>Least effective</u>
b. reports of successes	<u>Most effective</u>	<u>Moderately effective</u>	<u>Least effective</u>
c. Reports of how-to-do-something	<u>Most effective</u>	<u>Moderately effective</u>	<u>Least effective</u>

9. In the space provided below please provide any other mode of communication you have found effective.

SECTION 5:

Finally, I would like to know just a little about you so that I can see how different agents feel about the issues I am examining. Please supply the following information:

1. Years of experience as an agricultural extension agent: _____
 2. Your academic qualifications _____
 3. Any specialized training as an agent _____
-

SECTION 6:

Any other suggestions:

THANK YOU FOR YOUR COOPERATION!

APPENDIX D

**COOPERATIVE
EXTENSION
SERVICE**

MICHIGAN STATE UNIVERSITY · U.S. DEPARTMENT OF AGRICULTURE & COUNTIES COOPERATING
OFFICE OF THE DIRECTOR · EAST LANSING, MICHIGAN 48824

September 25, 1981

MEMO TO: Selected Agricultural Agents
FROM: J. Ray Gillespie, Associate Director/Programs
RE: Communication Questionnaire

This will introduce a questionnaire in behalf of Mr. Dike, a graduate student in Communications from Nigeria. I have visited with him three times about his study and would like to solicit your cooperation in sharing your thoughts and experiences with him by completing the relatively short survey form.

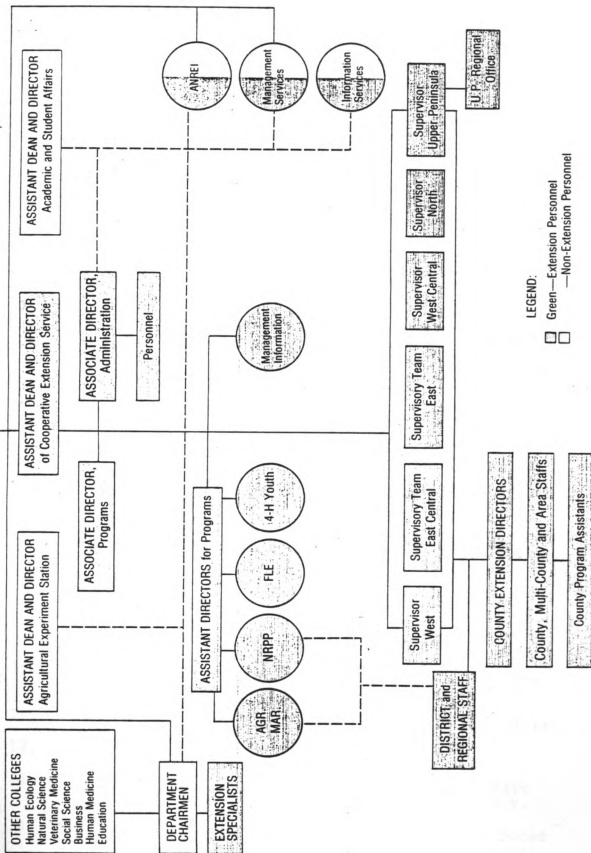
You may chalk it up to International work since Mr. Dike is working as an agent in his country and will use this information directly in his work. You may find that it will stretch your thinking in an area or two.

Thanks for your timely consideration.

1b

APPENDIX E

DEAN, COLLEGE OF AGRICULTURE AND NATURAL RESOURCES



LEGEND:

- ☐ Green—Extension Personnel
☐ —Non-Extension Personnel

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