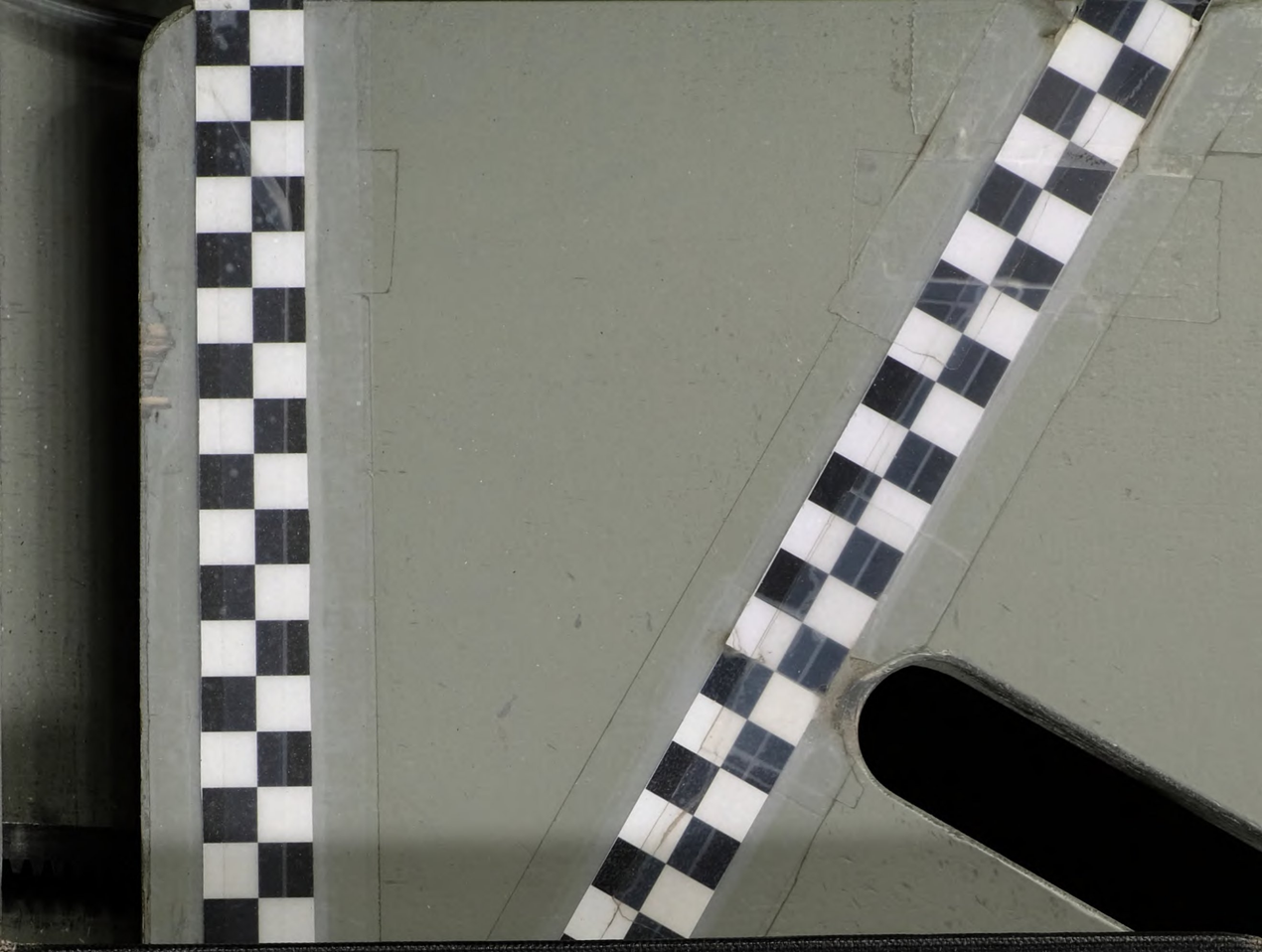

LEADERSHIP AND COMMUNICATION IN THE COLLECTIVE ADOPTION PROCESS OF DEVELOPMENT ASSOCIATIONS IN EASTERN NIGERIA

Thesis for the Degree of Ph. D.
MICHIGAN STATE UNIVERSITY
GRAHAM B. KERR
1970

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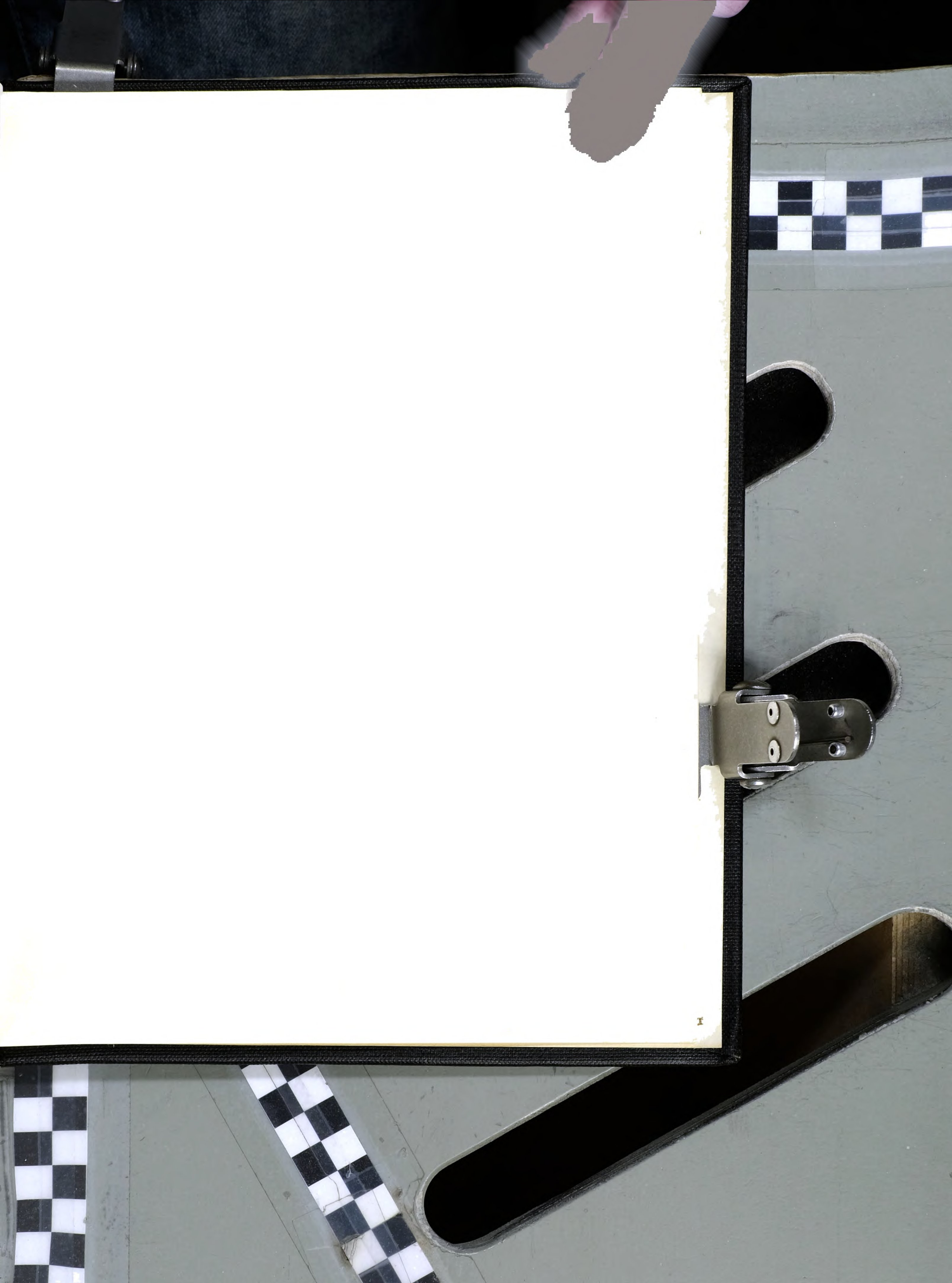



Accepted by the faculty of the Department of Communication, College of Communication Arts, Michigan State University, in partial fulfillment of the requirements for the Doctor of Philosophy degree.

Director of Thesis

Guidance Committee:

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ABSTRACT

LEADERSHIP AND COMMUNICATION IN THE
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By

Graham B. Kerr

Studies of induced social change have concentrated on individual change and little attention has been paid to collective social change. Research indicates that strategies of inducing change through collective processes may be more efficient than strategies involving only individuals.

The objectives of the present thesis are: (1) to add to our knowledge of the modernization process by developing a model of the collective adoption process, (2) to explore the use of the reputational method of identifying leaders of collectivities, and (3) to provide a framework and method for change agents to analyze and use the collective adoption process to bring about more rapid modernization.

A model of the collective adoption process is developed from a survey of research completed in more developed countries. Six stages in the collective adoption process are identified as follows: stimulation, initiation, legitimation, decision, transmission, and action. For less developed countries, characterized by relatively less differentiation of social roles, the model is adapted to include three stages: introduction, legitimation, and implementation. Seventeen propositions exploring the social and communication characteristics of the introducing

legitimating and implementing leaders in the collective adoption process are postulated.

Data were collected in Eastern Nigeria, where 17 development associations in as many villages were identified using a modified reputational method. The same method was used to identify the introducing, legitimizing, and implementing leaders in each of the associations. All of the selected leaders (99), and many of the association members (342), were interviewed and data were collected about their families, farming, adoption and communication bevavior.

The leader categories are compared using means and frequency distributions. Statistical tests of significance are not used to evaluate the size of differences between categories because the data do not meet the assumptions of the tests.

Eleven of the 17 propositions are supported by the data collected from the association leaders. The main findings of the present study are:

1. The reputational method effectively identified the development associations and their leaders who occupy the three roles in the collective adoption process.

2. Introducers are the youngest, most educated leaders, with higher extrasystem contact than other leaders. More of the introducers have exposure to agricultural media, know and talk to the agricultural change agents, than other leaders.

3. Legitimizers are the oldest, have the highest social status, but are not wealthier than other leader categories. The legitimizers do not reflect the development norms of their associations more than

other leaders by adopting more agricultural and health innovations.

4. Implementers are the middle category of leaders in terms of age, and are more locally oriented for news of other systems than introducers.

5. Several propositions exploring the communication interaction between leader categories are not supported by the data.

The theoretical, methodological and pragmatic implications of the thesis are discussed. It is suggested that associations, like the development associations of Eastern Nigeria, should be incorporated into development strategies of change agencies.

LEADERSHIP AND COMMUNICATION IN THE COLLECTIVE ADOPTION PROCESS OF DEVELOPMENT ASSOCIATIONS IN EASTERN NIGERIA

By

Graham B. Kerr

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For

Maryagnes,

as a reminder of our early days
together, spent among the wonderful
people who provided the inspiration
for this thesis,

and for

'Yinka and Stephen,

in the hope that they will also love
and appreciate those who are different.

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This thesis represents the culmination of three years work in the Department of Communication at Michigan State University. At times confusing, busy and frustrating, but always exciting and productive; for this I thank all the Faculty.

I am indebted to the United States Agency for International Development and the Department of Communication, Michigan State University, for permission to make use of data collected by the "Diffusion of Innovations in Rural Societies." Computer analysis at Michigan State University was made possible, in part, by support from the National Science Foundation.

The work began in Nigeria where I was helped immeasurably by Niels Roling, Gerald Hursh and the members of the Diffusion Project staff, as well as the Nigerians who gave of their time to provide the data.

Thanks are extended to the members of my doctoral committee: Vincent Farace, Paul Hiniker, and Eugene Jacobson. I would particularly like to thank Eugene Jacobson for many hours of stimulating conversation.

During a long trip by car from Ibadan to Enugu, Nigeria, in 1965, Everett Rogers and I first discussed the idea of studying the collective adoption process. Throughout the ensuing five years, Everett Rogers has been my academic advisor, committee chairman, and friend, constantly

giving support, encouragement and ideas for this thesis. To a very real friend I say, "Thank you."

I also thank Anita Immele and Betty Blackburn who completed the computer analysis with minimum of problems.

To Maryagnes, my wife, who typed and proofed many of the drafts, and to Judi King, who typed both drafts and the final copy most professionally, I express my thanks.

Finally, I thank my family. My parents contributed more than they realize, by charting the course and keeping me headed in the right direction during the early years. Maryagnes, Adeyinka and Stephen have all made it seem very worthwhile.

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Chapter I

THE PROBLEM, OBJECTIVES, AND SETTING

> Innovation is not an efficient activity. To give active support to every proposal of every group, or even a major fraction of them, would be to take the short route to social chaos.
>
> (Adrian, 1960:2)

> Why, then, have the Ibo, living in small, relatively independent groups with a sedentary agricultural way of life, been willing to accept new conditions and to change so rapidly?
>
> (Ottenberg, 1959:132)

The purpose of the present thesis is to explore the process whereby groups of people take joint action involving the adoption or rejection of an innovation.[1] In an environment where change is the only constant, mechanisms for coping with change assume a great importance. As Adrian's above comment implies, we are constantly bombarded with new information, and we cannot pay attention to all of it; there simply is not enough time.

Mechanisms for selecting useful new information, at the individual level, have been the subject of considerable study in several scientific disciplines.[2] Collective adoption processes have received little attention, but they are, as we will demonstrate, very important, and of

---

1. Innovation is used to label information, either abstract ideas or concrete (touchable) objects, perceived by the unit of study as being new. Information labels matter-energy units upon which pattern is imposed by the perceiving unit (Berlo: 1970:1-5ff).
2. The Diffusion Documents in the Department of Communication at Michigan State University is a repository for publications dealing with the diffusion of innovations. Less than two percent of more than 1,500 publications deal in any way with collective adoption.

particular interest to change agents interested in introducing innovations into social systems.[1]

My interest in the collective adoption process was stimulated while I was living among the Ibo of Southeast Nigeria, an ethnic group noted for its propensity to accept change (Ottenberg, 1959; Uchendu, 1965). The Ibibios, who live to the Southeast of the Ibos, are also noted for their progressive attitudes and interest in development (Martin, 1956; Forde and Jones, 1950). In the villages of both ethnic groups, social groupings involved in a plethora of activities are evident. These social groupings or associations[2] seem to have developed indigenously, and their pervasiveness and activity strike the visitor immediately.

Associations, such as those among the Ibo and Ibibio, are prevalent along the West African coast (Little, 1966; Lloyd, 1967), but as Lloyd notes, they "seem to be found most often in southern Nigeria" (Lloyd, 1967:202). Membership in the associations is based on ethnic origins and people who live away from their villages remain members, even when they are as far away as Europe and the United States. The overall function of the association is to provide for the well-being of the members, particularly when they are residing away from home (Little, 1966). Another function performed by the associations is the development and improvement of their home villages, and it is reflected in titles such as

---

1. The importance of collective adoption processes is reflected in recent literature. In 1962, Rogers reviewed diffusion of innovation literature which concentrated exclusively on individual adoption. The second edition of the same review, to be published in 1970, also analyzes collective adoption processes. An extensive review of the diffusion literature gives considerable space to the collective processes of innovation (Havelock, 1968 and 1969).
2. An association is "a group organized for the pursuit of an interest or group of interests in common" (MacIver and Page, 1955:12).

"Owerri Progressive Union" and "Mbaise Improvement Association" (Uchendu, 1965:37).

Our interest in the associations was further stimulated by the realization that, though many are established to improve the rural areas, the Eastern Nigerian[1] government ministries concerned with rural development almost completely ignored the associations. It would appear that the associations form a natural partner in any rural development strategy and that they would be utilized by the ministries[2], but the partnership is still a thing of the future.

The present study is confined to a unique subset of the associations, which we labelled as "development associations"[3], that are concerned with the improvement of the villages in which they are established. We wish to explore the process by which development associations and their leaders introduce innovations into the villages of which they are a part. A model which explicates the stages of the collective innovation process will be developed. A series of propositions about the leaders of the association who participate in each stage of the process will be proposed and tested with data collected from several development associations in Eastern Nigeria.

---

1. In 1966-67 the territory where the present study was completed was known as "Eastern Nigeria". This name has been retained throughout the present thesis. In May, 1967, the Military Governor of Eastern Nigeria declared Eastern Nigeria as the independent state of Biafra. Simultaneously the Federal Nigerian government declared Eastern Nigeria partitioned into three states within federal jurisdiction. The Nigerian-Biafran war ensued and Biafra collapsed after nearly three years of bitter fighting. The villages studied in this thesis are at present located in the East Central State, and the South East State of Nigeria (see map in Chapter III).
2. The Ministry of Rural Development, Eastern Nigeria, had shortly after this research was completed indicated that it intended to involve local associations in their development programs.
3. Defined later in this chapter.

OBJECTIVES OF THE STUDY

The objectives of the present thesis are threefold:

1. Theoretical
2. Methodological
3. Pragmatic

By so dividing them, we do not mean to imply that they are mutually exclusive. The theoretical objectives influence the methodological, just as the methods affect the pragmatic objectives of the research.

Theoretical Objectives

Modernization and Communication

The basic theory which underlies the present thesis is that of modernization. Modernization has been conceptualized as:

> The process by which man purposively cumulates control over change in environmental phenomena essential to his welfare (Ascroft, 1969:15).

The development association is an organization that affords its members greater control over their environs, enabling them to increase their well-being through the adoption of collective innovations. Modernization has often been restricted to processes that occur at the individual level (Rogers, 1969:14). The present investigator feels that this is an unnecessary restriction and that a similar process occurs at the group and societal level and should be recognized as modernization (Kerr, 1970:43-49). For example, the development associations engage in collective action that leads to change and control over change in the environs by the associations'members (and probably by some villagers who are not members of the association). Thus it is possible to think of the collective adoption process as a set of behaviors forming a subset of those which constitute modernization.

The process of particular interest to us involves the adoption of innovations by the development associations. The innovations are introduced through the external contacts of members of the associations. The members talk about the innovation and decide whether they wish to incorporate the innovations into their community. During this process the innovation is not usually present in a physical form, but is present as an idea and as information. As Keith writes:

> The process of diffusion of innovations is the transmission of innovation information. The process of adoption is the acquisition and processing of such information, followed by certain behaviors. Information is an essential element, common to both processes (1968:1).

The words that represent the innovation during the collective adoption process are not just information (matter-energy units with pattern) but they refer to aspects of the innovation. The words are symbolic of and refer to the innovation. This process of the transfer of symbolic information has been defined as communication (Berlo, 1970: 61). Thus, we find ourselves in agreement with Ascroft who postulates that communication is a major vehicle of modernization (Ascroft, 1969: 1).

Summarizing our first objective, the process of collective adoption and its relationship to modernization is presented diagramatically (Figure 1-1). Through external contacts an innovation is introduced to the system[1], at time one. If the system adopts the innovation, modernization of the system takes place, which in turn changes the system's external contacts. And at time two, a second innovation is introduced to the system (now a different system), and a similar process occurs.

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1. A system refers to a set of interdependent components, the structural relationships among the components, and the functions or process which occur over time (Berlo, 1970:III-7).

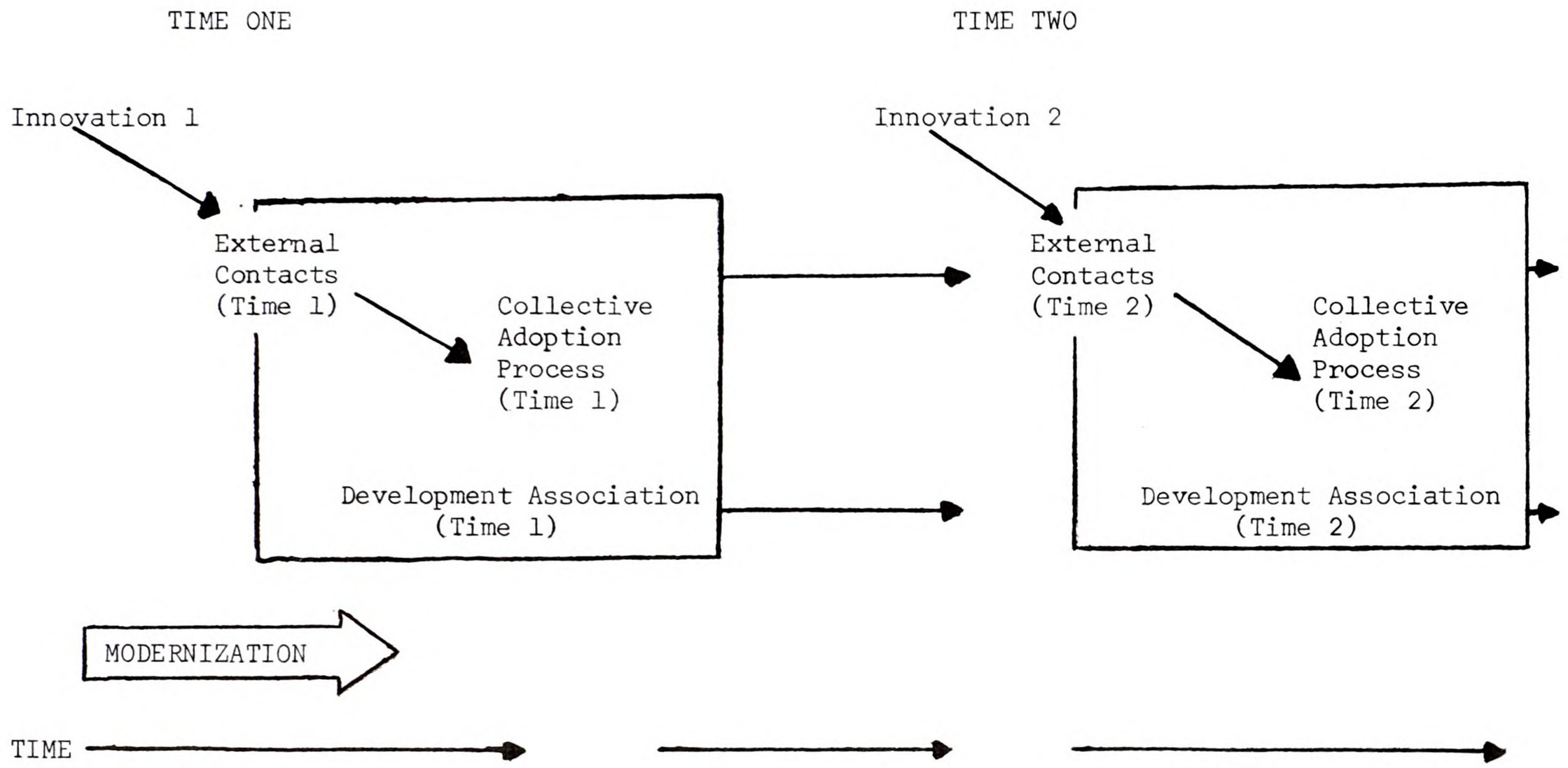


Figure 1-1. THE RELATIONSHIP BETWEEN THE COLLECTIVE ADOPTION PROCESS IN A DEVELOPMENT ASSOCIATION AND MODERNIZATION

A Model for Comparative Studies

The present thesis is based upon a model, an abstraction of the collective innovation process which isolates the important elements which interact in the process, and the characteristics of those elements which explain the nature of the interaction. Prior research on collective adoption and group decision-making is surveyed to provide a base for model building. The strategy we have adopted follows that advocated by Glaser and Strauss (1967), who call for the generation of theory from a body of empirical research, working towards a number of more general postulates. We agree with their basic proposition stated as follows:

> We believe that the discovery of theory from data--which we will call <u>grounded theory</u>--is a major task confronting sociology today, for, as we shall try to show, such a theory fits empirical situations, and is understandable to sociologist and layman alike. Most important, it works--provides us with relevant predictions, explanations, interpretations and applications (1967:1).

The model generated in this way fits into Merton's category of theories of the "middle-range" because it lies "between the minor but necessary working hypotheses that evolve in abundance during day-to-day research and the all-inclusive systematic efforts to develop a unified theory that will explain all the observed uniformities of social behavior, social organization and social change"(Merton, 1967:39). The present model will be used, as Merton suggests, as a guide to empirical enquiry.

The need for models of collective processes has been stressed by several scientists. Many of the past studies of collective processes have concentrated upon a single collectivity: "...a large number of purposive studies at the community level have tended to pile one upon

another, each adding more or less enlightening findings, but with little generalizability" (Warren and Hyman, 1968:407). Similarly Rossi commented: "So long as community power studies remain on the level of case studies of individual communities, the constraint of data upon interpretation will be minimal" (1966:725). Predictive generalizations may be developed from several case studies, but only if the studies have collected comparative data. The collection of comparative data rests upon the use of common methods and guidelines in several collectivities. A model of the process being investigated provides the needed guidelines because it specifies the important variables in the process and suggests possible relationships between the variables. A model synthesizes existing knowledge of the process and so indicates the research design and methods best suited to the investigation of the process.

Another comparative dimension that has implications for both methodology and theory is the cross-cultural comparison that the present study affords. The model and methodology of the present thesis are firmly based in social science developed in the United States; my study tests the utility of model and methodology in other cultures. The dangers inherent in transfering models between cultures have already been demonstrated during community studies in Mexico and England. Miller, for example, found the community power structure of an English city to be very different from that of a city in the United States which he studied simultaneously (1958:15).

A Propositional Inventory[1]

The elements of the model of the collective adoption process will be considered in the light of the literature from several areas,

---

1. A proposition relates a determinant (independent variable) to a result (dependent variable) (Zetterburg, 1961:2).

including community action, diffusion of innovations, group dynamics, opinion leadership, and community power. From this literature a number of propositions concerning the collective adoption process will be developed and tested with data collected about development associations in Eastern Nigeria.

Methodological Objectives

Further Use of a Controversial Method

The methods that have been used to identify the nature of collective processes and determine who occupies leadership roles are discussed in Chapter III of the present thesis. They are criticized carefully, and the assumptions underlying each are discussed. The reputational method[1] is selected as being the most suitable for studying the development associations, exploring the decision-making structures, and the roles involved in the decision-making process.

An Application of Method in Different Cultures

The reputational method has usually been confined to community studies in the United States. There have been a few cross-cultural studies (D'Antonio and Form, 1965; Miller, 1958), and at least two studies in other cultures (Edwards, 1963; Singh, 1970) which used the reputational method, but all those mentioned except Singh (1970) have studied urban complexes. In the present thesis the method is used in rural areas, not at the community level, but at the level of a collectivity embedded within a community. The urban areas of most countries are more alike (cross-culturally) than the rural areas, so the present study provides a more severe test of the utility of the reputational

---

1. The reputational method uses an individual's reputation of his involvement in collective processes to identify the leadership of a collectivity.

method. We plan to use the method in two cultures (Ibo and Ibibio), simultaneously in rural villages, and to study collectivities within communities, rather than entire communities.

Pragmatic Objectives

To Provide a New Strategy of Change

The present thesis investigates modernization and the adoption of innovations, so it is only natural to expect change agents[1] to be interested in its methods and findings. We have already mentioned the pervasive and conspicuous nature of the development association in Eastern Nigeria, but we know of no documented case of a change agent incorporating these ready-made development associations into his strategy for introducing change into villages. The development associations have strongly established links with urban areas, and it would appear that change agents could utilize these channels and existing social structures to encourage change.

There are several reasons for encouraging change agents to utilize the collective adoption process in their change strategies. Firstly, in Eastern Nigeria several of the new agricultural innovations being promoted by the Ministry of Agriculture require collective adoption. For example, community farms and rice irrigation schemes require more resources than any one farmer has available, so a collective strategy of adoption is required. Research indicates that the participation of group members in decisions concerning collective adoption has several

---

1. A change agent is an individual interested in inducing different behaviors in other members of society. The term usually describes those working to diffuse innovations.

beneficial effects. Davis (1965) found in a U.S. college that innovativeness was associated with a high degree of involvement in collective adoption decision-making. Such participation seemed to enhance commitment to the organization and acceptance of collective decisions. Lin and others (1966:2) found similar results in Michigan public schools. In Thailand, Rogers and others (1969:S-2) found that schools adopting innovations earlier than others had principals who reported that they had "frequent meetings with their teachers to discuss educational problems."

Change agents might also be encouraged to use a group strategy when they are introducing innovations requiring individual decisions. A classic series of experiments, initiated by Lewin, evaluated lectures and group decision strategies for persuading housewives to give their families new foods. Lewin and his colleagues found that group decision methods were superior (Lewin, 1958:211; Bavelas and others, n.d.; Radke and Klisurich, 1947). Radke and Klisurich's experiment also indicated that changes made by group members after they had made a group decision lasted longer than changes that did not involve group participation (1947:409).[1] In a more recent experiment in Indian rural radio forums, group discussion after group listening to a radio program produced greater changes in knowledge, beliefs and behavioral intention to adopt innovations among forum members, than in members of forums with no group discussion (Jain, 1969:134).

A third rationale for involving change agents in collective

---

1. There are several studies from industrial psychology and small group research that support the proposition that working with groups rather than individuals produces more attitude and behavior change in the group's members. Among these studies are Coch and French (1948), McKeachie (1954), Bennet (1955).

adoption processes is provided by "risky shift" research. Risky shift is a phenomenon that occurs during a collective decision and results in the decision being riskier than the individual decisions of the group members (Bateson, 1966:119; Brown, 1965). Risky shift by the participants has been found in collective decisions even in the face of aversive consequences (Bem and others, 1965:460), and particularly after discussions about the topic of decision (Teger and Pruitt, 1967; Wallach and Kogan, 1965; and Zajonc and others, 1968). Rim (1963:115) noted that among individuals with high need for achievement decisions were somewhat riskier than among other individuals. Rim's finding has particular importance for the present thesis, because the Ibos who form the majority of the development association members in the present study, have been characterized by Levine (1966) as having higher achievement motivation than the Yoruba or the Hausa, who are the other two major ethnic groups in Nigeria. Consequently, change agents in Eastern Nigeria have the opportunity of working with collectivities of men who are already prone to make risky decisions. Adoption decisions contain increased uncertainty and riskiness, particularly for individuals from areas, like Eastern Nigeria, where rapid social change is not common. Individuals with high achievement motivation like the Ibo may make such decisions more easily.

Having indicated why a change agent should work with development associations, we can state the final pragmatic objective of the present thesis. It is hoped to provide both a framework (model) which the change agent may use to analyze the collective adoption process, and a method that enables him to identify the important leaders of the associations and the functions that the leaders perform in the adoption process,

so that leaders may be incorporated into strategies of change and modernization.

Summary of Objectives

We begin with several objectives:

1. To add to our knowledge of the modernization process, developing a model of the collective adoption process which can be used as a guide for comparative studies in several systems, and from prior research and the model suggesting a series of propositions exploring relationships in the collective adoption process.

2. To further develop the use of a method which has been the subject of some controversy, and to see if it can be used in a cross-cultural setting.

3. To provide a framework which the change agent could use to analyze the process of collective adoption, together with a method which will enable him to use the process of collective adoption to bring about increased adoption of innovations and hence modernization.

THE SETTING

Eastern Nigeria[1]

Eastern Nigeria was, at the time of the present study, one of the four regions of the Federation of Nigeria (Map 1-1). The Eastern Region occupied approximately 30,000 square miles in the southeast corner of the Federation. It was slightly larger than the Republic of Ireland in Europe, and slightly smaller than Maine in the United States.

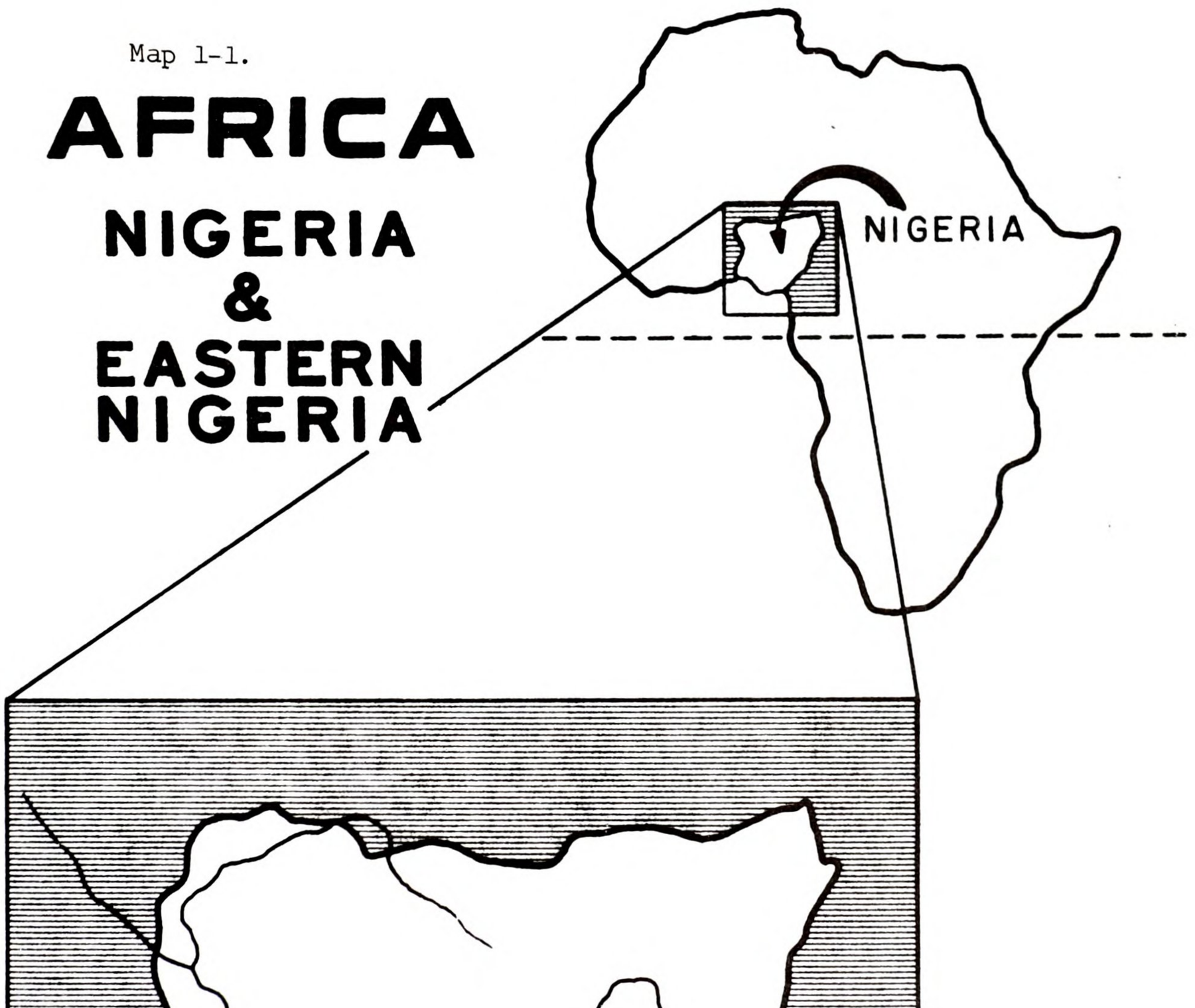
---

1. Details of the selection of Eastern Nigeria for the present study are in Chapter III. For more detailed descriptions of Eastern Nigeria see: Floyd (1969), Hursh and others (1968), Karmon (1966) and Hershfield (1968).

Map 1-1.

AFRICA

NIGERIA & EASTERN NIGERIA



The region's proximity to the equator, the prevailing winds, and the terrain combine to produce a hot humid tropical climate. The rainfall (ranging from 60 inches in the north to 140 inches on the coast) is sufficient to support a tropical rain forest throughout the region. The combined effects, however, of high population density, slash and burn agriculture, and poor soils have depleted the forests, and in the north of the region they have been replaced by tall grasses and fire-tolerant trees of the savannah. On the southern coastal plain, trees have been replaced by oil-palm bush, because the farmers cut the trees but not the oil-palms when they cultivate the land.

The regional population was estimated as 12.4 million in 1963. There are seventeen major languages and about 300 minor ones spoken by the peoples of the region. The two largest ethnic groups, which are studied in the present thesis, are the Ibibio and the Ibo. They comprise about 80 percent of the region's population.

Prior to the advent of mineral oil exploration, agriculture was the major export earner, and still is the most important employer. Farming supplies all the staple foods for the indigenous people, the manpower for industries, and in 1965 accounted for 64 percent of the Nigerian federal gross domestic product (Nigeria, 1967). Palm products were the most important agricultural export earner of the Eastern Region.

The Villages

More than 90 percent of the population of Eastern Nigeria live in villages. Villagers' houses are built in compounds, which consist of the house of the head of the family, additional houses for his wife, or wives, and their children, and small buildings for strangers.

Houses of other relatives may often be included in a compound. Compounds are clustered into hamlets, each containing a localized lineage, which may be known as a ward. Hamlets contain 6 to 20 compounds and about 200 inhabitants.

A village consists of a number of hamlets grouped along major paths radiating from a common center, where the church, school and market are situated. A rural town may consist of many villages spread over an area of 4 to 30 square miles. The compactness of the settlement depends upon the topography of the countryside. In the hilly areas, the villages are tightly clustered on the tops of ridges, while on level and rolling lands, villages spread over large areas, except in the most densely populated areas where there is virtually no land left between villages.[1]

In most villages there are groups of men called age-grades, organized on the basis of being born within a designated period. Among the Ibo a new age-grade is organized every three years and there are 5 to 9 grades of young men and boys prior to their entrance into the larger system of senior age grades. These older grades may have organizations that include several towns, whereas the younger grades are organized on the village level. Among the Ibibio a new age-grade is formed every year. The age-grades function in community work, such as clearing forests and cutting pathways. The middle-aged men act as market police and executors to the village elders.

---

1. In the belt of land that lies between Onitsha in the northwest of the region and Uyo in the southwest, population density is often more than a thousand persons per square mile. This is one of the most densely populated rural areas in the world.

The community functions of the age-grades are decling and are being assumed by village and clan[1] unions. The unions also serve to unite the village to its sons and daughters who travel away to reside in other parts of the country. The travellers, called "sons-abroad", are obligated to contribute, along with the home village residents, money and effort to community self-help projects. This pervasive self-help phenomenon among the Ibo, and Ibibio, is one of the unique characteristics of the region, and is a particular interest in the present study.

Development Associations

The associations, of which the development associations studied in the present thesis are a subset, have been given a variety of names by social scientists.[2] "Voluntary association" is the name most commonly used for the form of social organization that exists throughout urban Africa (Wallerstein, 1966:319). And it is the contribution which the associations have made to the process of urbanization that has received the most attention from researchers (Little, 1965; Meillassoux, 1968; Lloyd, 1967). The role of the urban voluntary associations, which were established by the early migrants from the rural areas, has been one of socializing later migrants from the same rural areas to the ways of the towns (Lloyd, 1967:196).

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1. The clan is a unit of ethnic organization that covers an area larger than a town, but smaller than a tribe.
2. Examples are: Traditionalist associations (Lloyd, 1967: 196; Ottenburg, 1959:;39), ethnic associations (Lloyd, 1967:197), improvement associations (Ottenburg, 1955), improvement unions (Uchendu, 1965:36), village meetings (Ottenburg, 1953), voluntary associations (Little, 1965; Wallerstein, 1966; Meillassoux, 1968) and non-kinship associations (Uchendu, 1965:76-83).

> The objectives of some were political, economic, religious, or social: political parties, cooperatives, fellowships, social clubs, and sports groups. Some of the associations grouped people on the basis of special life experience: old boy's associations and ex-servicemen's organizations. Tribal unions had an ethnic basis, and friendly societies claimed to accept anyone (Wallerstein, 1966:322).

As the associations became more firmly established in the urban areas, they assumed another function. They now serve as major channels of communication and influence, which bring urban ideas into the rural areas. This function has been noted among the improvement unions of the Ibo. As Uchendu states:

> In Nigerian and other West African cities where some Ibo work or seek paid labor, the need to protect themselves and to educate the newcomers in the city ways, as well as to act as pressure groups in their respective village and district politics, led to the formation of various associations called Family Meetings or Improvement Unions. These associations...plan welfare developments, map strategy for local councilors, and, in an election year, influence voting through propaganda...in language their people can understand. As opinion leaders and innovators their role is to explain the demands of their changing world to their people and to analyze the implications of political choices they make at the polls (1965:37-38).

The origin of voluntary associations is obscure. There appear to have been groups formed in urban areas as early as 1787, under the influence of colonial settlers (Wallerstein, 1966:322). In rural areas of Eastern Nigeria there has been a long tradition of associations and of the "various associations that emerged from a traditional background, essentially new but retaining a familiar format, the most important and the most universal...was the savings club" (Wallerstein, 1966:328). The savings clubs or "esusu"[1], as they are commonly called,

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1. Esusu is the Yoruba name for the savings clubs and is widely used throughout Nigeria.

provides a form of capital accumulation. Members pay a fixed subscription at regular intervals to a treasurer, who distributes the collections to each member in rotation (Ardener, 1953). Contributors can accumulate their savings, buy goods on credit, and their membership is sufficient to guarantee short-term credit from a local money-lender (Uchendu, 1965: 78).

The accumulation of money (and other resources) is certainly a necessary condition for modernization, and the savings clubs may be the forerunners of the development associations that form the basis of the present thesis. Indeed, two of the 17 development associations studied in the present thesis have savings clubs within their organizations.

Adapting MacIver and Page's (1955:12) definition, we define development association as a group organized for the pursuit of the development and modernization of the association's members. We have already noted that there is lack of agreement about names of the many associations along the West African coast, so rather than use names as a basis for selecting associations for the present study, we asked ten villagers, randomly selected in each village, to name the association most active in the development and progress of the village.

In none of the villages in the present study were the choices of the ten villagers unanimous. The average number of votes per association was 6.2 out of a possible 10. In all villages the association chosen had either more votes than any other or in the case of a tie selection was made after the activities of the tied associations had been studied carefully, so that the association involved in more development activities could be chosen. We labelled the selected

associations as development associations.[1]

The development associations of 17 villages have 1,056 members, of whom approximately one quarter (248) live outside the villages, that is, they reside "abroad". The members who live abroad visit the home association at least once a year, and as many as twelve times a year, for formal meetings when a discussion of village matters (including development) takes place. Some of the abroad members live in other villages, but many live in towns and return with ideas of urban development[2], acting as purveyors of urban influence.

There can be little doubt that the associations studied in the present thesis are oriented towards the modernization of their members. Looking at the objectives of several of the societies we find the following statements:

1. The Vice-Chairman of Umu Igbonaachiogu Ndichiani of Omasi Agu answered the question of "Why was the group formed?" with,
   It was formed with a view to facing strongly the modern ways of life and receiving the village's full share of the government ameneties. To see to the progress of the village and its gradual development.

2. The aims of the Itu People's Committee are:
   a. To preserve and project the identity and unity of Itu Ama-iri.
   b. To provide an all embracing representative and consultative machinery through which and with which the people's elected representatives shall work for the unity and progress of Itu town.
   c. To initiate, receive, examine, and implement plans and projects for the unity and progress of Itu town.
   d. To co-ordinate the activities and efforts of all groups, and organizations at home and abroad which with honesty, justice and service, work towards the continued unity

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1. A selection of the names of the groups studied in the present thesis further illustrates the name problem. Examples are: Ekwueme, Farmers' Cooperative Society, Amaukabi General Meeting, Village Council, Une Age Grade, Umaseke Union, Abo Improvement Union, Umu Igbonaachiogu Ndichiani.
2. In the present thesis only members living in the village are studied, because of the logistic difficulties of interviewing those living away from the village.

and progress of Itu.

e. To preserve and project the nobler of our cultural heritage, traditions and customs.

f. To provide a link between the community and the government.

3. The aims of the Umoke Cooperative Community Farm Project contain many statements about encouraging members to be better farmers, and ends with the following statement:

> To do any other things that may tend to increase the living standard of the members.

Approximately 50 development projects were embarked upon by the 17 associations in the present thesis during the years 1960 through 1966. The projects included: seven agricultural schemes, four village halls, two health dispensaries/maternity centers, ten school assistance schemes (building classrooms, teachers' houses, etc.), five scholarship programs (including one grant of money to a "son abroad" studying in the United States), four water projects, five loans-to-members schemes, and so on.

Over the past fifty years many of the people born in Eastern Nigeria migrated to other parts of Africa and particularly to other parts of Nigeria. In 1966 civil disturbances and massacres throughout Nigeria drove many of these people back to their home villages; villages which many had never seen and some had left as young children. It is estimated that between one and two million people returned to the already overcrowded rural areas of the region. These refugees were not strangers to their villages, however, and they were welcomed and provided for. Those living away from home had kept in touch with their relatives living in the home village through many associations, and their re-integration into the community was facilitated by this

constant contact. The development associations studied in this present thesis are an example of such associations.

The Nigerian-Biafran civil war followed the civil disturbances of 1966, and for two and a half years it swept back and forth across Eastern Nigeria. Now it is over, rebuilding shattered homes and villages has begun, and a special role for the development associations is undoubtedly beginning. Now that official agencies and Government Ministries are launching construction programs, the development association may be able to act as the link between the villagers and the agencies. Bearing this in mind, let us turn to a more detailed study of the process in which the associations introduce and adopt innovations in the villages of Eastern Nigeria.

Chapter II

A MODEL OF THE COLLECTIVE ADOPTION PROCESS

In this chapter a model of the collective adoption process is developed on the basis of research in several disciplines. A series of stages and roles is postulated in the model, and it is suggested that in less differentiated societies, like the Ibo and Ibibio, three definite roles can be distinguished by members of the development associations. Several propositions distinguishing between the role occupants are developed, to be explored in Chapter IV.

Though the present thesis is limited to development associations of Eastern Nigeria, the model is generalizable to any collectivity, whatever its size or function. It is hoped that the model will be a useful guide for investigating decision processes in informal small groups or nation states, in curriculum committees or legislative assemblies. Our present concern is with the decision processes involving innovations, particularly those which are introduced into the system from other systems. The model may also be utilized with inventions (intrasystemic innovations), but they will not be considered in the present study.

COLLECTIVE DECISION-MAKING IN THE ADOPTION PROCESS

Community Decision-Making

Small group research, summarized by Collins and Guetzkow (1964), concentrates upon problem-solving groups. Though problem-solving involves decisions by the group, little attention has been paid to the

processes of decision-making. The groups typically have been set up in laboratories and scientists have concentrated upon productivity, participation, satisfaction, speed of task completion, communication networks in the group, etc. The process that has received the most attention is the development of leadership roles.

Industrial psychologists have studied existing groups in industry, rather than in laboratories, and have also tended to concentrate upon group productivity, satisfaction and participation in decision-making. Studying this latter variable has usually involved manipulating it as an independent variable, without studying the nature of the participation process itself.

The social structure and processes of collective decision-making in existing groups have been studied by sociologists interested in the community, and in this literature we find several attempts to describe community power structures and the roles performed within that structure.

Communities are usually thought of in terms of their geographical boundaries, as "a locality group which contains the major social institutions" (Rogers, 1960:132). In the present study we adopt the process view of community that is equally applicable to any collectivity, and has been characterized as a system "...of social interaction which gives rise to more intensive attitudes and practices of interdependence, cooperation, collaboration, and unification" of the system's members (Ross, 1958:27). This conceptualization allows us to build a more general model useful in the analysis of diverse social structures. It follows Kaufman's formulation of the community as an association--"as activity or as a type of organization of human interaction." Analysis may begin with a geographic unit, such as a village or metropolis, but

it rapidly moves to focus on the activities, such as associations and agencies, programs and projects (Kaufman and Wilkinson, 1967:12).

Turning our attention from community to decision-making in communities, we find very few studies which have formally defined the decision process; most simply select decisions without making further divisions of the decision process. For example, studying community leadership in Syracuse, New York, Freeman and his colleagues selected decisions using the following criteria. Decisions had:

1. To be perceived as important by informants representing diverse segments of the community;

2. To pertain to the development, distribution, and utilization of resources and facilities which have an impact on a large segment of the population;

3. To involve alternative lines of action, entail a certain degree of choice on the part of the participants;

4. To be administered rather than "market type";[1]

5. To involve individuals and groups resident in the community. Decisions made by units outside the geographical area but affecting the area were excluded (Freeman and others, 1960:7-8).

Data were collected from 50 key informants and from public documents to establish a list of decisions that met the above criteria. The scientists operationalized the essence of Rossi's definitive interpretation of decisions in the community context, which was: "...choices among alternative lines of action directed at affecting community-wide institutions...A community decision is a choice among several modes of action which is made by an authoritative person or group within the

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1. For the purposes of their study Freeman and others (1960) defined administered decision as one made by individuals holding top positions in organizational structures which empower them to make decisions affecting many people. The present author assumes that "market type" decisions are decisions made in a democratic fashion (he has no evidence to the contrary).

community institutions and of which the goals are the change or maintenance of community-wide institutions or facilities" (Rossi, 1957:416).

Some researchers found "community-wide" a vague term, and the implications of "authoritative" too restricting. Recently Clark, for example, limited community decisions to "choices made by actors within the community among alternative goals relating to the maintenance or modification of institutions of facilities that involve a majority of the community residents" (1968:22). However, Clark's definition allows us to consider decisions made by local dictators, which is not the intention of his definition.

Let us now summarize some of the thinking that has been done on adoption decisions.

Adoption Decisions

The major efforts of scientists studying diffusion of innovations were concentrated upon individual decision processes. Katz notes, "Most empirical research on diffusion has focussed exclusively on the individual as the unit of adoption" (Katz, 1962:3). One chapter is devoted to "The Community Adoption Process" in Lionberger's book, but here he simply describes the diffusion over time, through a social system, of ideas and practices adopted by the individuals in a system (Lionberger, 1960:33-39).[1] No consideration is given in the book to innovations which have to be adopted by more than one person, that is, by a collectivity.

Katz (1962) classifies innovations according to the units for

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1. Lionberger's community adoption process is also called the diffusion process (Rogers, 1962:17; Katz and others, 1963:240).

which they are intended ("required units") and according to the units deemed appropriate by the culture of the system ("prescribed units"). The "required unit" of adoption for the telephone, for example, is a group of two or more people, because a telephone is of little use if you cannot talk to another person in the system. The decision of a person, whether he adopts of not, will be influenced by the "required unit". Similarly, decisions made about innovations "prescribed" by the culture to be adopted by a collectivity, will be different from decisions concerning innovations accepted on an individual basis. In a kibbutz, the decision for families to have refrigerators may have to be taken by the entire membership, which contrasts markedly with the situation in the United States where the individual family, or even one member of the family, decides whether they will have a refrigerator. Thus, the culture often prescribes the unit suitable for deciding on adoption (Katz, 1962:3-9).

Concentrating on the nature of the decision-making unit, rather than on the characteristics of the innovation or culture, Rogers suggested the following categorization in his survey of the diffusion literature.

> 1. ...individual decisions, regardless of others in the social system...
> 2. ...decisions requiring prior acceptance by the majority of the social system's members before individual adoptions can be made.
> 3. ...group decision that forces acceptance on those who are unwilling...(1962:14-15)

Combining some of Katz's basic ideas on requirement and prescription, with his earlier categories, Rogers later suggests the following types of decisions:

1. Optional decisions...made by an individual regardless of others in the social system.
2. Contingent decisions in which the individual may adopt an innovation only after a majority of his social system has already made an adoption decision; he is not forced to conform to the group decision.
3. Collective decisions, in which individuals in the social system agree to adopt or reject by consensus, and all must conform to the system's decision once it is made.
4. Authority decisions are those forced upon an individual by someone in a superordinate power position. The individual cannot affect the course of events (1968:71).

In authority decisions, the decision unit is separated from the adoption unit, functionally, if not spatially, and the adoption unit usually has little influence upon the decision unit (Jain, 1969:10-4). In contrast, collective decisions are made in such a way that every member of the group has some control over the adoption decision. Consensus[1] may be used as a defining criteria if it is broadened to include decisions made by group representatives, such as elected committees and town councils. In decisions made by a subgroup that is responsible to the group as a whole, the individual group members still influence the decision makers through the ballot box or by direct presentation of opinions to the appointed subgroup. The adoption unit in authority decisions does not have recourse to the ballot box and probably has little influence through direct presentation.

Current research on collective adoption would lead us to believe that the collective decision is the only important aspect of the collective adoption process. Summarizing formal organization research

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1. Consensus is a method of reaching agreement where all members agree upon the methods by which decisions are reached, the methods allow each member to have a say in the decision, and the members agree to abide by the decision, even when they do not agree with it. A problem-solving group seeks agreement about a solution to a problem or evaluation of an idea. Such agreement without the formality of voting is reffered to as "consensus" (Phillips, 1966:7).

on decision-making, Rubenstein and Haberstroh note:

> One receives the impression from much of the work in the field [decision-making] that the specific act of choosing among alternatives is the main part of the decision-making process and that preliminary and subsequent events are not very important or subject to analysis...In real organizations the steps that lead up to and away from "the act of choice' are often the critical ones (1966:587).

The decision is embedded in a series of inter-related events which stretch across time, and may be considered a part of the process. Studies of several collective decisions enabled researchers to isolate a series of events that occur before and after each decision. The events,which are important for predicting the outcome of the process, have been identified and described by the researchers.

A variety of models which conceptualize the decision process have been developed and tested with data gathered from empirical sources. Many of these models dealt with political decisions, others with community action, and a few with collective innovations. In the present thesis we are proposing a model that conceptualizes the collective adoption process. We will not, however, draw ideas only from those models dealing with innovations, but will select concepts from collective decision-making models, which do not deal with innovations.

Before suggesting a series of stages (events) for the model, a definition of the collective adoption process is suggested.

The collective adoption process is a series of events having the following characteristics:

1. The events surround a decision by a collectivity to adopt an innovation.[1]

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1. The model developed in the present thesis may also be used to analyze the collective rejection process, which involves a decision to reject an innovation. The stages after the decision may require modification in the case of rejection.

2. The innovation affects the majority of the collectivity.
3. The decision is reached either by consensus, or by a subgroup of members who receive their authority from the entire collectivity.
4. Adoption, once accomplished, is binding on all members who wish to remain as a part of the system.

STAGES IN THE COLLECTIVE ADOPTION PROCESS

Several models of collective decision-making have been presented in the literature. They range in complexity from a two-stage model, suggested by Presthus (1964:54), composed of initiation and implementation, to a model of 25 steps with 30 related informal roles formulated by Nuttall and his colleagues (1968:351-2).

Our particular concern is with innovations that are introduced into a collectivity from another social system. Once in the system, they are brought to the attention of the members and then adopted (or rejected) with a decision made by consensus or by a representative subgroup of the members. Up to the decision point, the entire process is a communication process. The innovation exists within the system in symbolic form and the members of the system talk about it. After the decision to adopt has been made the actions by the members incorporate the innovation into the system. At the action stage the innovation appears in the system in physical rather than symbolic form.

A model of six stages is suggested for collective adoption as follows:[1]

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1. A similar model will be published shortly in Chapter 10 of Rogers with Shoemaker (1970). The author of the present thesis assisted with the development of the chapter.

1. Stimulation
2. Initiation
3. Legitimation
4. Decision
5. Transmission
6. Action

The model is an oversimplification but is useful because it provides a framework for analyzing the collective adoption process. Justification for imposing stages on the collective adoption process is provided by Katz (1962). He notes that positing a system of stages for the individual innovation process has been a useful heuristic device, and that it would be interesting to seek counterparts of the stages in social units. "There seems good reason to believe that these stages are functional requisites for any kind of decision and, therefore, that they appear in the social decision as well" (Katz, 1962:7).

Stimulation

Stimulation of the collectivity occurs when some members become aware of an innovation through external contact with another system, and realize that the innovation will satisfy one of their system's needs. Stimulation may take the form of informal discussion between members of the collectivity who have contact with other systems (Kaufman and Wilkinson, 1967:31). Nuttall and others (1968:351) suggest that recognition of a discrepancy between a conception of the desirable and current conditions and the formulation of alternative modes of action are aspects of the early stages of collective decision-making.

Initiation

Initiation is the stage when knowledge of the innovation is communicated to several members of the collectivity, and those involved

organize support for the adoption of the innovation. Sower and others (1957:309) describe the initiation stage as, when "...a group is established which is concerned with the initiation of an action process. Obviously, until such establishment takes place, action is existent only in the minds of the individual actors." Saunders, when discussing the adoption of flouridation, formulates stages and describes one as the formulation of a plan of action and seeking additional support, and labels the stage as "preposal" (1961:55-65). Preposal corresponds closely with our formulation of initiation.

Legitimation

Legitimation occurs when the innovation is approved and sanctioned as a possible course of action for the collectivity. It is the stage that preceeds the decision to adopt and involves sanction (authority, approval, or justification) for further discussion. "It consists of consultation with formal and informal leaders of the groups and agencies which are relevant social systems" (Beal and others, 1966:81). As Sower and others (1957:310) suggest in their model, the objective of the initiating set must be acceptable to a sufficient number of other members of the system so that action goals can be set. Indeed, the basic right to initate action must be legitimized. Similar stages in other models are: organization and maintenance of sponsorship (Kaufman and Wilkinson, 1967:31), and the organization of political support (Agger and others, 1964:40).

Decision

Decision is the point at which a choice is made to adopt (or reject) the innovation by the collectivity. The decision is made by

reaching consensus among the members, or by a representative subgroup of members who derive their authority to make decisions from the whole association. Nuttall and others (1968:352) describe the decision stage as "acknowledgements of overt commitment and responsibility, final negotiation, and legitimation of decision." Saunders (1961:55-65) refers to the actual choice among possible outcomes as the decision stage, and Agger and others (1964:40) label the phase as authoritative consideration.

Transmission

Transmission takes place when the decision to adopt is communicated to members of the collectivity so that they can act upon the decision. This phase of the process is important when the decision has been made by a representative subgroup of the members of the collectivity. This stage corresponds closely to Agger and others' (1964:40) sub-process called promulgation of the decisional outcome. The transmission stage is a part of gaining and maintaining participation of the collectivity (Kaufman and Wilkinson, 1967:32) so that adoption of the innovation may be accomplished. Transmission is followed by action.

Action

Action is the stage of incorporating the innovation into the system. The action stage is essential in the collective innovation process, because if action does not follow the decision to adopt, then all stages prior to the decision have utilized the collectivities' time and resources to no avail. Beal notes,

> ...this step calls not only for mobilizing but for organizing...It is recognized that for a program to reach this point, there has been a great deal of mobilization and

organization of resources. However, this stage refers specifically to the mobilization and organization of the resources for carrying out the plan of work (1966:87).

Saunders (1961:55-65) restricts his consideration of post-decisional activity to the reorganization of a losing side in a controversy, but as Beal indicates, equal consideration needs to be given to adopters' activities. A decision to adopt does not mean automatic incorporation of the innovation into the collectivity because resources have to be made available and organized.

The action stage has been variously labelled, for example: fulfillment of the charter (Sower and others, 1957:314), the goal-achievement phase (Kaufman and Wilkinson, 1967:32), policy effectuation (Agger and others, 1964:40) and carrying out the consequences of the decision process (Nuttall and others, 1968:352).

The stages in the collective adoption process are summarized diagramatically in Figure 2-1.

The model which we have just presented is based solely upon research that has been done in the United States, but we present it as a model that is useful in analyzing processes in different systems. The model should be useful in collectivities of differing size and function. However, we do not suggest that all aspects of the model will be equally useful in all situations. In the present thesis we will use the model as a basis for analysis of development associations in Eastern Nigeria. Before the analysis we would like to modify the model to increase its utility.

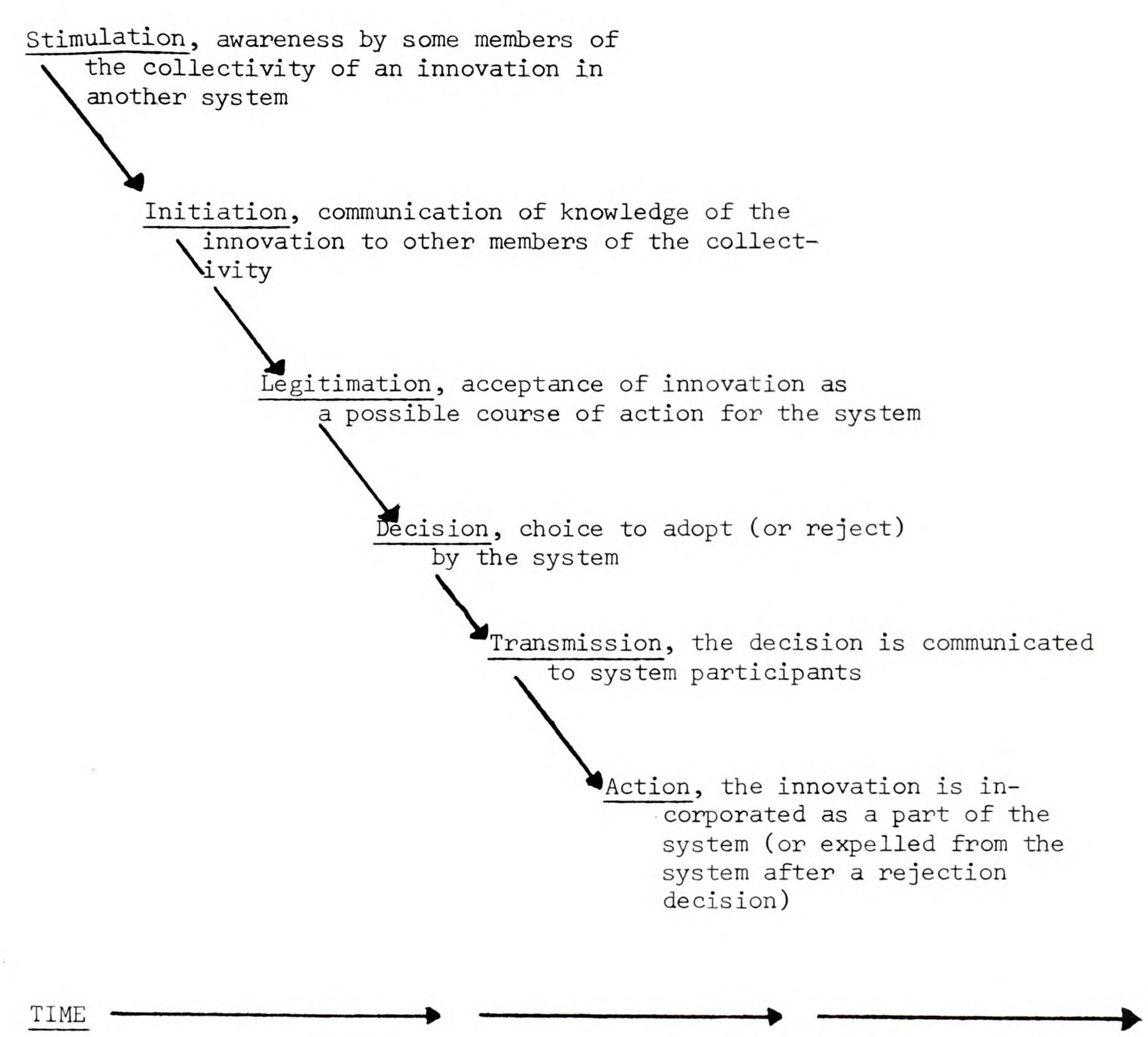
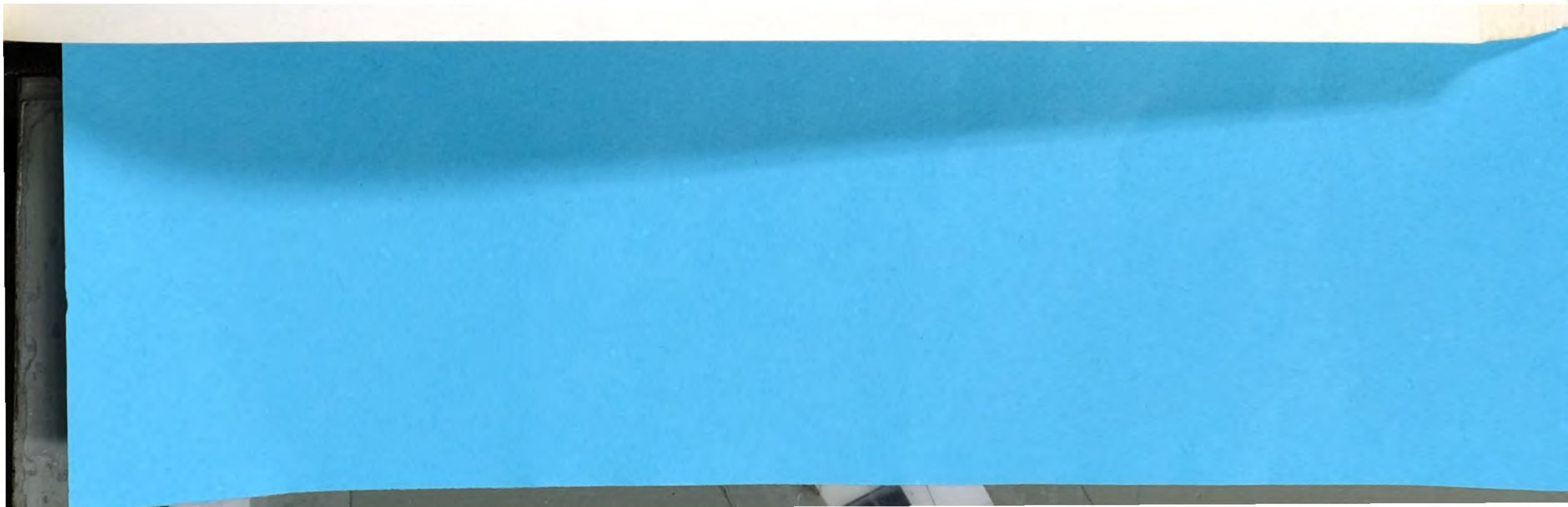


FIGURE 2-1. PARADIGM OF THE STAGES IN THE COLLECTIVE ADOPTION DECISION PROCESS



ADAPTION OF THE MODEL FOR LESS DIFFERENTIATED[1] SOCIETIES

Ascroft, discussing the sociologists' approach to modernization, notes "modernization focusses upon the increasing differentiation and specialization of individual activities and social structures" (1969: 5). The same comment is made by Thomas and Znaniecki who wrote about the individual's problems of reorganizing his life during social evolution:

> But with the growing social differentiation and the increasing wealth and rationality of social values, the complex of traditional schemes constituting the civilization of a group becomes subdivided into several more or less independent complexes. The individual can no longer be expected to make all these complexes his own: he must specialize (1961:1293).

We note that modern societies such as the United States have differentiated social structures and specialized roles, which are reflected in our model. In the United States we expect to find differentiated communities, and Preston and Spiekerman hypothesize that differentiated communities have differentiated power structures (1968: 1). In less differentiated societies, like those of Eastern Nigeria, we would expect less complex community structure and less specialization of roles in the community.

Looking at opinion leadership we find that researchers have considered changes in the opinion leadership structure within communities as the communities modernize. Merton (1957) was the first to indicate that there might be two basic types of leaders: those who are influential in only one issue area (monomorphic), and leaders who are important

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1. Differentiation denotes (a) the process of becoming separate, distinct, specialized, the acquisition of specialized forms or functions; and (b) that which results from such a process (Gould and Kolb, 1964:198).

influencers of opinion in several areas (polymorphic). Empirical studies indicate that opinion leadership is monomorphic in modern societies, like the United States and Australia (Ryan and Gross, 1943; Katz and Lazarsfeld, 1955; Emery and Oeser, 1958), and is polymorphic in the less modern societies, like Nigeria, India, Colombia and Brazil (Rogers and Van Es, 1964; Attah, 1968; Sen and Bhowmik, 1970).

Thus we might expect leadership in the development associations to be polymorphic, that is, the same individual would be nominated for several of the roles in the process. Consequently, we might question our ability, and the ability of the members of the development association, to identify the several stages in the collective innovation process postulated in the model presented earlier in the present chapter. Also, we found during pre-testing of the interview schedules, that many of the respondents were not able to identify some of the roles suggested to them in the pre-test interviews.[1]

The model was adapted to take account of these considerations and the six stages of our original model were reduced to three, as follows:

1. Introduction
2. Legitimation
3. Implementation

Introduction

Introduction is the subprocess which encompasses the introduction of the innovation into the collectivity from another system. Introduction combines stimulation and initiation of the earlier model. The category of leaders who play the introducing role in the collective adoption process are labelled introducers.

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1. For details of interview schedule construction and pre-testing see Chapter III of the present thesis.

Legitimation

Legitimation involves the approval and sanction of the innovation as a possible course of action for the collectivity, and then the decision to adopt the innovation. Leaders from the collectivity who play a legitimizing role are labelled legitimizers.

Implementation

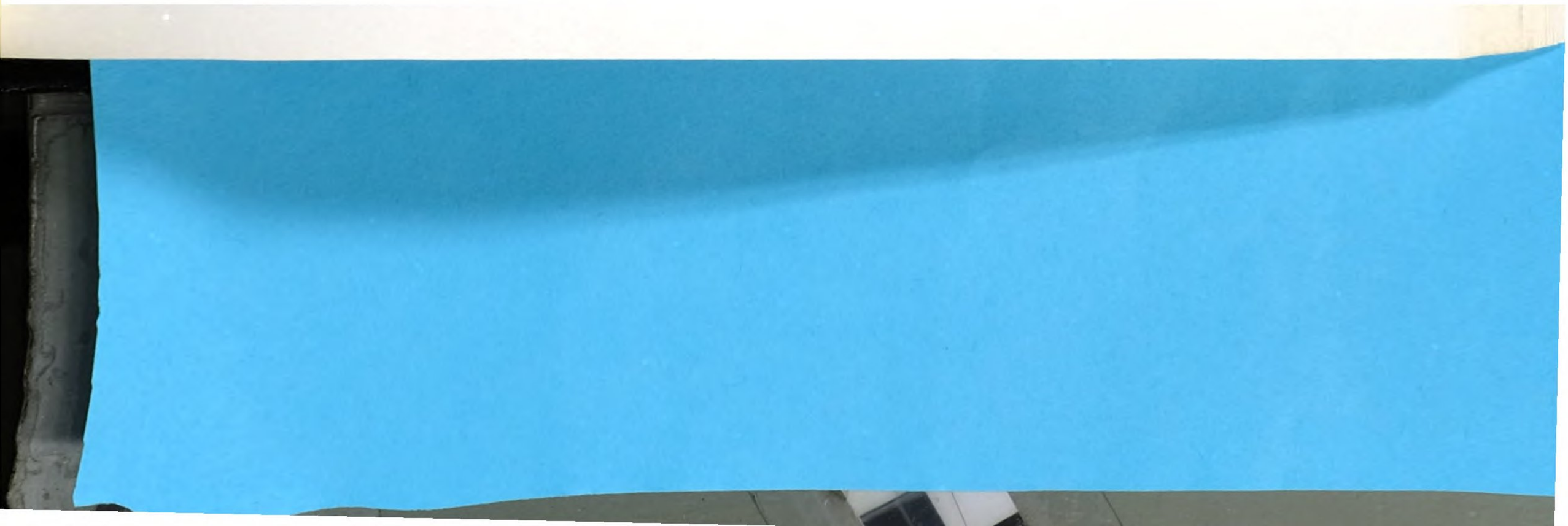
Implementation encompasses all activities of the collectivity that are undertaken by the members to adopt the innovation. Implementation includes transmission and action from our earlier model, and the leaders who fulfill these roles are called implementers.

Thus the first proposition of our study is suggested by this brief description of the roles in the collective adoption process.

> Proposition 1. In the collective adoption process, three categories of leaders can be identified as introducers, legitimizers, and implementers.

Some support for the proposition is provided by Dahl who noted that, in the urban redevelopment program in New Haven, Connecticut, the introducers were a professional city planner and the administrator of the program, who passed innovations they thought worthwhile along to the mayor, who was the city's chief legitimizer (1961:128). In a similar vein, Agger and his colleagues suggest:

> Political role specialization may develop in reference to these stages, [in the community decision process] so that in one community, or in the policy area in a community, some men - "idea men" - specialize in policy formulation, others specialize in deliberative activities, others in organization of political support, and still others may limit their participation to the final authoritative-consideration stage (1964:47).



Proposition 1 will be tested by the leader selection procedure. If development association members nominate leaders to each category more often than they nominate the same individuals to other categories, then we may say that there are three distinct roles in the collective adoption process.

If the leader roles are stable social phenomenon we might expect the leaders' communication behavior to be affected by their role (or possibly their communication behavior facilitates their playing a particular role). Researchers have found that individuals who interact frequently tend to be homophilous[1] (Rogers with Svenning, 1969:234). If we accept that leaders in the same category will be more homophilous than leaders in different categories, then leaders from the same category may interact more with each other, than with leaders from other categories.

> Proposition 2. Leaders in the collective adoption process communicate more with leaders performing the same role, than they communicate with leaders performing other roles.

Another indication that the three categories are different is provided by the propositions which follow in the present chapter. The propositions suggest that we may be able to distinguish between the leader categories in terms of their social and communication characteristics.

Introducers

Introducers combine the characteristics of the stimulators and initiators of the model for differentiated societies. We noted the

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1. Homophily is the degree of similarity on selected variables between pairs of inidviduals who interact (Chou and Rogers, 1966:1).

difficulty of establishing a clear distinction between the stimulators and initiators in Eastern Nigeria. The ambiguity of the introducing role is described in a recent study of a teacher who became a change agent in his own village.

> In many ways he was different. He was a teacher and representative of the federal government. He spoke fluent Spanish. He dressed in a non-Indian fashion and wore shoes with socks. He was worldly and generally regarded as having more knowledge than a priest...He talked of betterment and change, the goals of the revolution.
> On the other hand, the new teacher was still the same boy who had once laboured in the milpa with his fathers and brothers...He still spoke Maya, knew the terms of address, the ways of the curandero, and the spring rain ceremonies. None knew quite how to view him. In sum, his general role was highly ambiguous (Press, 1966:3-4).

In the Nigerian context, Hershfield (1968) studied "sons abroad", who are members of the village living in other villages or towns. They return home regularly carrying influence from other parts of the country, and they are often members of development associations. In the present study approximately one quarter of the association members live "abroad". Hershfield (1968:23) found that agricultural development in villages is positively related to the extent of the sons' abroad personal contact with the home village.

Placing Press's amd Hershfield's findings in the context of our model, and also using the model as a heuristic guide we can suggest the following postulate about introducers.

> Proposition 3. Introducers have more extrasystem contact than legitimizers or implementers.

Dickerson and Bertrand (1969:12), studying the communicator roles of opinion leaders, note that one category of leaders, whom they call initiators, have contacts with people who are not members of the same

neighborhood groups. Similarly, "The stimulator(s) very often is... a member of the system who is oriented externally via social relationships with members of other systems...So stimulators play an important role in relating the social system to the outside world" (Rogers with Shoemaker, 1970:9-13).

The development associations are parts of agricultural villages, and we expect the association's activities to be oriented toward agricultural development. Thus, propositions which combine agricultural issues and contact with other systems would appear to be appropriate.

> Proposition 4. Introducers have greater exposure to agricultural media than legitimizers or implementers.
>
> Proposition 5. Introducers have greater contact with agricultural extension agents than legitimizers or implementers.

The introducer's role in the collective adoption process designates him as a channel of information about innovations for the collectivity. If he is in fact performing this function then we might expect the following proposition.

> Proposition 6. Introducers have greater knowledge of innovation than legitimizers and implementers.

We noted that the introducer is the bridge between two systems; the collectivity and the innovative systems. In the context of less developed countries, it has been hypothesized that formal education increases intersystemic contacts (Waisanen, 1969:9). Thus we suggest the following proposition.

> Proposition 7. Introducers are more highly educated than legitimizers or implementers.

In Eastern Nigeria education is closely related to age because formal schools are comparatively recent institutions, and only the

younger members of the community have had access to them. Thus a further proposition about introducers,

> Proposition 8. Introducers are younger in age than legitimizers and implementers.

Returning to the model of the collective adoption process for guidance, we note that the process passes from introduction to legitimation. Thus we might expect introducers to interact more with legitimizers than with implementers. A finding from Back and others (1950) suggests a further proposition. Back and his colleagues studied rumor transmission in an organization and found that communication flows tended to be upward to the higher ranks in an organization. In development associations upward communication would tend to center on the legitimizers. Therefore, for our last suggestion about introducers, we propose:

> Proposition 9. Introducers interact more with legitimizers than with implementers.

Legitimizers

Legitimizers are the leaders who must be consulted about collective affairs: they make the decisions. "However measured or expressed, the legitimizer has a virtual monopoly of two of the scarce resources of any social system: status and power (Rogers with Shoemaker, 1970: 9-20). Thus:

> Proposition 10. Legitimizers possess higher social status than introducers or implementers.

Dahl (1961:169) found that power-holders in New Haven, Connecticut, were typified by higher income and more education (and other indicators of social status) than other members of the community. Miller (1953: 20), in his national study of 218 projects dealing with the adoption



of community hospitals found those active in the decision-making came from the businessmen, professionals, self-employed managers, farm owners, and civil officials. Fifty-seven percent of the population in the communities were classified as non-supervisory employees; this category furnished only four percent of the leaders (Miller, 1952 and 1968: 312). In four communities, Agger and others (1964:279) found middle and upper income citizens were overrepresented among the legitimizers. Findings also supporting proposition 10 are provided by Form and Sauer's (1960) study of Lansing, Michigan, Freeman and others' (1960:16) investigation in Syracuse, New York, D'Antonio and Form's (1965:557-587) cross-cultural study of influentials in Texan and Mexican towns, Skinner's description of the leadership of the Chinese community in Thailand (1958:46). The general findings from the studies listed in the previous paragraph also support the following proposition:

> Proposition 11. Legitimizers are wealthier than introducers or implementers.

In Nigerian villages wealth and social status are closely related to age; indeed, one might say that age is an indicator of social status (Uchendu, 1965:91). So:

> Proposition 12. Legitimizers are older than introducers or implementers.

Noting the legitimizer's central position in the collective adoption process, we suggest that he has contact with both introducers and implementers. A study of rumor in an organization by Back and others (1950) suggests that those higher in the organization in terms of rank address themselves to a larger number of group members. Back's finding was corroborated by Bales (1951:461-468) in a study of small group communication with students at Harvard University. So:



Proposition 13. Legitimizers interact more often with other leaders of the collectivity than introducers or implementers.

We suggested that legitimizers are the older and wealthier leaders of the development associations. These associations are committed to development, so we might expect the legitimizers to exhibit this commitment by being more innovative[1] than other members of the association. In a study comparing opinion leaders from modern and traditional Colombian villages, Rogers noted that opinion leaders from modern villages were more modern in their attitudes and behavior than opinion leaders from traditional villages (Rogers with Svenning, 1969:228-230). Opinion leaders reflect norms of the systems to which they belong. So,

Proposition 14. Legitimizers are more innovative than introducers or implementers.

Implementers

Implementers are those members of the collectivity who organize resources after the decision so that the innovation can be incorporated into the system. Our model suggests that a part of the implementing role is the transmission of the adoption decision to the group members. Dickerson and Bertrand (1968:14) when studying informal opinion leaders in rural neighborhood groups identified the role of diffuser. The diffuser "took his cue from the legitimizer and carried the message to clusters of families over whom he exercised influence" (1968:10). Characteristically, the diffuser communicated with the members of the local group (1968:14). Indications suggest that implementers are more

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1. Innovativeness is a characteristic of individuals who adopt more innovations than others, and also adopt them earlier than others in the social system.

locally oriented than the introducers, and interact more with the legitimizers than with the introducers. Thus:

> Proposition 15. Implementers have more intrasystem contacts than introducers.
>
> Proposition 16. Implementers interact more with legitimizers than with introducers.

We noted in Chapter I that among the Ibo and Ibibio community work is usually carried out by age grades. Characteristically, the middle age grades (35-45 years of age) are responsible for organizing the community work tasks, such as keeping roads clear and repairing communal properties (Uchendu, 1965:76-77). Thus, within the membership of the development associations, we expect middle-aged men to play the role of implementers. So:

> Proposition 17. Implementers are older than introducers, but younger than legitimizers.

Proposition 17 completes our propositional inventory describing some of the characteristics of the leaders in the collective adoption process, and relating those characteristics to the roles which the leaders play in the process. Now let us turn to the methods that we used to explore the collective adoption process in Eastern Nigeria.



Chapter III

CONCEPT MEASUREMENT AND DATA COLLECTION

In the present chapter we shall describe how the concepts developed in the previous chapter were measured, and then indicate how the data were collected in Eastern Nigeria.

Development Association

A development association was conceptualized in Chapter I as a collectivity of men united in the pursuit of the common interest of modernization and development. Development associations were identified in the villages as associations of villagers, recognized by a common name by members and non-members of the association, and perceived by the villagers to be contributing, more than any other association, to the improvement of village life. In each village one association was identified by asking 10 randomly selected villagers to list all the associations that existed in the village under various functional labels, such as religion, mutual-aid and sports, and then by asking them:

> Which, in your opinion, is the group in this village which is doing the most for progress of the village at this time?

Villagers were then asked to say why they had selected that particular group.

The association receiving the largest number of votes in each village was selected for the present study, except in cases of a tie where the reasons given for selection indicated the group performing

the greater development function.[1]

IDENTIFYING COMMUNITY STRUCTURES AND ROLES

The process of community leadership and leader roles has long been a focus of study in sociology and political science. A review of the literature reveals that three methods of identifying community roles have been utilized: positional, reputational, and decisional[2] methods. Each will be defined and assessed before we present the method used to identify participants in the collective adoption process in Eastern Nigeria.

Positional Method

The positional method "consists of simply defining community leaders as the incumbents of high positions in major community institutions--government, political parties, industry, labor unions, and the like" (Clark, 1968a:473). Lists of the leaders of community organizations are made by interviewers who talk to members of the organizations and visit their headquarters. Persons nominated most often, or more than a certain number of times[3], are then designated as community leaders. The positional method is based on the assumption that institutional leadership actually reflects community leadership; an assumption that has been questioned (Freeman, 1962:12-15; Dahl, 1958:463-469 ; Polsby, 1963:45). Freeman, in his study of leadership in Syracuse, New York,

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1. There was a tie between two associations in only one village.
2. Also known as issue analysis and the case study method.
3. The threshold number of nominations that a person has to receive in order to be considered a community leader has varied from study to study, but is usually in the range of three to five nominations.

used four methods of identifying leaders: Leadership in decision-making (active in 39 decisions), social activity (membership in voluntary associations), reputation, and position. He found that the proportion of agreement between position leadership and reputational leadership was 0.74[1], but only 0.39 and 0.22 between position and participation and between position and social activity leadership, respectively (1962:15).

Operationalization of the positional method is dependent upon the number of community institutions that can be readily identified by the investigator. D'Antonio and others (1961:443) were able to identify 10 institutional areas, including business, professions, education, labor and agriculture. Freeman (1962:15) identified a similar seven areas of community activity. This differentiation of institutions may be relatively easy in more developed societies that are characterized by their complexity and differentiation (Berlo, 1960:133ff.; Berlo, 1970; Weiner, 1966:3). But in villages, such as those in Eastern Nigeria, community institutions may not be well developed, and hence are difficult for a researcher to identify. Business, professional, and educational institutions may not be present in the village, and consequently leaders from those areas cannot be nominated. Thus, the positional method may not be suitable for identifying community leadership in less developed societies.

Reputational Method

The reputational method uses an individual's reputation of his involvement in community decisions to identify the leadership of the

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1. The proportion of agreements index was calculated as the ratio of actual number of agreements to their total possible number.

community. A number of community members are asked questions such as:

> In many communities, relatively few people are able to affect the outcome of issues sometimes because they are in a position to make key decisions or because they have the ability to persuade others to follow their leadership. Would you tell me the names of the most important and influential leaders in this community even if they do not hold public office? (Clark, 1968:470)

Community leaders are selected by counting the number of nominations that each person receives. Leaders are those receiving more nominations than an arbitrary threshold, usually three to five. Informants who provide the information (nominate leaders) are selected in a variety of ways, as indicated by Sollie (1966).

Sollie (1966:301-309), in a study of a low-income rural area of Northeast Mississippi, used four reputational methods to identify community leaders. Information was provided by: (1) a panel of experts, who were professionals who had lived and worked in the area for several years, (2) community leaders who were suggested by the panel of experts, (3) a series of interviews with community residents following the "snowball" technique[1] and, (4) a random sample representing approximately one-fifth of the area's population. Sollie's results indicate "agreement between the four techniques was fairly high" (1966:309).

The pioneering study that used the reputational technique was Hunter's investigation of the power structure of Atlanta, Georgia

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1. The "snowball" technique involves asking a respondent, usually selected randomly, to nominate persons using some criteria of selection. The second respondent is selected from the names provided by the first respondent. The third respondent is selected from the names provided by the second, and so on.

(Hunter, 1953). The method has since been adopted by numerous investigators, predominately sociologists, who have tended to find pyramidal or monolithic power structures in the communities they have studied[1] (Walton, 1966). The method has been persistently critiqued by political scientists, led by Dahl and his associates.[2]

The primary assumption of the reputational method is that politically active respondents will report political activities accurately. Wolfinger (1960) presents evidence that casts serious doubt upon the assumption. Studies comparing various methods of identifying leadership indicate that under some circumstances this assumption is warranted.

A further assumption is that the reputation for influence or power actually reflects the ability of those nominated to exert influence and power in community decisions. Gamson suggested that reputation itself was a resource that contributed to an individual's power: "reputational leaders are, with few exceptions, active on at least one of the three issues studied in their respective communities...and when they are active and united they are successful 3/4s of the time" (1968:347). He notes that the reputational leaders are often on opposite sides of the same issue, which makes predictions about the outcome of community decisions difficult by the reputational method (Wolfinger, 1960:644; Gamson, 1968:347).

Criticisms have also been made of the inherent assumption of the method that community influence is generalizable from one community

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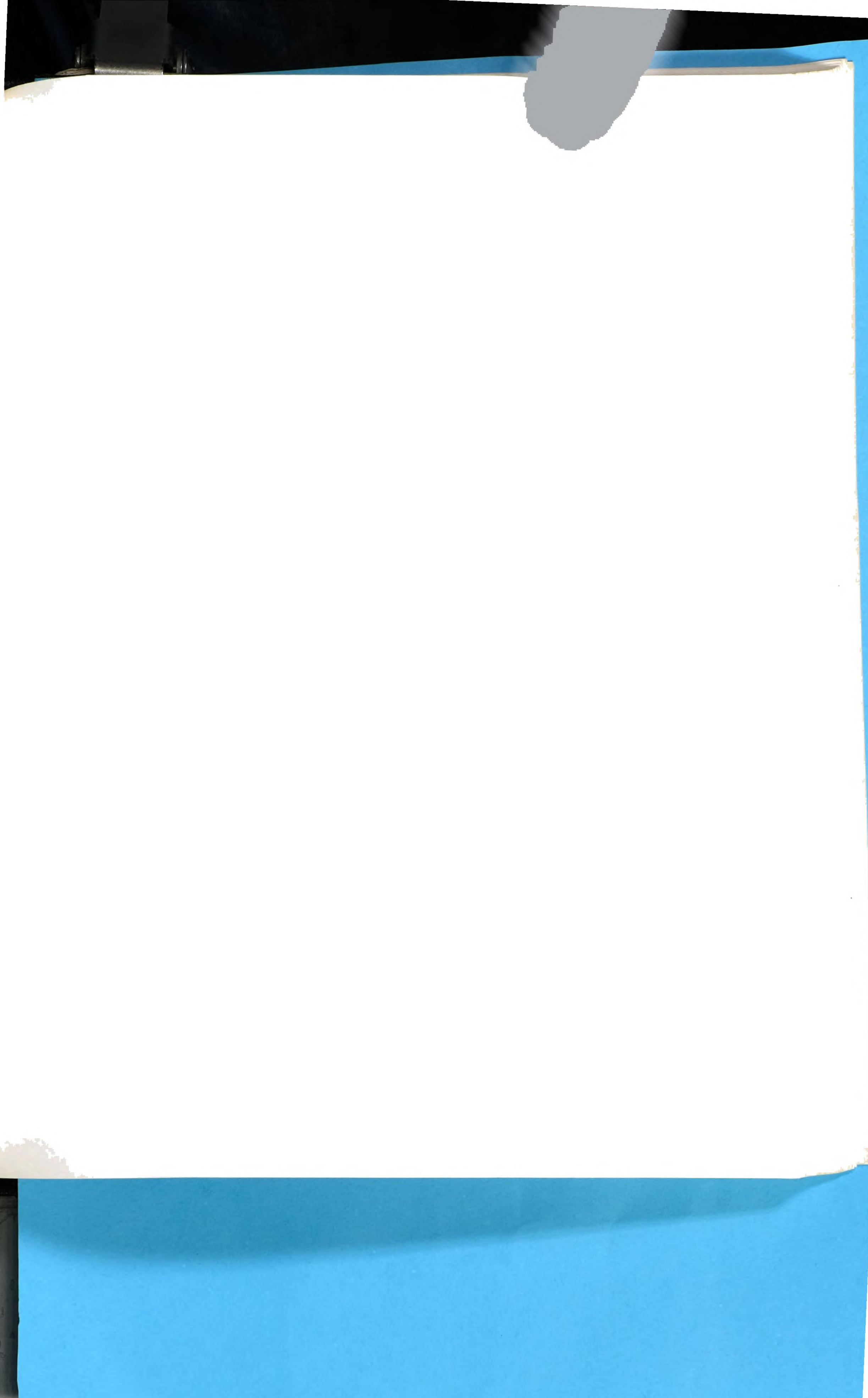
1. A pyramidal power structure consists of a monopolistic, monolithic, or single cohesive leadership group in the community (Walton, 1966:686).
2. The first critical articles include Dahl (1958), Polsby (1963), Wolfinger (1962), and have continued to Polsby (1969).



issue to another. Critics suggested that nominations are made on the basis of several criteria, such as influence in only one issue, influence in an issue salient to the respondent, or even on the basis of social status (Dahl, 1958; Wolfinger, 1960:643). The stability over time of the power structure identified by the reputational method was also questioned by Wolfinger (1960:644). D'Antonio and Erickson designed research to test some of these criticisms (1962:362-376). Studying five communities, they found there was considerable overlap in the leadership in several issue areas, and that leadership was independent of social status. In a study of two communities over a five year period, D'Antonio and Erickson found that substantially the same leaders were identified at the beginning and the end of five years (1962:376).

Wolfinger argued that arbitrary cut-off points are set by researchers who use the reputational method (1960:636-644), when threshold values for leader selection are established. The critics concede, however, that this danger is lessened in smaller communities where potential leaders are more likely to be known to the respondents. This concession has important implications for our study of relatively small development associations.

In spite of these criticisms, the users of the method have answered them to their own satisfaction and continue to use the technique, with a few modifications. An important modification for our study in Eastern Nigeria is called the "issue specific" reputational technique. The issues are identified to the respondent before he is asked to nominate influentials. In our study of development associations, we are solely concerned with developmental issues and influence that

is exerted in the innovation decision process.

The critics of the reputational method have been strong advocates of the decisional method, which we now consider.

Decisional Method

The decisional method, often called the case study approach or the issue technique, has been used largely by political scientists (Walton, 1966:690). It is based on the assumption that leaders can be identified by their activity in community affairs. The proponents of the method maintain that community influence and power can be observed in the study of community issues, using the basic case study method.

Users of the decisional method, known as pluralists, characterized themselves as "People who believe that for political purposes men may belong to groups, but in the United States rarely classes... that community power is dispersed in various ways" (Polsby, 1969:120), contrasting themselves with the users of the reputational method (elitists) whom they labelled as "People who believe that values are distributed hierarchically, and that an actor's position on some hierarchies predicts positions on others, etc." (Polsby, 1969:120). The pluralists tended to find power structures that are factional, coalitional, and amorphous in nature[1] (Walton, 1966:699), and thus verified their basic belief. Similarly, the elitists, led by Mills (1956) and Hunter (1953), found its predicted hierarchies in the communities that it has

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1. Walton (1966:685) defines factional power structures as two or more competing leadership groups in the community; coalitional power structures as fluid leadership groups that vary with issues; and amorphous power structures as the absence of any persistent leadership group in the community.

investigated (Walton, 1966:699).

Dahl (1961) and Freeman and others (1960 and 1962) demonstrated how the decisional method was used to study the politics of New Haven, Connecticut, and Syracuse, New York, respectively. In Syracuse a series of decisions were selected using criteria ensuring that the issues were representative of community issues in general (Freeman and others, 1960:7-8). Dahl selected three issue areas "because they promised to cut across a wide variety of interests and participants" (1961:333). Interviews with key informants, with a random sample of community residents, observer participation in some decisions and past records of decisions, were all used to construct detailed case studies of each issue. The decision method has provided researchers with more information about the process of decision-making than has the reputational method (Rogers with Shoemaker, 1970:9-7).

Issue analysis has been criticized, however, on the basis that "It, too, rests on assumptions of simple rationality, namely that only those whose actions are observable influence the outcome of a decision" (Press, 1962:iii). Sollie (1966:303) raises more practical objections:

> For the observation of human behavior, timing is a crucial factor. Researchers are often not able to observe the inititation of action leading to a decision. Further, researchers might find it impossible to observe all decision-making behavior relative to each phase of the issue. Third, an issue may require more time for resolving than researchers can spend in observation.

Sollie's comments are particularly pertinent for those studying communities in less developed countries where the availability of researchers trained in the case study method, such as Dahl (1961) used in New Haven, Connecticut, is severely limited. And in the context of the present study, where we hope to develop a method

suitable for rural change agents to use to identify collective adoption leaders, the comments are well taken, because a complicated, sophisticated, and time-consuming technique is of questionable use to change agents. In Nigeria change agents have only rudimentary training in rural change methods, and are already fully occupied with their current duties, so adding case studies to their work load appears impractical.

We feel issue analysis would yield a power structure that approaches the one identified when using the reputational technique if more issues were selected for study in each community by the researchers. We noted that the issues selected by Freeman (1960) and Dahl (1961) were chosen to represent diversity and wide participation across the community. It appears that within each issue area, however, decisions are dominated by the few (Freeman, 1960:26). "In origins, conception, and execution, it is not too much to say that urban redevelopment has been the direct product of a small handful of leaders"(Dahl, 1961:115). Similar results were also found in the other issue areas investigated in New Haven, Connecticut (Dahl, 1961:106,151,161,and 164). Thus he found in each issue area a small pyramidal power structure. If more than three (the number chosen by Dahl in New Haven) issues were studied, then more overlapping leaderships would probably be found. When the nominations for all issues are combined a generalized power structure approaching that found by the reputational methodologists might be found.

Freeman and others (1960:26) gathered evid ence that does not support our contention that the study of more issues might produce a pyramidal structure. They found less than three-tenths of one per

cent of the adults in the community, representing many groups and the full range of citizenry, participating directly in the making of 39 community decisions, with little overlap between decision areas. In Syracuse, New York, there is a small group holding power, but they are spread throughout the community. There is no central power clique as advocated by the elitists. Syracuse is a large metropolitan area, however, with a population of 395,000 in 1957, and we may find that pyramidal structures predominate in smaller communities. As Presthus points out:

> Communities of, say, 5,000-20,000 people, by virtue of a less differentiated economic system and the absence of several large banking and industrial interests with their skilled officials who could provide countervailing elites, might be characterized by an elitist type of power structure. In effect, the limited number of people possessing leadership skills would mean that influence was thrust into their hands (1964:45).

More recently, in a study of 51 American communities, Clark (1968b:585) found correlational evidence that the smaller the community population, the more centralized the decision-making structure.

The debate between the elitists and pluralists was still relatively young when several researchers suggested that studies utilizing both methods in the same communities might resolve some of the arguments. Schulze and Blumberg "strongly suggest the advisibility of studying a community's power structure from at least two methodological perspectives..." (1957:296). This advice was repeated by Walton in 1966, after he had analyzed studies of 55 communities completed by 33 researchers (1966:689). In spite of such encouragement the number of comparative studies has been few, but they will be summarized briefly.

Reputational and Decisional Methods Compared

The early study by Freeman and others (1960 and 1962), previously reported, indicated that there was little correlation between the lists of leaders identified by the reputational and decisional methods, but as we mentioned this finding was only in a large urban community. In two smaller communities in New York State, Blankenship, using decisional and reputational methods, found that:

> There is considerable overlap in the results produced by our two measures of power in Mapletown and West Valley and in that sense leadership may be said to be homogeneous: reputation and action join. We don't find the sharp distinction between them that some writers would have predicted and Freeman and his associates report in Syracuse (1964:216).

Presthus (1964) and Agger and others (1964) demonstrated that the use of both reputational and decisional methods are superior to using either alone. After a careful analysis of the available evidence, Presthus decided to change his original decision to use only the decisional method because:

> We decided that the two methods were better conceived as mutually supportive means of ascertaining power... Each method, in effect, became a foil against which the evidence provided by the other could be tested and modified. It soon became clear that the reputational method had a great deal to contribute in refining the somewhat gross power ascriptions provided by the decisional technique (1964:59).

Comparing the two methods on a study of a rural trade center in Missouri, with a population of 4,200, Watson and Lionberger (1966:31) found that the average percentage duplication of leadership in several issue areas was 39.7 per cent.[1] Concentrating on the community

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1. The issue areas were education, community development, economic development, farming affairs, and resources development.

development and economic development areas, the percentage overlap between the leaders nominated by the reputational and decisional methods were 53.8 and 63.2, respectively (1966:32). Watson and Lionberger (1966:33) further found that the decisional method tended to identify leaders who had been very active in past decisions, while the reputational method isolated leaders active in current issues, and also perceived by respondents as those who are most likely to influence future decisions.

Working in two Southern trade centers of 20,000 to 25,000, Preston compared the reputational and decisional techniques. He concludes "...the most striking finding was that essentially the same leadership grouping was identified by the different measures used...and...the action[1] and reputational measures were highly related " (Preston, 1969:561).

Finally, for another comparative study, we move to villages in a less developed nation, to an environment more like the one in which the present study was completed than the environs in which the previously reported comparative studies were executed. Singh (1970) analyzed the leadership in two Indian villages, one modernizing rapidly, and the other more traditional. He used both the decisional and reputational methods, calling them action and recognition methods, respectively. His findings indicate a close correspondence between the leaders identified by the two methods in the more modern village, but little correspondence in the traditional village (1970:11). Singh's

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1. Action is Preston's name for operations he performed that others have called issue analysis, or decisional method.

results have important implications for the present study. Because we concentrated our research efforts in the more modern villages of Phase I[1], we might expect that the reputational and decisional methods would identify substantially the same leaders in that type of village.

At this stage we transfer our interest from the community to a collectivity at another level. We are interested in applying the research methods just discussed in the development associations of Eastern Nigeria.

IDENTIFYING ROLES IN THE COLLECTIVE ADOPTION PROCESS

Originally, it was planned to add another study to the literature comparing the reputational and decisional techniques of identifying roles in collective processes. When it became evident, however, that we would only be able to use the reputational method, we decided to continue with the research for the following reasons:[2]

1. There is no clear evidence to suggest that one method is superior to the other, indeed there are several indications that they are complimentary (Presthus, 1964:59), particularly in the more developed villages of less developed nations (Singh, 1970:11).

2. In smaller communities and groups, pyramidal structures are

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1. During Phase I of the Diffusion of Innovation in Rural Societies research project, Eastern Nigeria Ministry of Agriculture change agents were asked to identify "success" villages as those where they had had most success with their extension programs. Results from Phase I indicate that "success" villages were relatively more modern than other villages studied (Hursh and others, 1968:73-75).
2. In addition to the reputational study in villages, I had originally planned a detailed decisional analysis of collective adoptions in two villages. An appendectomy and post-operational complications severely limited my field work, and the decisional analysis was cancelled.

more common (Clark, 1968b:585), and the reputational method has normally isolated such structures (Walton, 1966:684).

3. The method we used is close to the issue specific method, mentioned earlier in this chapter, which meets some of the objections to the reputational method. The specific issue in the present study was collective adoption, and we sought to identify persons who performed different roles in the collective adoption process. Rather than asking for general community leaders, or even leaders in each of several issue areas, we asked informants to identify leaders who performed certain limited functions. This adaption of the reputational method allowed us to make some inferences about the process being studied, an advantage previously enjoyed by the users of the decisional method (Rogers with Shoemaker, 1970:9-7).

4. Looking at the two methods from a more pragmatic angle, we note that the reputational method fits much more easily into the existing survey research design of Phase II of the Diffusion Project. As Sollie, who used the reputational method, points out, "Further checks would have been possible through observational techniques, but neither time nor financial support were available for such extended investigation (1966:309). In the present study, trained manpower was not available to launch an intensive decisional study in several communities, but it was possible to incorporate the reputational study into the Phase II[1] survey methods, without greatly increasing the work of the interviewers.

5. A pragmatic objective of the present thesis is to provide change agents with a method of analyzing the leadership of the collective

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1. Phase II of the Diffusion Project is explained in Chapter III.

adoption process. In less developed countries, such as Eastern Nigeria, change agents have a minimum of training in change methods and could not embark upon the complicated methods required in decisional analysis. The reputational method can be easily taught and fitted into the existing strategies that the agent may have for getting-to-know the communities in which he is working.

Having indicated why we used the reputational method, let us now describe how we operationalized each of the roles in the collective adoption process.

Introducing Role

The introducing role is defined as the role of bringing innovations to the attention of the development association. To identify introducers, the nominations of ten randomly selected association members were counted after they had been asked the following question:

> Your group has been involved in many village development projects. Who are the members who usually bring these new ideas to the group?

The two nominees in each development association who received the most votes were selected for interview as representatives of those performing the introducing role.[1]

Legitimizing Role

The legitimizing role is conceptualized as the role of sponsoring and sanctioning new development ideas, before the ideas can be incorporated into the social system. Legitimizers were identified in a way similar to that used for introducers by the following

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1. Further details of selection procedures are discussed later in this chapter, and in appendices B add C.

question:

> Who are the members of...[development association] who must be consulted before any projects can be started?

Implementing role

The implementing role involves communication and activity that takes place after the decision to adopt an innovation, in order to incorporate the innovation into the social system. Following the method used to identify introducers, respondents were asked to nominate group members with the question:

> Who are the members of your group who organize the members to work on the projects so that they are completed?

Now, let us turn to the social and communication characteristics of the three role types that we used to further explore the process of collective innovation.

SOCIAL AND COMMUNICATION CHARACTERISTICS OF LEADERS[1]

In the propositions formulated in Chapter I we have used several variables, such as, extrasystem contact, social status, and wealth, which were measured through a series of indicators. Indicators are variables which can be measured during data collection to provide measures of conceptual variables used only at the theoretical level.

Social Characteristics

1. Age

Age is measured as the number of years since birth. In Nigeria no record of births is maintained, so often people are unsure of their

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1. Questions used in the Nigeria interview schedules to gather data on social and communication characteristics are included in Appendix D, with the codes used to assign values to individuals.

exact ages. However, individuals do know their age in relation to others in the village; for example, a man will know who is senior and junior to him in terms of age. Interviewers visited several of the well-known members of the community and spent time with each of them determining their age accurately, using historical references. A list of ten villages was compiled so that their ages covered a range from 25 to 70 years old. Then a respondent was asked to place himself between two persons on the list, and in this way an estimate of his age was obtained.

2. Education

Indicators of education measured in the present study are:

a. Level of schooling attained by respondent.

b. Self-professed ability to read native language and English.

c. Results of an English functional literacy test.

3. Social Status

Social status is used in the present study to denote differences in the distribution of prestige within a system. A person with high social status is one with much prestige (Gould and Kolb, 1964:692). In traditional societies large families bring great prestige to the head of the family, so indicators of social status measured in Eastern Nigeria are:

a. Total number of children individual has.

b. Total number of wives individual has.

c. Ratio of number of offices held in village organizations to the number of organizations in which individual is a member.



4. Wealth

Wealth is usually thought of in terms of income and accumulated monies belonging to an individual. Income and money, however, are not the only indicators in an economy that is still basically subsistence. Therefore, in the present study, wealth is defined as accumulation of resources, and is indicated as follows:

a. Type of house owned by respondent.

b. Extent of commercialization of farm crops (the more commercialized the farm, the more money a farmer is able to accumulate).

c. Size of farm, indicated by (1) number of laborers hired by respondent, and (2) number of yam poles[1] harvested during previous year.

d. Index of level of living, measured by material possessions.[2]

5. Innovativeness

Innovativeness reflects an individual's tendency to adopt more innovations that others, and also adopt those innovations earlier than other members of the system. Two indicators of innovativeness are measured in the present study:

a. Number of agricultural innovations currently being used at the time of interview.

b. The total number of years that respondent had been using any of 14 agricultural innovations.[2]

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1. In Eastern Nigeria, the most prestigeous foodcrop is yams and farmers try to grow as many as they can. When harvested, the yams are tied between poles for storage. In a village the poles are a standard size, so the number is an indication of the size of the farm operation.
2. Material possessions, agricultural and health innovations are listed in Appendix D.

6. Innovation knowledge

Innovation knowledge is a respondent's awareness and understanding of new ideas, practices, and methods in agriculture and health. Indicators are:

a. Aided recall of names of 14 specific agriculture innovations.

b. Specific items of knowledge of 14 agricultural innovations.

c. Detailed knowledge of three agricultural innovations.

d. Knowledge of four health innovations.

Communication Characteristics

1. Interaction within the Collectivity

Interaction within the collectivity denotes the amount of communication that the respondents have with those members whom the respondent nominates to the leadership categories. Each member of the development association was asked to nominate three persons to each leadership category, and then the respondent was asked how many times during the past month he had talked to the first person he nominated in each category. Thus the indicator of interaction between two individuals was the number of times that the respondent speaks to a member of the association whom he nominates to a leader category.

2. Extrasystem Contact

Extrasystem contact is the degree of exposure, both physical and psychological, which a respondent has with other social systems. Indicators of cosmopoliteness used in the present study are:

a. Living outside the community weighted by distance from village and degree of urbanization of places lived in.

b. Visiting outside the village during the past year, weighted

by distance and urbanization of the places visited.

c. Exposure to mass media, such as radio, newspapers, and films.

d. Degree to which news of other systems comes from sources outside the village.

3. Intrasystem Contact

Intrasystem contact is the characteristic displayed by people who rely on sources within the community for information about other systems in the world outside the community. Indicators are:

a. Degree to which news of other systems comes from sources within the community.

b. Extent to which knowledge of innovations comes from sources within the community.

4. Contact with Agricultural Change Agent

Contact with the agricultural change agent is denoted by knowing the change agents and also having talked to a change agent during the past year. Indicators are:

a. Ability of respondent to name correctly the change agent serving his village.

b. Respondent talked to change agent during past year.

5. Exposure to Agricultural Media

Exposure to agricultural media is the degree to which the respondent has seen or heard a variety of media carrying agricultural information. Exposure is indexed through the following indicators:

a. Read (or had read to them) an agricultural newsletter or pamphlet during the past year.

b. Saw an agricultural demonstration during the past year.

c. Heard an agricultural radio program during the past year.

d. Saw an agricultural film during the past year.

e. Attended an agricultural lecture during the past year.

Now let us describe the methods used to gather data in Eastern Nigeria.

COLLECTION OF DATA IN EASTERN NIGERIA

The study of development associations was an integral part of Phase II of the Diffusion of Innovations Research Project.[1] Detailed descriptions of the methods of data collection used in Phases I and II of the Diffusion Project are contained in previously published reports (Hursh and others, 1968:26-48; Ascroft and others, 1968:23-31; Hershfield, 1968:82-113). In the present chapter we shall limit our discussion to those aspects of the methodology pertinent to an understanding of the study of the collective adoption process.

The Diffusion Project was located in Eastern Nigeria because, among other reasons[2], the United States Agency for International Development Mission in that region was interested in obtaining the kinds of information that the Project would provide so that they could improve their technical assistance program for the Government of Eastern Nigeria. Logistical support and headquarters were provided by the Economic Development Institute of the University of Nigeria, Enugu.

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1. The author of the present study was Assistant Project Leader of the Nigerian Diffusion Project from 1965-1967, and designed the methods and directed data collection for the present study.
2. Other reasons included logistic and political problems.

Sampling

The unit of analysis for Phase I of the Diffusion Project was the village, but because of the inadequacy of the region's census data, it was not possible to sample villages directly. A multistage sampling technique, starting at the county level, was used.

County Selection

There are approximately 300 linguistic groups in Eastern Nigeria so the language problems for survey researchers are severe. The Ibo and Ibibio speaking peoples, however, comprise 80 per cent of the population, and it was decided to concentrate the study in the areas where they resided. There are six main ethnic groups (Forde and Jones, 1950: map); four among the Ibo, and two in the Ibibio[1], which were represented in the sample because ethnic differences might affect the adoption process being investigated. The population of each ethnic group was determined from the 1952 census.[2] Counties were listed according to the ethnic area in which they were included, and a random, proportional sample of counties was drawn, each ethnic group contributing to the final sample according to its relative population.

Village Selection[3]

The Eastern Nigeria Ministry of Agriculture Extension Supervisors and their staff in each county were asked to identify the village in

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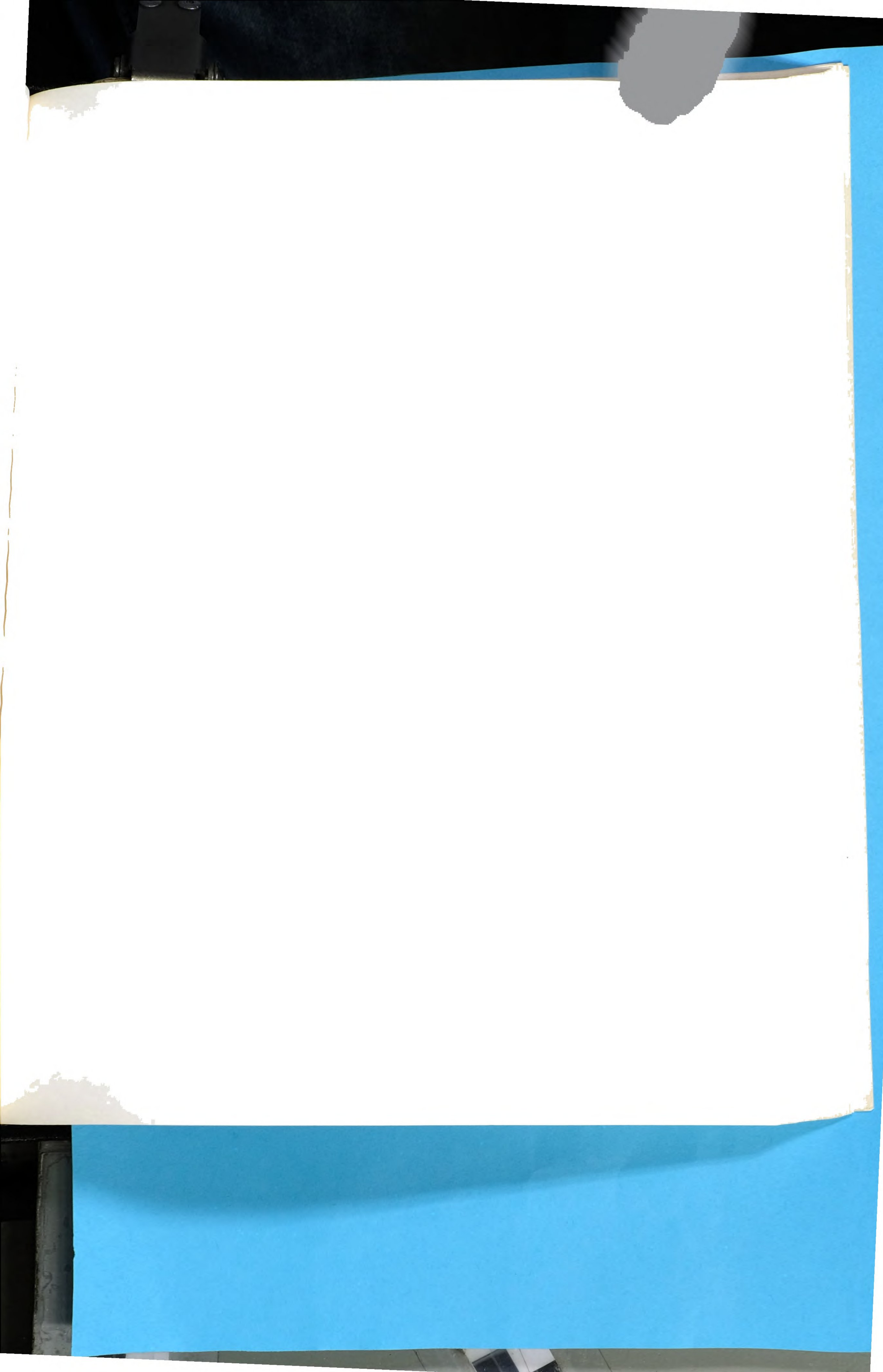
1. Among the Ibo: Northern, Southern, Eastern and North-East; and among the Ibibios: Annangs and Efiks.
2. A detailed breakdown of the 1963 Regional Census was not available at the time the sample was drawn.
3. Because of the dispersed settlement pattern in much of Eastern Nigeria, the definition of "village" is complicated. For a discussion of this problem, see Hursh and others(1968:30, 67-68).



their county where they had most success with their extension programs (this was labelled the "success" village) and also the village in which they had least success (the "failure" village). The Phase I study was completed in 71 villages identified by this method.

All the Phase II villages were selected from among the "success" villages of Phase I because one of the objectives of Phase II was to study the correlates of individual innovativeness, and the only villages that contained a sizeable number of innovators were the Phase I "success" villages.

The 34 "success" villages were scored on two criteria:

1. External Access, defined as the degree to which the village had contact with the outside world in terms of potential access to communication.[1]

2. Institutional Development, defined as the degree to which developmental institutions and practices vital to the process of modernization and change were present in the village.

Villages were ranked on both criteria to produce external access/institutional development continua. It was planned to select villages so that all points on the continua were represented, but the selection criteria were comprised by two factors. First, the language capacity of the interviews[2] was limited; each represented a dialect area, so he could not be employed efficiently outside of that area. Second, the difficulty of travelling to some villages during the wet season (the

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1. Measures of access and institutional development were taken from the Village Observation Schedule of Phase I, and are listed in Appendix A.
2. Interviewer selection and training is discussed later in the present chapter.

season during which Phase II was completed) excluded two villages from the sample.

One village was excluded from the present development association study because a local leader insisted that four villages forming a small town be studied instead of one of the villages, and there was no single association that represented the four villages. Also, as the area of the town was large, it was not possible to map the area, so households were not numbered and respondents could not be identified by household number for the coding of the leader nomination questions. The 17 villages selected for the present study are shown on Map 3-1.

Random Sample Selection of Phase II Respondents

The eligible respondents in Phase II were farmers, identified as men over 20 years of age who farmed land of any size under any tenure system. Unfortunately, there were no ready-made lists of farmers in villages, so the first weeks of the field work were spent mapping the compounds of each village and listing all the farmers who lived in those compounds. A random sample of 65 farmers was selected by the interviewer's supervisor from the completed list, because interviewers could interview approximately 65 in the three weeks available to them. At the same time 10 more farmers were randomly selected as substitutes, to replace any of the original 65 farmers who could not be interviewed. In villages of less than 65 eligible respondents, all eligible respondents were interviewed.

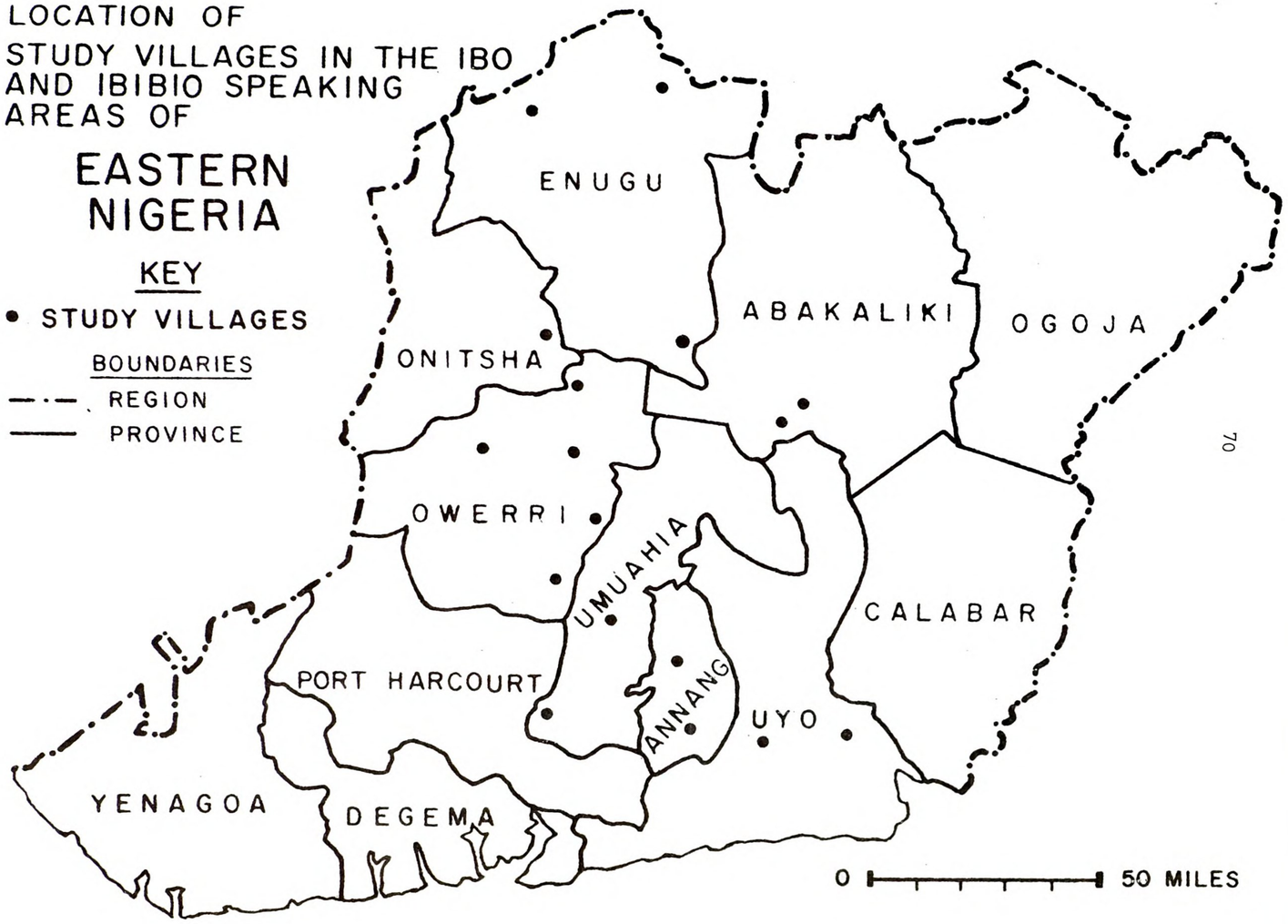
Development Association Selection

During the first two weeks of their stay in each Phase II village, the interviewers were asked to talk to 10 randomly selected informants

Map 3-1.

LOCATION OF
STUDY VILLAGES IN THE IBO
AND IBIBIO SPEAKING
AREAS OF

EASTERN NIGERIA



and obtain from them a list of all associations in the villages. The questions were worded so that the associations were classified according to functions, such as labor, entertainment, educational, etc. The last questions asked of each informant were designed to determine which association was "doing the most for the progress of the village at this time?"[1] Informants were also asked why they had named that association, and some details of the activities and projects of the association, as well as the names of the leaders were collected.

The nominations of each development association were counted and the organization receiving the most nominations was selected for further study. Thus, in each village one development association was studied in detail, and the interviewers obtained data about the group from at least three or four members. Details of the association's objectives, number of members, officers or senior members, basis of membership, place of formation and affiliation with other groups, details of programs and projects, etc. were collected.[2]

Leader Selection

A complete list of the members of each development association was obtained by the interviewers from the officers of the association. Ten members, randomly selected, were asked to nominate three categories of leaders in their association. The full name and compound number (taken from maps made by the interviewers) for each leader mentioned by

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1. This question is taken directly from the group selection questionnaire. Copies of the field instruments are in Appendix B.
2. Similar association description sheets were completed for six groups performing other functions in the village, but these data will not be used in the present thesis.

the informants was recorded (Appendix C). The three categories for leader nominations were:

1. Those persons who introduce development ideas to the group -- introducers.
2. Those persons who consider and accept or reject these ideas, on behalf of the whole group -- legitimizers.
3. Those persons who turn those ideas into projects by activating and organizing members to complete the project -- implementers.

Nominations were counted for each person mentioned in each category and the two leaders who received most mentions in each category were selected for interviewing as representatives of each category of leader in the association. In cases where one person received most mentions in more than one category, he was selected in that category where he had received the most nominations. If two persons were tied for a position in any category, then the person receiving the most mentions across all three categories was selected.

The sampling procedures used in the present study, summarized in Table 3-1, allow us to separate six categories of villagers, association members, and association leaders for further analysis. They are listed in Table 3-2. Fifty-one of the selected leaders were interviewed as a part of the Phase II random sample of village farmers, but for analysis they were separated from the randomly selected villagers and placed with the other 48 leaders selected by the reputational method.

Table 3-1. Summary of sampling procedures in the study of development association in Eastern Nigeria

Sampling Unit	Number in Sample	Method of Sampling
1. Country and Region	1:1	Purposive selection
2. County	30	Random: probablity proportionate to size of population
3. Villages for Phase I	71	Purposive selection by extension supervisor and staff
4. Villages for Phase II	18	Purposive selection from Phase I "success" villages
5. Phase II Respondents	1142	Random
6. Development Associations	17	Purposive: nomination by 10 villagers
7. Leaders of Development Associations	99	Purposive: nominations by 10 group members
8. Association Members (includes 51 leaders)	393	Random: part of Phase II respondent sample
9. Members but not leaders	342	Purposive: after eliminating leaders from random sample of members
10. Non-Members of Associations	749	Random: those from Phase II respondent sample not association members

Table 3-2. Respondent categories used in present development association study

Category	Number in Category	Type of Sample
Association Members	393	Random
Non-Members of Association	749	Random
Introducing Leaders	33[1]	Purposive
Legitimizing Leaders	32[1]	Purposive
Implementing Leaders	34	Purposive
Association Members with Leaders Removed	342[2]	Purposive

1. The number of each category of leaders should be 34, but during the hurried evacuation of the Diffusion Project staff from Enugu, prior to the Nigerian-Biafran War, the original questionnaires were left behind. Most association leaders could be identified through their compound numbers that were recorded on leader selection sheets and the Phase II maps. But in one village two legitimizers and one introducer lived outside the village and were not assigned a compound number, so they could not be identified at Michigan State University during leader identification.
2. Some association leaders were interviewed in the Phase II random sample of villagers. When the leaders and non-members were removed for leader comparisons, the remainder were a purposive sample of association members.

Interviewing

Each member of the Phase II random sample of villagers and those association leaders, purposively selected but not in the random sample, were asked about their innovative, communication and modernization behaviors in an interview schedule which took, on the average, 60 to 75 minutes to administer. Each respondent who acknowledged being a member of the association being studied in his village was asked questions to determine whom he thought were the leaders of his group, and how

often he talked with them during the past month.

Interview schedule construction

Indicators and measures of those indicators of the concepts of modernization, innovation and communication were gathered from the following sources: Previous diffusion studies gathered in the Diffusion Documents Center at Michigan State University, Eastern Nigeria Government sources, pilot studies conducted in Western Nigeria by two members of the Diffusion Project staff[1], and the experience gained during Phase I of the Nigeria Diffusion Project.

Draft interview schedules were drawn up and given to two Nigerian graduate students who spent several weeks in one village discussing the questions with farmers and trying to tease out new variables that might help to explain the process of adoption. During these weeks the present author spent many days with the investigators and the village informants, concentrating his enquiries on the development groups in the village, and the methods of selecting leaders performing functions in the collective adoption process.

The interview schedules were translated during a week in the headquarters in Enugu, before the pre-test in the field. Pairs of interviewers translated a section of the survey instrument at home each evening. The following day each pair presented their translation to the

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1. The studies were: (a) Ilewo Farmers Survey: a study of innovativeness among 364 farmers living in a village near Abeokuta, Western Nigeria in March, 1966 (the investigator is the author of the present thesis); and (b) Ekiti Cocoa Survey: a study of the adoption of a new cocoa variety and related practices by 150 farmers living in five villages in Ekiti Division, Western Nigeria in 1965. The investigator was Niels Roling.

assembled Project staff and differences were then reconciled. The final translations were given to senior Nigerian social scientists, who knew nothing of the specific content of the questions, and they translated from the Ibo and Ibibio back into English. This back-translation indicated a few points that had not been clearly understood by the interviewers, and translations of the interview questions were modified accordingly.

Final drafts of interview schedules and field procedures were drawn up and given to the interviewers for a five week full scale pre-test in villages from Phase I not selected in the Phase II sample. Techniques for mapping the village compounds and enumerating the population of farmers were finalized. Items were selected for the final interview schedule on the basis of their discriminatory power, their ease of comprehension, and the ease with which they could be administered by the interviewers.

Interviewer Selection and Training[1]

Nine senior interviewers from Phase I were employed for Phase II, as they already had valuable experience with the Diffusion Project, had at least a teacher's training certificate and rural experience, were 25 years old or more, and were culturally and linguistically suitable for the Phase II villages. Nine junior interviewers who had no prior experience with the Diffusion Project were hired for Phase II. The senior interviewers played an important role in training their junior colleagues. A senior and junior interviewer comprised a team

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1. More detail is given in the Phase I Report by Hursh and others (1968:39-42).

that spent about six weeks in each Phase II village.

Training began with one week in Enugu, when rapport building, field behavior, and familiarity with the Regional Government's development programs were stressed. Mock interviews with project leaders and fellow interviewers were an important part of the training. The second week was spent in translation of the schedules, and methods of respondent identification and selection. The interviewing teams were then deployed into nine pre-test villages, and for three weeks they carefully tested all the field procedures. During this field period, supervision by the Project leaders was frequent so that problems could be solved soon after they arose, and solutions passed rapidly to other teams of interviewers.

A final week of training and pre-testing was spent in Enugu, debriefing, making final changes in the interview schedules after careful analysis of pre-test findings, and finalizing the procedures and time-table of field operations.

Field Strategies and Supervision of Interviewers

Each interviewer was given a travel allowance so that they could travel between villages on public transport. Within villages they travelled on their own bicycles, for which they received a maintenance allowance. Each interviewing team spent six weeks in each of two villages, and during that time interviewed about 65 respondents and completed the development association study. Administration of each interview took an average 60 to 70 minutes, and each interviewer could ususlly complete only two or three interviews a day, because respondents tended to be available only in the early mornings and evenings.

The field procedures for both Phase II and the development association studies are summarized in Table 3-3. Field work began in October, 1966, and was completed in February, 1967.

All interviewing teams were supervised by Project leaders once a week. Prior to the teams' departure for the field, they were provided with written copies of all training materials and field procedures in the form of a field manual. Any changes in the instructions were rapidly circulated to all teams.[1]

Supervisory visits were used to check the operation of the field procedures by the interviewing teams, as well as building the interviewers' morale. Selection of the random sample was completed by the supervisors and each interview was carefully checked in the village as the interviews were completed each week. Development associations were selected by the present author at the Project headquarters where selection forms were brought by the interviewer supervisors. Results of the selection were returned to the interviewers during the following weekly supervisory visit. Association leaders were selected by the supervisors during the supervisors' fourth visit to each village.

After each supervisory visit, a written report was filed so that a record of all problems, etc. was ready for the next supervisor to visit that village.

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1. A newsletter, called "Diffusion of News", was published by the Project periodically. It contained any changes in procedures, and was intended as an internal communication organ and morale builder for the interviewing teams who were isolated from each other.

Table 3-3: Summary timetable of interviewing procedures in each village in the development association study

Week	Phase II study	Development Association Study
First	Rapport building Mapping compounds Enumerating respondents	Rapport building 10 interviews for group selection
Second	Rapport bullding Mapping compounds Enumerating respondents	Interviews returned to Enugu for group selection by present author
Third	Respondent selection in village by the super-visor	Listing of group members . 10 member interviews for leader selection
Fourth	Interviewing respondents	Selection of group leaders by super-visor
Fifth	Interviewing respondents	Interviews with six group leaders
Sixth	Interviewing respondents	Completion of six group descriptions

DATA-ANALYSIS

Data-Coding

All aspects of the coding for Phase II were completed at the Project headquarters in Enugu. The interview schedules were reviewed carefully as they were brought in from the field. Those containing errors or omissions were returned immediately to the interviewers for a call-back on the respondent for correction. After the completion of the first nine villages, preliminary categories for codes were established and a code book was written. The codebook was finalized

after the completion of the 18 Phase II villages. Interviews with the development association leaders were also coded at this time.

Statistical Analysis

The propositions suggested in Chapter II are phrased in a comparative form. We ask how one group of respondents is different from another group of respondents. Category averages, and in some cases the distribution of a variable among the categories (frequency counts), will be used to assess differences between the groups.

Statistical tests of significance will not be used in the present analysis. Chi-square tests for many independent samples might have been used with the nominal data, the Kruskal-Wallis one-way analysis of variance might have been used with ordinal data, and the simple one-way analysis of variance with interval data. Our data, however, do not lend themselves to statistical decision models which assess differences between categories in terms of the differences that one might expect to be due to sampling error.

The sampling procedures used in the present study, summarized in Table 3-1, were both purposive and random at various stages. Thus, in order to generalize to the various populations we must be able to calculate errors that we would expect to be due to the sampling procedure at the relevant level in the population. In the present study the last two sampling stages were purposive, and the selection of leader categories did not yield independent samples of leaders[1], because when a leader was chosen for the introducer category, he could

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1. Many statistical tests are based on the assumption that the samples are independent.

not be chosen for either of the other leader categories, thus individuals did not have an equal chance of being allocated to any category. Nor are the samples matched on variables which would allow us to use statistical tests for related samples.

Statistical tests are of doubtful value when their basic assumptions cannot be met by the nature of the data, and there is no way of knowing what effect the violations of assumptions will have upon the validity of the tests. In the present study, which is exploratory, differences between the categories of leaders will be assessed by looking at means and frequency distributions. Differences between groups in the predicted direction allow us to conclude that a proposition is supported. If differences are so small, however, that they are of little social significance[1], temptations to resort to statistical decision-making methods will be resisted, because in cases such as the present thesis, where violations of assumptions are difficult to assess, use of statistical tests are misleading, and may lead one to believing that propositions are supported on the basis of erroneous evidence.

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1. A socially significant difference, called a substantive significance by others (Morrison and Henkel, 1969), indicates a difference in behavior observable in the two groups, and also has theoretical predictive power.

Chapter IV

SOCIAL AND COMMUNICATION CHARACTERISTICS OF LEADERS, ASSOCIATION MEMBERS, AND NON-MEMBERS

The present study of development associations was an integral part of Phase II of the Diffusion Project. This facilitated the collection of comparable data about association leaders, association members, and villagers who were not members of the selected development associations. From the data collected, characteristics have been chosen as a basis for exploring the differences between the three mutally exclusive categories of respondents. Indices of the selected variables are shown in Table 4-1.

Association members are approximately the same age and have the same sized families as ordinary villagers, but association leaders are about four years older and have almost three more family members, on the average. Through all the other indicators in Table 4-1 we note a constant trend. Members tend to exhibit more of each variable than the villagers, and leaders possess more of each characteristic than either the leaders or the ordinary members. Compared with non-member villagers, members are better educated, have larger farms and better living conditions, have more extrasystem contact and are more innovative. Leaders are to members, as members are to villagers; the leaders have the most of everything "modern".

Now let us explore the propositions suggested in Chapter II.



Table 4-1. Comparison of villagers, development association members and development association leaders on selected social and communication characteristics

Selected Characteristics	Range	Villagers (N=749)	Members (N=342)	Leaders (N=99)
1. Age in years	0 - 99	43	44	48
2. Family size	0 - 44	6.01	6.20	8.78
3. Mean level of education index	0 - 6	0.51	0.59	0.80
4. Mean functional literacy score	0 - 35	5.97	7.75	9.73
5. Farm size; mean no. of laborers hired	0 - 30	2.25	3.22	5.32
6. House type index	0 - 2	0.23	0.32	0.52
7. Level of living index	0 - 9	2.32	2.87	4.40
8. Percent obtaining news of Enugu from sources outside village	0 - 99	59	70	75
9. Mean radio exposure score	0 - 14	2.30	3.34	5.26
10. Mean number of agricultural innovations used in 1966	0 - 14	1.64	3.09	5.24

INTRODUCERS, LEGITIMIZERS AND IMPLEMENTERS

Our first concern is to determine if the members of the development associations are able to identify three distinct categories of leaders in the collective adoption process.

> Proposition 1. In the collective adoption process, three categories of leaders can be identified as introducers, legitimizers and implementers.

Empirical proposition 1. Members of development associations agree about their colleagues as introducers, legitimizers and implementers.

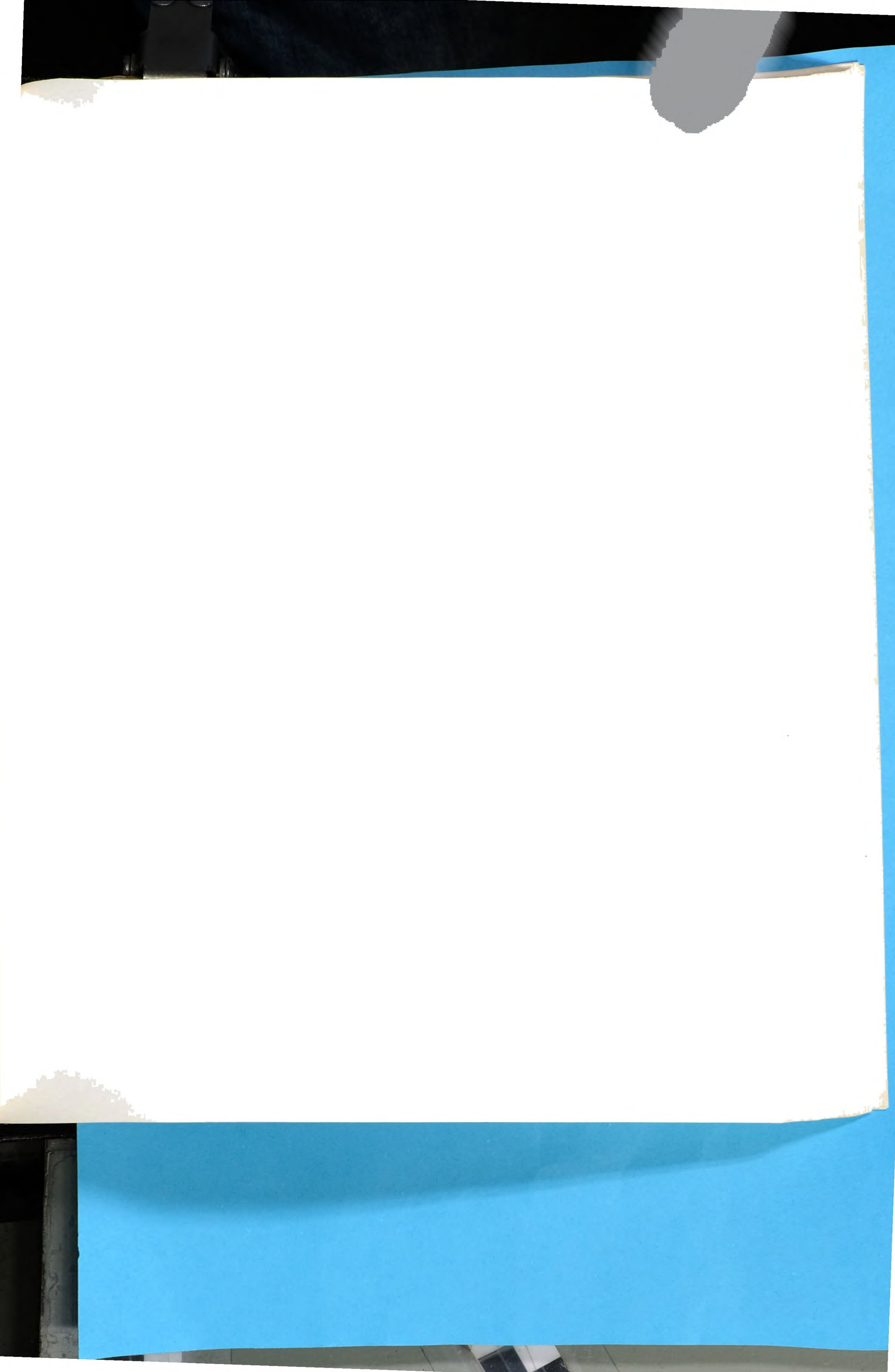
Leaders were nominated to each category by 10 members of the association, and then the two leaders in each category who received the most votes were selected to represent that category of leader. In Table 4-2 the selection results are summarized. The left hand column lists the leader categories, and the figures on each line represent the number of votes that the selected leaders received, on the average, in each of the leader categories. The percentages are calculated for each line, and are the ratio of the average number of votes received in each category to the total number of votes received across all categories by selected leaders.

Table 4-2. Votes received by chosen leaders in each leader category

		Average number and percentage* of votes received in each category (Range 0 - 10)			
Chosen Categories	N	Introducer	Legitimizer	Implementer	Total
Introducer	33	6.21 (51)	3.09 (25)	2.87 (24)	12.17
Legitimizer	32	2.43 (27)	4.78 (52)	1.91 (21)	9.12
Implementer	34	1.41 (20)	1.53 (22)	4.12 (58)	7.06

* Percentages are placed in parentheses.

On the average all leader types received approximately twice as many votes in the category they were selected to represent than in each of the other categories. Leaders received an average of 5.04 (54%) votes in their own categories compared with an average of 2.23 (23%) votes in each of the other categories.



Introducers received the largest number of votes, both overall and in their own category; they also were nominated often as legitimizers and as implementers. Legitimizers also received a sizeable number of votes as introducers. The voting pattern demonstrates that the leaders cannot be placed in only one category. Leadership in the development association is polymorphic[1] across several functions in the collective adoption process. The results in Table 4-2, however, indicate that members do perceive leaders to exercise their influence predominately in one functional area. Proposition 1 is supported.

Additional support for separate categories of leaders is sought from a proposition about the leader interaction patterns with each other.

> Proposition 2. Leaders tend to communicate more with other leaders performing the same role than with leaders performing a different role.
>
> Empirical proposition 2. Leaders, during the past month, had more contact with other leaders in their own category, than with leaders in other categories.

After leaders had nominated members to each of the leadership categories, they were asked to indicate how often they talked to the first person they mentioned in each leader category.

The average number of contacts between leaders in the came category was 11.85, while between categories it was 10.50, during the past month (Table 4-3).

---

1. Polymorphic leaders are leaders who perform many functions in a collective process, or hold leader positions in several issue areas.

Table 4-3. Average number of contacts with other leaders during the past month

		Average number of contacts received (Range 0 - 30) Contacted		
Contacters	N	Introducers	Legitimizers	Implementers
Introducers	33	14.33	11.30	11.90
Legitimizers	32	11.47	11.22	8.44
Implementers	34	10.98	8.94	10.00

Thus Proposition 2 appears to be supported, but if we look closer at the data only introducers talk more to each other than they do to other leaders. Both legitimizers and implementers have more contacts with introducers than with their own categories. On balance, Proposition 2 is not supported.

Having shown that development association members perceive there to be three categories of leaders, but not being able to distinguish between them in terms of their interaction with each other, we shall now turn our attention to each leader category in turn.

Introducers

The model of the collective adoption process suggests that introducers bring new innovations into the collectivity. The following proposition explores this suggestion.

Proposition 3. Introducers have more extrasystem contact than legitimizers or implementers.

In Chapter III several indicators of extrasystem contact are listed and from them we formulate several empirical propositions to be tested with the data.

Empirical proposition 3a. Introducers live outside the village more than other leaders.

Empirical proposition 3b. Introducers visited more outside the village than other leaders, during the past two years.

Empirical proposition 3c. Introducers listened more to radio than other leaders during the past two weeks.

Empirical proposition 3d. Introducers read (or had read to them) more newspapers than other leaders, during the past month.

Empirical proposition 3e. Introducers saw more films than other leaders during 1966.

Empirical proposition 3f. Introducers obtain more news from the nearest township from sources outside the community than other leaders.

Empirical proposition 3g. Introducers obtain more news from Enugu (the capital city of Eastern Nigeria) from sources outside the village than other leaders.

Evidence exploring the group of empirical hypotheses is presented in Table 4-4.

All the indices of cosmopolite behavior suggest that introducers have more contact with other systems than the other categories of leaders. Even though some of the differences between leader categories are small, the fact that all indicators support Proposition 3 is most encouraging.

Ninety-nine and three tenths per cent of the 1142 respondents in Phase II of the Diffusion Project listed farming as either their primary or secondary occupation. So we might expect agricultural innovations to be of particular importance to the development association members. Our next three propositions represent an attempt to explore the introducers' role in collective agricultural adoption.

Proposition 4. Introducers have greater exposure to agricultural media than other leaders.

This proposition will be tested by the following empirical

Table 4-4. Comparison of leader categories using several indicators of contact with systems outside the village

Extra-system contact	Range	Leader Categories: Introducers (N=33)	Legitimizers (N=32)	Implementers (N=34)
1. Mean score for living outside village	0 - 12	2.79*	1.31	1.68
2. Mean score for visits outside village	0 - 34	5.67	5.28	3.94
3. Mean radio exposure score	0 - 14	7.88	4.50	3.94
4. Mean newspaper exposure score	0 - 99	5.06	4.59	1.74
5. Mean film exposure score	0 - 9	1.52	0.81	0.74
6. Percent respondents using external sources for news of nearest town	0 - 100	75.76	50.00	73.53
7. Per cent respondents using external sources for news of Enugu	0 - 100	84.85	59.37	79.42

*Underlining indicates highest mean score on each variable for the three leader categories.

hypotheses:

Empirical proposition 4a. More introducers read (or had read to them) an agricultural newsletter or pamphlet than other leaders, during the past year.

Empirical proposition 4b. More introducers saw agricultural demonstration plots than other leaders, during the past year.

Empirical proposition 4c. More introducers heard agricultural radio programs than other leaders, during the past year.

Empirical proposition 4d. More introducers saw agricultural films than other leaders, during the past year.

Empirical proposition 4e. More introducers attended agricultural lectures than other leaders, during the past year.

The agricultural media were used by the Eastern Nigerian Ministry of Agriculture to disseminate information about agricultural innovations.

Proposition 5. Introducers have greater contact with agricultural change agents than other leaders.

Two empirical propositions are suggested.

Empirical proposition 5a. More introducers, than other leaders, named correctly the agricultural change agent (s) serving their village.

Empirical proposition 5b. More introducers talked to the agricultural change agents during the past year, than other leaders.

Data collected to test Propositions 4 and 5 are presented in Table 4-5.

Table 4-5. Comparison of leaders' exposure to agricultural media and contact with agricultural change agents

Agricultural Media (during the past year)	Per cent of each leader category		
	Introducers (N=33)	Legitimizers (N=32)	Implementers (N=34)
1. Read newsletter/pamphlet	45.45[1]	31.25	26.47
2. Saw demonstration plot	72.73	65.63	58.82
3. Heard agricultural radio	69.70	46.88	52.94
4. Saw agricultural film	39.39	31.25	26.47
5. Attended agricultural lecture	51.52	37.50	38.24
Agent Contact			
1. Named agent correctly	63.64	62.50	50.00
2. Talked to agent during past year	69.70	56.25	58.82

1. Highest scores underlined.

The data indicate that more introducers have contact with the expert (Ministry of Agriculture) sources of information about agricultural innovations than either of the other leader categories. Propositions 4 and 5 are supported. Following greater exposure to sources outside the community, and particularly those carrying expert information about agricultural innovations, we might expect introducers to know about innovation in general. Our next proposition seeks to explore this relationship.

> Proposition 6. Introducers have greater knowledge of innovations than other leaders.

Data about both agricultural and health innovations were gathered to assess respondents' knowledge of innovations.

> Empirical proposition 6a. Introducers recall more names of 14 specific agricultural innovations[1] than other leaders.
>
> Empirical proposition 6b. Introducers know more specific items of information about 14 agricultural innovations than other leaders.
>
> Empirical proposition 6c. Introducers know more details about fetilizer, aldrin dust and NSl-Maize than other leaders.
>
> Empirical proposition 6d. More introducers know correct information about three health problems than other leaders.

Data related to Proposition 6 are summarized in Table 4-6.

All indicators suggest that the introducers do have more knowledge of agricultural innovations and health problems. Proposition 6 is supported by the results. The differences between leader categories are small, however, and the question needs further investigation.

Now we turn our attention away from agriculture and investigate the introducers' ages, education and interaction with other leaders.

---

1. Agricultural and health innovations are listed in Appendix D.

Table 4-6. Comparison of leaders' knowledge of innovation

Innovation knowledge Indicators	Range	Leader Categories: Introducers (N=33)	Legitimizers (N=32)	Implementers (N=34)
1. Mean no. of innovations recalled	0 - 14	8.85[1]	7.78	8.71
2. Mean information score about 14 agricultural innovations	0 - 28	16.42	14.69	16.06
3. Mean number of items known about fertilizer	0 - 5	1.73	1.66	1.62
4. Mean number of items known about aldrin dust	0 - 5	1.24	0.75	0.94
5. Mean items known about NS1-Maize	0 - 7	1.97	1.81	1.85
Health Problems		Per Cent		
6. Cause of worms in stomach	0 - 100	75.76	56.25	58.82
7. Cause of malaria fever	0 - 100	27.27	12.50	8.82
8. Boiling drinking water	0 - 100	87.88	59.38	64.71

1. Highest scores underlined.

Proposition 7. Introducers are more highly educated than other leaders.

Several indicators of formal education generate the following empirical propositions:

Empirical proposition 7a. Introducers attain a higher level of education than other leaders.

Empirical proposition 7b. More introducers profess to be able to read their native languages than other leaders.



Empirical proposition 7c. More introducers profess to be able to read English than other leaders.

Empirical proposition 7d. Introducers earn higher scores on the functional literacy test than other leaders.

The indicators (Table 4-7) show that introducers are better educated than other leaders of the development association. Proposition 7 is supported.

Table 4-7. Comparison of indicators of leaders' education

Indicators of Education	Range	Leader Categories: Introducers (N=33)	Legitimizers (N=32)	Implementers (N=34)
1. Mean level of education attained	0 - 6	1.12[1]	0.59	0.68
2. Proportion of reading Ibo or Ibibio	0 - 100	69.70	34.38	35.29
3. Proportion reading English	0 - 100	51.52	18.75	20.59
4. Mean literacy test score	0 - 35	16.15	6.19	6.82

1. Highest scores underlined.

Proposition 8 investigates the relative ages of the leaders.

Proposition 8. Introducers are younger in age than other leaders.

The empirical proposition is identical to Proposition 8.

The data (Table 4-8) indicate that the introducers are the youngest category of leaders. The difference between the introducers and the implementers is small and it may be difficult to distinguish between the two leader categories on the basis of age. Proposition 8 is supported.

Table 4-8. Comparison of leaders' ages

	Leader Categories		
	Introducers (N=33)	Legitimizers (N=32)	Implementers (N=34)
Mean age of leaders	42.30[1]	59.94	47.62

1. Lowest score underlined.

Our final concern with introducers is to try to predict one of their interaction patterns with other leaders.

> Proposition 9. Introducers interact more with legitimizers than with implementers.

Proposition 9 was tested with the empirical proposition,

> Empirical proposition 9. Introducers talked more often during the past month with legitimizers than with implementers.

Data testing this proposition has been presented in Table 4-3; on the average, during the past month, introducers talked 11.30 times to individuals they nominated as legitimizers, and 11.90 to persons they called implementers. If we look at contacts in the opposite direction we find legitimizers contacting introducers 11.47 times, on the average, and implementers contacting introducers an average of 10.98 times. The evidence is not conclusive and Proposition 9 is not supported.

Legitimizers

Legitimizers are the power-holders in the adoption process and it is suggested that they are the ones who make the decisions to adopt or reject. Our first proposition seeks to conform an attribute of power-holders observed in the United States, higher status.

Proposition 10. Legitimizers possess higher social status than other leaders.

Indicators of social status in Eastern Nigerian villages which are measured in the present study are family size, and number of offices held in community organizations to which the respondent belongs. The following empirical propositions are suggested:

Empirical proposition 10a. Legitimizers have more wives than other leaders.

Empirical proposition 10b. Legitimizers have more children than other leaders.

Empirical proposition 10c. Legitimizers hold more offices in the community organizations to which they belong than do other leaders.

Legitimizers in the 17 development associations have one more wife and two more children than other leaders, and their holding formal offices in community organizations is marginally greater than office holding by others (Table 4-9). Proposition 10 is supported.

Table 4-9. Comparison of leaders' social status

Social Status Indicators	Range	Leader Categories: Introducers (N=33)	Legitimizers (N=32)	Implementers (N=34)
1. Mean number of wives	0 - 9	2.18	3.31[1]	2.24
2. Mean number of children	0 - 25	5.18	7.66	5.85
3. Mean number of offices held per association	0 - 1	0.61	0.63	0.53

1. Highest scores underlined

In the United States office-holding in community associations gives prestige to the individual and has been found as a consistent indicator of social status. Among the leaders of development associations in Eastern Nigeria it does not clearly discriminate, however. If we look a little further into the data, however, office-holding does separate leaders from association members and from non-member villagers (Table-4-10). A more precise indicator of social status is needed to discriminate between leader categories.

Table 4-10. Comparison of office-holding in village organizations by development association leaders, with members and non-member villagers.

	N	Range	Mean number of offices held per association
1. Leaders	99	0 - 1	0.59
2. Association members	342	0 - 1	0.35
3. Villagers (non-members)	749	0 - 1	0.36

In more developed countries, personal wealth has been found to be closely related to social status. Having suggested that legitimizers possess more social status than others, it seemed natural to propose that they also possess more wealth.

Proposition 11. Legitimizers are wealthier than other leaders.

Several empirical propositions are formulated to explore this proposition.

Empirical proposition 11a. Legitimizers own better houses than other leaders.

Empirical proposition 11b. Legitimizers have commercialized their farming operations more than other leaders.

Empirical proposition 11c. Legitimizers have larger farms than other leaders, as measured by number of laborers hired on one day during the last planting season.

Empirical proposition 11d. Legitimizers have larger farms than other leaders as measured by the number of yam poles needed to store the last harvest.

Empirical proposition 11e. Legitimizers have a higher level of living (measured by material possessions) than other leaders.

Data related to Proposition 11 are summarized in Table 4-11.

The indices do not show consistent differences between the categories. In terms of size of yam harvest and number of personal possessions it appears that the introducers are the wealthiest leaders. There is no support for Proposition 11.

The next proposition compares the ages of the leaders again, and suggests that the legitimizers will be the oldest of the leader categories.

Proposition 12. Legitimizers are older than other leaders.

The empirical proposition will be similar to the theoretical proposition already stated. Data presented in Table 4-8 provide good support for the proposition. In the 17 development associations of Eastern Nigeria the legitimizers had the highest average age. Proposition 12 is supported.

Legitimizers are at the center of the collective adoption process; it is suggested that they interact more with other leaders than the other leader categories.

Proposition 13. Legitimizers interact more often with other leaders of the collectivity than introducers or implementers.

Empirical proposition 13. Legitimizers talk to leaders in other categories more often during the past month than introducers or implementers talked to leaders outside their own category.

Table 4-11. Comparison of leaders' wealth

Indices of wealth	Range	Leader Categories: Introducers (N=33)	Legitimizers (N=32)	Implementers (N=34)
1. Mean index of house type	0 - 2	0.73[1]	0.63	0.21
2. Mean index of commercialization of food crops	0 - 6	2.55	2.34	2.65
3. Mean index of commercialization of palm crop	0 - 4	1.70	1.78	1.88
4. Mean number of laborers	0 - 31	5.12	6.47	4.44
5. Mean number of yam poles	0 - 600	59	43	25
6. Mean number of material possessions	0 - 10	5.88	3.75	3.59

1. Highest scores underlined.

Data presented in Table 4-3 indicates that Proposition 13 is not supported. On the average, legitimizers talked to other leaders approximately 19.91 times during the past month, while introducers talked to other leaders 22.20 times, and implementers talked to other leaders an average of 19.92 times. If we look at contacts in the opposite direction, leaders in other categories contacted legitimizers 20.24 times (on the average), while other categories talked to introducers 22.45 times, and other categories contacted implementers 20.34 times during the past month. The data provide no support for Proposition 13, and it suggests that introducers interacted with other leaders more often.

If legitimizers are the central leaders and power-holders of the development associations, it was suggested (in line with previous research findings) that they would exhibit the norms of the development association more than any other leaders. The development norms would be reflected in more innovative behavior on the part of the legitimizers.

> Proposition 14. Legitimizers are more innovative than other leaders.

Several indicators of innovativeness suggest the following empirical hypotheses:

> Empirical proposition 14a. Legitimizers used more agricultural innovations during 1966 than other leaders.
>
> Empirical proposition 14b. Legitimizers used agricultural innovations for a longer period of time than other leaders.
>
> Empirical proposition 14c. More legitimizers than other leaders used health innovations.

The data do not support Proposition 14 but suggest that the introducers are the most innovative of the association leaders (Table 4-12). If we compare the legitimizers with samples of members and non-member villagers, however, we note than legitimizers are the most innovative. For example, with regard to their current use of 14 agricultural innovations, data is summarized in Table 4-13 and indicates that the legitimizers are more innovative than non-leader members and villagers.

Implementers

Implementers are the leaders who organize the resources of the collectivity so that innovations can be incorporated into the system. Contrasted with the introducers, they are the stay-at-homes, and two propositions are suggested to describe their communication behavior.

> Proposition 15. Implementers have more contacts within the system than introducers.



Table 4-12. Comparison of leaders' innovativeness

Innovativeness indices	Range	Leader Categories: Introducers (N=33)	Legitimizers (N=32)	Implementers (N=34)
1. Mean number of agricultural innovations used in 1966	0 - 20	6.67[1]	5.00	4.06
2. Mean index of agricultural innovations use weighted by year of adoption	0 - 97	32.00	28.00	23.35
3. Health innovativeness Proportion using				
a. maternity hospital for births	0 - 100	75.76	62.50	64.71
b. smallpox vaccine	0 - 100	100.00	93.75	94.12
c. a latrine	0 - 100	87.88	68.75	73.53
d. dispensary treatent	0 - 100	93.94	78.13	91.18

1. Highest scores underlined.

Table 4-13. Comparison of current use of agricultural innovations for legitimizers, association members, and non-member villagers.

	N	Range	Mean number of agricultural innovations used in 1966
1. Legitimizers	32	0 - 14	5.00
2. Association members	342	0 - 14	3.47
3. Non-member villagers	749	0 - 14	1.64

Empirical proposition 15a. More implementers than introducers use local sources for news of the nearest town and Enugu.

Empirical proposition 15b. More implementers than introducers use local sources for information about 14 agricultural innovations.[1]

Implementers are more locally oriented in their information sources than introducers, according to the data presented by our indicators (Table 4- 14). Proposition 15 is supported.

Table 4-14. Comparison of introducers and implementers on the localness of their information sources.

	Leader Categories	
	Introducers (N=33)	Implementers (N=34)
Per cent of leaders using local sources for news of		
1. Nearest town	24.24	26.47*
2. Enugu	15.15	20.58
3. 14 Agricultural innovations	44.85	50.88

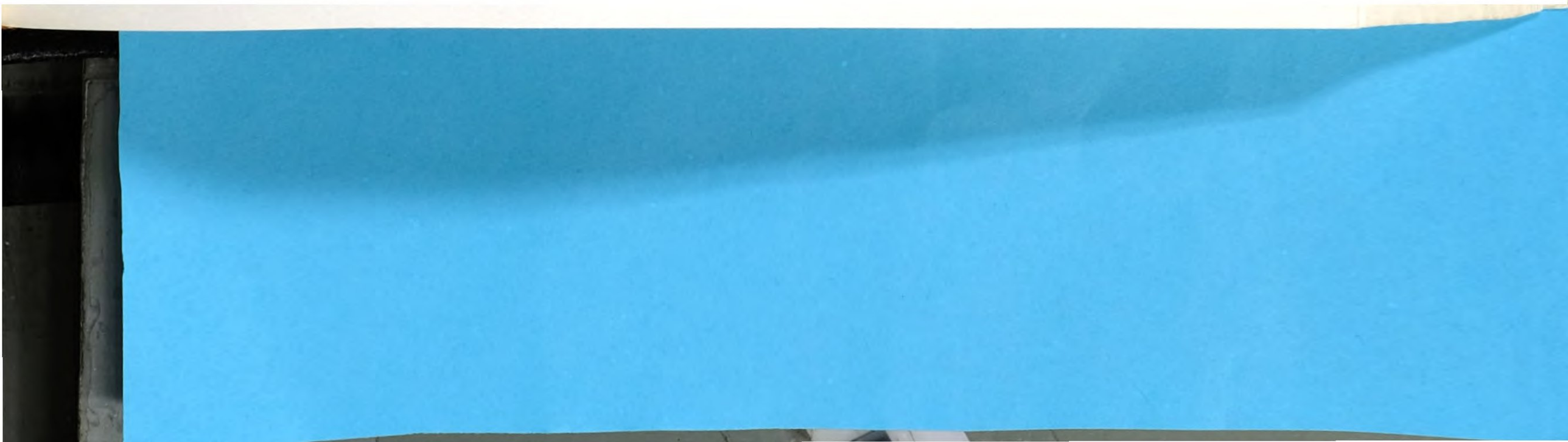
*Highest scores underlined.

Proposition 16. Implementers interact more with legitimizers than with introducers.

Empirical proposition 16. Implementers talked more with legitimizers than with introducers during the past month.

Data, previously presented in Table 4-3, do not support Proposition 16. Implementers say they talked to legitimizers an average of 8.94 times during the previous month, while they talked to introducers an average of 10.98 times. Looking at contacts in the other direction, legitimizers say they talked to implementers 8.44 times (on the average),

1. Listed in Appendix D.

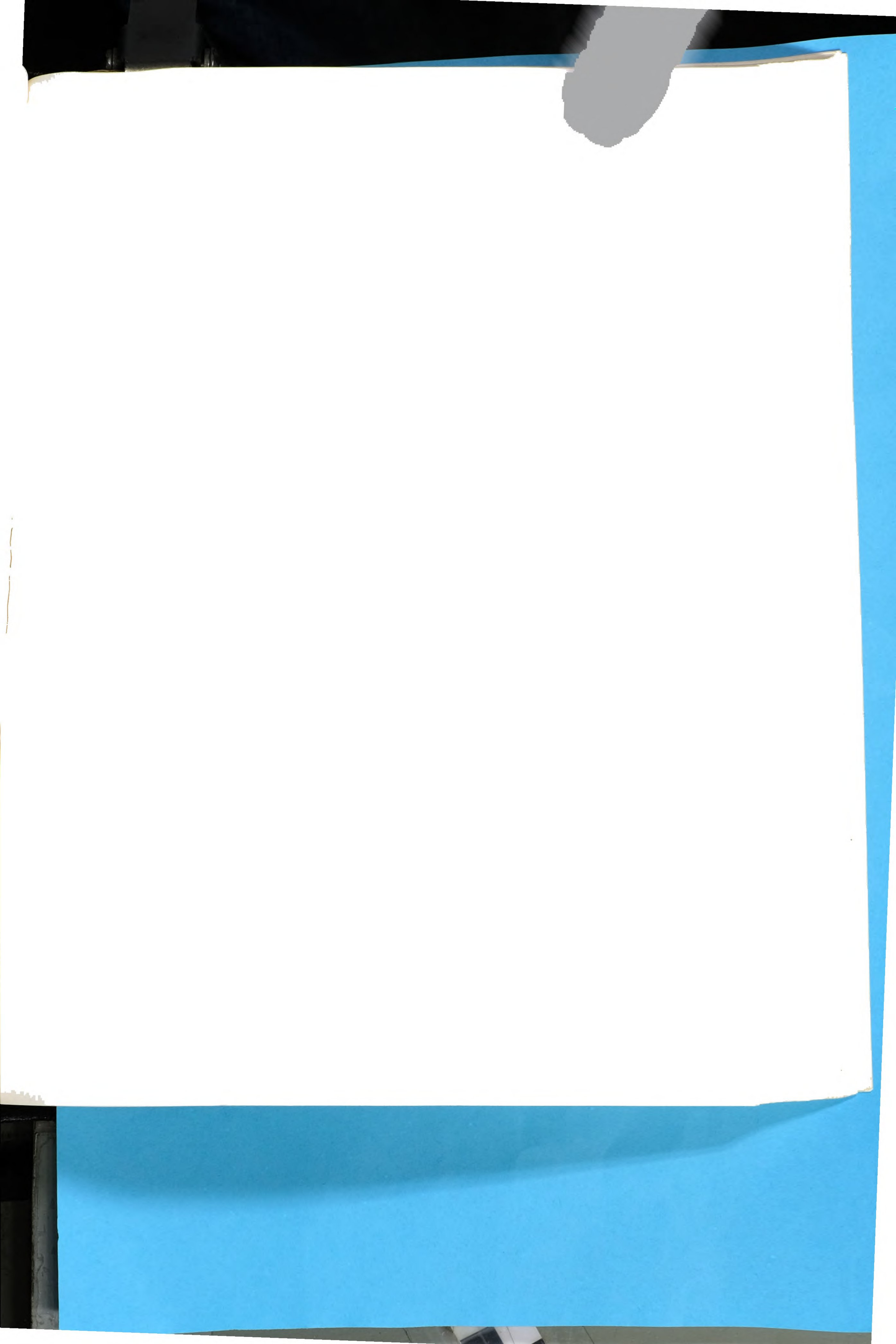


We return to age for our final proposition about the implementers. We suggested earlier that the implementers would come from the middle age grades in the villages.

> Proposition 17. Implementers are older than introducers, but younger than legitimizers.

The empirical proposition is identical. The findings are reported in Table 4-8, and they support Proposition 17. Though the differences in age between implementers and the other categories of leaders are not large, extra weight is added to our conclusion because we specified a range within which the implementers should fall, and they did.

Proposition 17 completes our analysis of the data, and we will now summarize the study and suggest implications for the future.





Chapter V

SUMMARY AND IMPLICATIONS

Summary

We began the present thesis with several objectives:

1. To add to our knowledge of the modernization process by developing a model of the collective adoption process that could be used as a guide for comparative studies in several systems. From prior research and the model, a series of propositions exploring relationships in the collective adoption process is suggested.

2. To explore the use of the reputational method of identifying leaders of collectivities that has been the subject of some controversy, and to see if it could be used in a cross-cultural setting.

3. To provide a framework for change agents to use when analyzing the process of collective adoption, together with a method which will enable them to use the process of collective adoption to bring about increased adoption of innovations and hence modernization.

The collective adoption process was defined as a series of events having the following characteristics:

1. The events surround a decision by a collectivity to adopt an innovation.
2. The innovation affects the majority of the collectivity.
3. The decision is reached, either by consensus or by a subgroup of members who receive their authority from the entire collectivity.
4. The adoption, once accomplished, is binding on all members who wish to remain as a part of the system.

A model of the collective adoption process was developed from a survey of research carried out in more developed countries. It was

possible to identify six stages or sub-processes in the collective adoption process. For less developed societies, characterized by relatively less differentiation and specialization of social roles, the model was adapted to include only three stages. The stages are:

1. Introduction, which combines stimulation of the system and initiation of an innovation into the system.

2. Legitimation, which includes acceptance of the adoption as an acceptable course of action for the collectivity, and then the decision to incorporate the innovation into the system.

3. Implementation, which combines the transmission of the decision to the members, when the decision to adopt is made by an authorized sub-group of the members, and the organization of resources so that the collectivity can adopt the innovation.

Using the model and prior research, 17 propositions about the leaders of the development associations who play the various roles in the adoption process were developed.

In Chapter III three methods of identifying structures and roles in collectivities are discussed, and one of these, the reputational method, was selected for use in the present study. Seventeen development associations, in as many villages, were identified, using a modified reputational technique. Then the same method was used to isolate the introducing, legitimizing, and implementing leaders in each of the associations. All of the selected leaders (99), and many (342) of the association members were interviewed and data were collected about their families, farming, adoption, and communication behavior.

The categories of leaders were compared using means and frequency distributions. We were looking for differences between categories,

in the direction suggested by the propositions, as this is an exploratory study. Statistical tests of significance were not used to decide if differences were large enough to be considered significant because the data could not meet the basic assumptions of the statistical models, and there was no way of assessing what effect the violation of assumptions had upon the appropriateness of the tests.

The main findings of the present study are:

1. The reputational method effectively isolated the 17 development associations whom the villagers thought were doing the most for the progress of their village.

2. The reputational method also identified individuals whom the association members perceived as belonging to the three leader categories of introducer, legitimizer, and implementer. The leaders selected received twice as many votes in the category to which they were selected as they did in any other category. Leadership in the associations is not monomorphic, however; leaders are not leaders in only one category, so they are polymorphic. Some of the leaders are nominated to two or three categories (simultaneously) by some of the members.

3. Leaders do not have more contact with leaders in their own categories than they have with leaders in other categories.

4. Introducers are the youngest, most educated leaders, with higher extrasystem contact than other leaders. Also, more of them had exposure to agricultural media, knew and talked to the agricultural change agents, than other leaders. We did not find that introducers have more contact with legitimizers than with implementers.

5. Legitimizers are the oldest, have the highest social status, but are not wealthier than other leader categories. They hold slightly



more offices in village organizations than other leaders, but they do not reflect the development norms more than other leaders by adopting more agricultural and health innovations. Legitimizers are more innovative than non-leader association members or non-member villagers, however. Legitimizers do not talk to leaders in other categories more than introducers or implementers talk to leaders in other categories.

6. Implementers are the middle category of leaders in terms of age, are more locally oriented for news of other systems, but do not have more contact with legitimizers than introducers.

Eleven of the 17 propositions were supported and this lends credence to the suggested model of the collective adoption process. It must be remembered, however, that many of the conclusions are tentative and considerably more work needs to be done before we finalize a model of the collective adoption process. Some of the work will be suggested as we discuss the limitations of the present study and the implications that it has for theory, method and practice.

Theoretical Implications

The model of the collective adoption process, developed from United States research, has utility in other cultures. It has provided a framework for the formulation of propositions, and a guide to the study of one of the processes of modernization. Several of the propositions, generated from prior research and the model, were supported by the data. We now have established a firmer basis from which to continue research into forms of collective modernization.

The present study must be recognized as exploratory (no other study like this one has ever been completed) and that it has several shortcomings. The present study suggests a model, identifies individuals

who are perceived to fulfill functions in the model, and then confirms that these individuals have some of the characteristics which the model, and prior research, suggests that they should have. The research process and the results offer some support for the model, but they are far from confirming that the model is a fair construction of reality. Nowhere in the research process did we see an introducer introducing an innovation into a collectivity, nor did we see a legitimizer legitimizing, and so on.

In order to confirm that the sub-processes which we postulate for the model exist in real life, we need to use decisional analysis; we need to observe the entire adoption process in several collectivities. If the decisional method were used after the members of the collectivity had identified the leaders (by the reputational method), then the leaders' activities could be checked against their designated function. Combining the reputational and decisional method has definite advantages at this exploratory stage of research; they both provide information about different aspects of the process. Decisional techniques can provide detailed knowledge of a few collective adoption processes, and the reputational method may be used in many collectivities to provide generalizability to a larger population of collectivities.

A serious limitation of the model developed in the present thesis is its restriction to the collective adoption process. The model would be considerably more useful it it also accounted for collective rejection (simultaneously). The restriction of the present model to adoption is partly a function of the tradition of diffusion research, which has concentrated upon adoption rather than rejection, and partly a function of the methodology involved. In survey research, as used in the present

study, it is easier to study adoption because the innovations are still in the system and can be remembered by the actors in the process. Rejections may not be remembered so easily.

The present model will require considerable modification to accomodate collective rejection. Most obviously the later stages, after the decision, will have to be modified to accomodate rejection. And in studying the whole process, researchers will have to be sensitive to variables that facilitate rejection rather than adoption.

Further theoretical advances may be made by comparing the collective adoption process in collectivities actively involved in modernization, with collectivities less active in modernization but also formed with development objectives. Another study should compare collectivities in "modern" villages with similar associations in "traditional" villages with a view to determining how the larger system in which the association is embedded affects the collective adoption process.

Future theoretical development must rest upon (1) the use of several methods of investigation to gain more precise indications and knowledge of theoretical concepts and (2) the expansion of the model to encompass explanation of collective rejection.

Methodological Implications

We must look carefully at those propositions not supported by the data, as well as consider using the reputational and decisional methods together. There are several reasons why propositions may not be supported, which include: (1) the theoretical model used to derive the propositions may not reflect the actual behavior of respondents, (2) the indicators chosen to represent (measure) theoretical concepts may not be adequate

indicators of the concept, (3) the measurement technique may not accurately measure the variable in the sample, and thus provide an accurate estimate of the variable's distribution in the population being studied.

The theoretical model may be called into question by the results of the present study, but an exploratory study is hardly reason for discarding an entire model with face validity and which has been developed from prior research. The present study, however, is a good basis for questioning the adequacy of indicators and measuring techniques.

Our indicators of social status do not appear to be completely adequate. We found that family size distinguished between leaders, just as age (another indicator of status in a traditional society) does. In the United States office-holding in community organizations gives prestige to the individual and has been found as a frequent indicator of social status. Between the categories of leaders of development associations in Eastern Nigeria, office-holding does not discriminate well.

We looked further into the data and noted that office-holding does separate leaders from non-leader members and from non-member villagers. Within the leadership categories, however, a more discriminating indicator of social status is needed. Among leaders in Eastern Nigeria, the most prestigous positions are those occupied by members of the title societies (Uchendu, 1965:82). Title societies are groups of leaders who have achieved recognition from the whole village and have been asked by the current title holders to join their ranks. Thus, a more discriminating measure of social status might be offered by membership in the title societies.

Another set of propositions that were often not supported dealt with the interaction between leader categories. Our measure of interaction may be questionable. Frequency of interaction was measured by asking leaders how often they had talked during the past month to the first individual they nominated to the leader category. The individuals nominated by each respondent may or may not have fallen into the category selected by the reputational method to represent the leader categories. An improved measure of interaction might be provided by a two-stage technique. Leaders would first be identified using the reputational technique, and their names written on the interview schedule. Then each leader and member would be interviewed and asked how often he talked to the named leader in each category. In this way we could be more sure of measuring perceived interaction between the leaders who appear in the final analysis of leader categories.

Another shortcoming of the present study is its lack of generalizability. The problem in the present study is the purposive selection of villages. The villages were selected from the more innovative and more modern villages of the Diffusion Project Phase II sample. Thus we have a study of 17 development associations from 17 of (perhaps) the most developed and atypical villages in Eastern Nigeria. A more typical sample of villages could be picked in a future study by randomly selecting villages from sampling frames such as air photographs, or census, tax, or election lists.

The atypical "modern" sample, however, provides a bonus for the present study. It allows the study of modernization where modernization is taking place most rapidly. Coming from more "modern" villages of Eastern Nigeria, the development associations represent the leading edge

of developmental and modernizing organizations.

A further limitation of the methods used in the present thesis is that they have only allowed the study of small segments of the collective adoption process. Our methods have not recognized that we are studying a process, a dynamic never-ending collection of interactions or relationships between the elements of a system. We defy the notion of process in the construction of a model with stages, but we justify the exercise as it gives an analytic and heuristic tool.

Methods which allow us to better investigate processes are observation and field experiments. Researchers can observe the introduction of an innovation to a community and analyze the process and sub-processes as they evolve over time. Another approach is to actually introduce an innovation into a number of communities and observe the differences between those communities and a number of communities where no innovation has been introduced. If the observer or experimenter does not know the outcome of the innovation processes before he begins his investigation, he must be able to account for rejection, with a model that incorporates concepts explaining rejection.

Sociometric studies of development associations can be undertaken to add to our understanding of the collective adoption process. By asking all the members of the association with whom and how often they interact with other members of the association about development projects, we can locate individuals in a communication network. Indices describing positions in the network can be determined for the different leader categories and related to other aspects of leader behavior. Simultaneously, we can explore differences between associations with frequent interaction and those without. Such studies will expand our

understanding of communication and modernization.

The next steps, methodologically, should include improved measures, and several methods of measuring the theoretical concepts to increase the validity of the concepts. Not only are the observational, sociometric, and reputational techniques available to us, but studying the collective adoption process provides a unique opportunity. Change agencies can incorporate strategies including the process into their change problems immediately and researchers can design controlled field experiments within those strategies. The experiments could provide an opportunity to assess the effectiveness of change strategies involving the collective adoption process.

Pragmatic Implications

The present thesis provides, and to a certain extent substantiates, a model of the collective adoption process. Collective adoption has received little attention from researchers and change agents, but it is suggested that it provides a unique opportunity for encouraging modernization and development. This opportunity presents itself where organizations, such as the development association, exist. The reputational method can be used by change agents to identify leaders of collectivities who can assist with adoption. During Phase III of the Diffusion Project, the methods used in the present thesis were used to identify introducers, legitimizers, and implementers so that they could participate in a farm forum organized by agricultural change agents (Roling, 1967).

Perhaps the most surprising "finding" of the present thesis is that the Eastern Nigerian government ministries concerned with rural development have made little use of existing indigenous social structures to

facilitate change and development. Most ministry officers are probably members of the development association of their own home village, but we do not see their membership reflected in their use of development associations[1] as part of ministry change efforts. The failure to realize the potential of the development associations may be due to several factors which could be determined empirically. Two possible causes are:

1. Eastern Nigeria was administered by the British for half a century and their lack of understanding of the local social system was amply demonstrated when they tried to use "Indirect Rule"[2] by creating chiefs, because there were no single authoritarian chiefs in most villages. Villages in Eastern Nigeria are administered by a group of title-holders. The chiefs created were not part of the local leadership and were ineffective as local administrators (Jones, 1957).

2. Since Nigerians began to control their own development programs, those who have risen in the ministries mainly occupy administrative positions. Extension program planning, and the teaching of change agents, has been in the hands of United States Agency for International Development advisors who have tried to apply the North American system of rural development (with some success) to Eastern Nigeria.[3] The advisors' understanding of local social systems appears to be rudimentary and little

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1. The failure of the Eastern Nigeria Government to use development associations in the change strategies would make an interesting study in its own right.
2. Indirect Rule is a policy of working with and through existing leadership hierarchies, such as emirs in Northern Nigeria and Rajahs in India, to maintain the "Pax Britanica". In Nigeria, the policy was promulgated by Lord Lugard.
3. Lionberger and Chang (1970) describe the extension system of Taiwan, indicating how it differs from the U.S. model, and how it might be better suited to less developed countries. In Taiwan farmer associations play an important role in agricultural education (1970:49).

use of development associations has been made in change strategies. It is noticeable that the new Ministry of Rural Development was beginning to use strategies involving local institutions, such as the development associations. Their policy was formulated by a Ford Foundation team in close consultation with Nigerians. The Ford team was headed by a former District Officer in the British Administration, who was well aware of the shortcomings of the colonial policies, and contained an anthropologist who conducted extensive analyses of village social structures (Smock, 1966,1969).

The development associations of Eastern Nigeria are founded with a development objective in mind, and the leaders have been shown by the present study to be innovative and progressive. Given extra resources and expert assistance by change agencies, the leaders may be natural ambassadors of development and modernization. The present study suggests that agricultural change agents already have more contact with leaders who play an introducing role in the collective adoption process than with any other category of villagers. Once the change agents recognize the potential of the introducers in the collective adoption process, they may spend more time with them, providing more information about innovations. The introducers will then perform the initiation function to encourage the development associations to adopt innovations. The strategy enables the change agent to concentrate his attention on key members of the association, conserve time, and hence in the long run, contact more development associations, bringing about more rapid modernization of his people.

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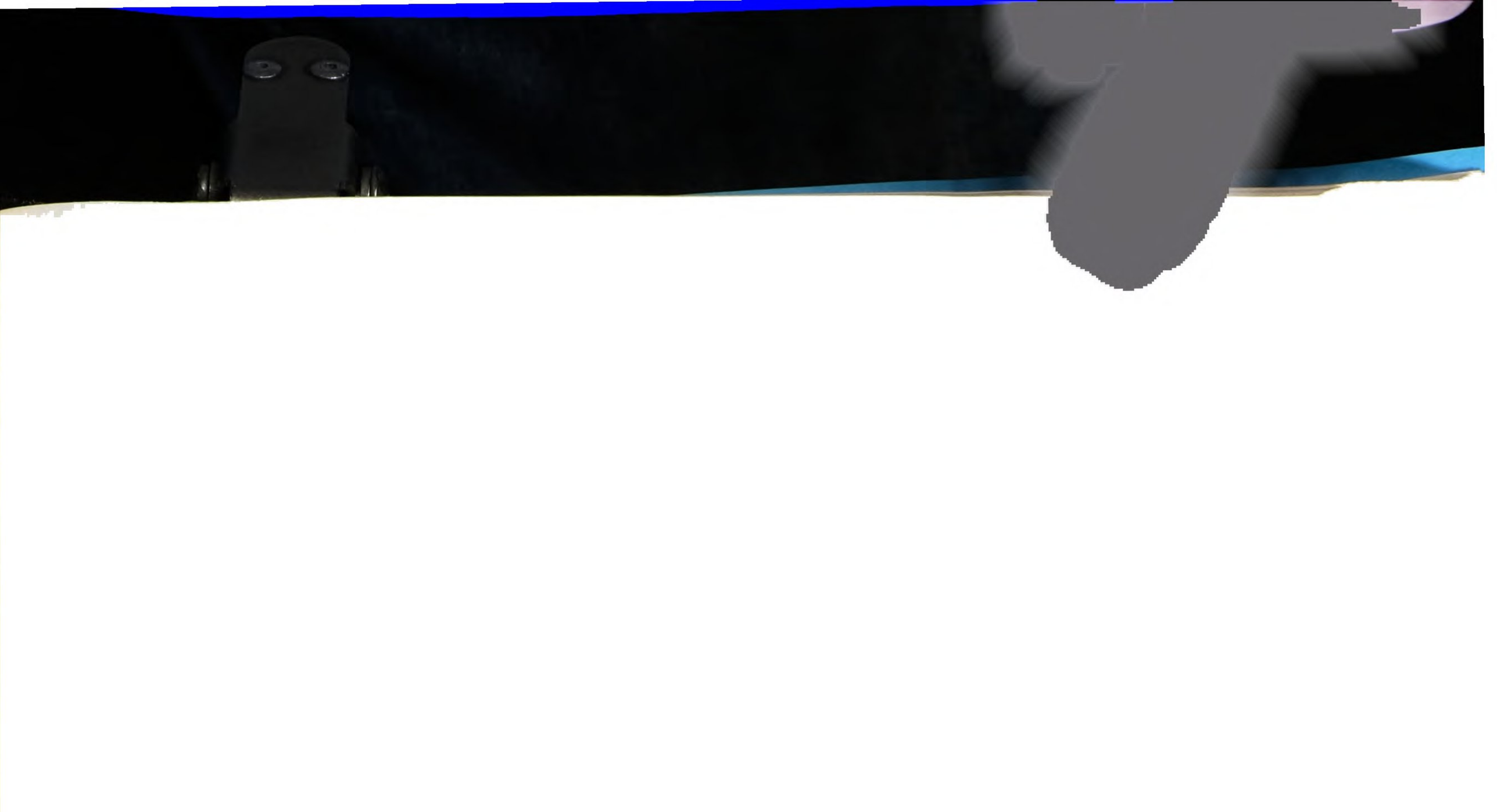
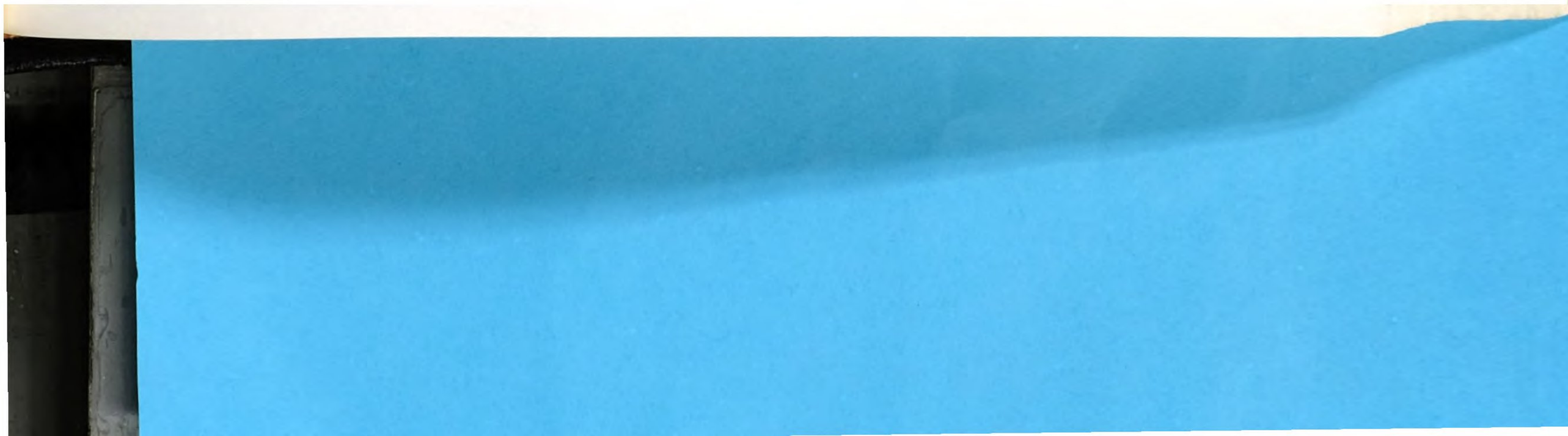
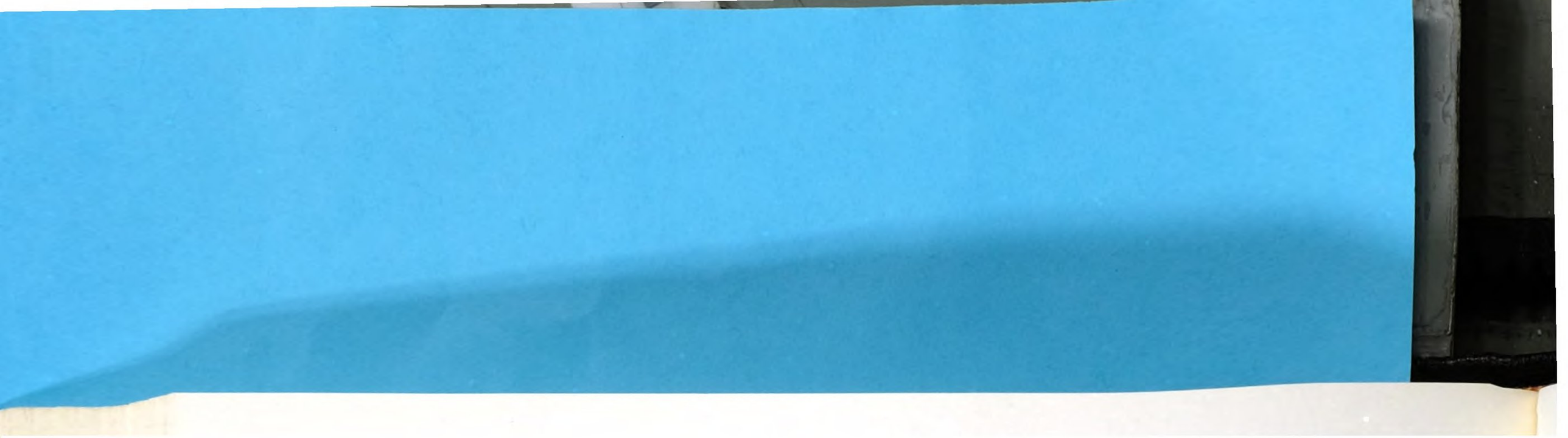




APPENDICES



APPENDIX A

INDICATORS OF EXTERNAL ACCESS AND INSTITUTIONAL DEVELOPMENT USED IN THE VILLAGE SELECTION PROCEDURE

Each of the 34 success villages from Phase I of the Diffusion Project was scored on two criteria:

1. External Access
2. Institutional Development

External access was defined as the degree to which the village had contact with the outside world in terms of potential access to communication. Access variables, taken from the Phase I village schedules, were the presence or absence in the village of:

1. Newspaper vendors
2. Newspaper agents
3. Postal agencies
4. Permanent strangers[1]
5. Lorries once a week
6. Taxies once a week
7. Advertising vans once a week
8. Students at the University
9. Distance to tarred roads
10. Distance to railways
11. Distance to first and second class townships
12. Distance to County Headquarters

Institutional development was defined as the degree to which developmental institutions and practices vital to the process of modernization and change are present in the village. Institutional development variables, from the Phase I village schedule, were the presence or absence in the village of:

1. Primary schools
2. Secondary schools/TTC[2]
3. Adult education schools
4. Churches
5. Daily markets
6. Weekly markets
7. Patent medicine shops
8. Beer shops
9. Food and goods shops
10. Tailors' shops
11. Carpenters
12. Blacksmiths
13. Photographers
14. Bicycle repair shops
15. Other repair shops
16. Sign-boards
17. Maternities/dispensary/ health center
18. Police post
19. Cooperative Society Buildings
20. Two storey buildings
21. Lorry park
22. Water wells/pipe born water
23. Organizations for village improvement
24. Motorable roads

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1. Lorry is an English word, commonly used in Nigeria, for truck.
2. Teacher Training Colleges.

APPENDIX B

INSTRUMENTS USED FOR SELECTION OF THE
DEVELOPMENT ASSOCIATIONS

1. Development Association Selection Instructions
2. Questions from Development Association Selection Sheet

1. Development Association Selection Instructions

Diffusion Project

Phase II GROUP SELECTION

From our experience in Phase I and the Pre-test of Phase II, the procedure for the Group Selection has been modified slightly.

You will notice that the format of the group selection sheets has been changed to give you more room to write down the required information. Now there are 3 separate sheets of questions to be asked of each informant--a yellow, a white and a blue sheet. The sheets have been put together in sets of 15 sheets. Each set will suffice for 5 informants. Interviews with 10 informants are required in each village, so 2 sets of sheets have to be completed.

Group selection will be carried out in the office, therefore the 10 selection interviews have to be completed before the second supervisory visit: ie., Nov. 8th in the first Phase II village and Jan. 11th in the second Phase II village.

Information will be collected about the following types of groups:

1. Traditional groups concerned with village affairs and the maintenance of law and order.
2. Modern groups concerned with village affairs and village administration.
3. Labour groups--community work groups, market work groups, labour exchange groups, etc.
4. Entertainment groups--dancing, wrestling, drinking, football, singing, etc.
5. Religious groups--any groups connected in any way with a church.
6. Educational groups--any groups concerned with the education of the people of the village.
7. Title groups of the village.
8. Development groups--any groups concerned with the progress and development of the village.
9. Monetary groups--any groups concerned with money, such as esusu and savings clubs.
10. Any other groups that people say are in the village, but do not fit into the categories already mentioned.

We are also interested to know the group which the informants think is contributing most towards the progress of the village, and

why he thinks it is.

You are also required to get details of the activities, the main members and the location of the foundation of the group.

When asking about the activities, use your own knowledge of these types of groups to probe meaningfully, so that complete information about the activities is gathered.

Please collect the full names of 2 leaders in each group--each time that the group is mentioned. Remember to ask the informant to name whom he thinks are the most important leaders. Informants may not think of the same people each time.

The place first started is the location where the group held its first formal meeting.

SPECIAL NOTE: Often a group may have several different names in any one village. Find out which groups have several names and make a list on a piece of foolscap, noting all the names of the groups. Choose from the list the name which is most commonly used, and use this throughout the selection procedure. When questioning the informants, probe carefully for the various names of the groups which he mentions, and then use the same name throughout all selection sheets.

2. Questions from the Development Association Selection Sheet

The questions listed below were arranged on three 8" x 13" sheets so that three associations could be nominated by the informant in each category. The associations were listed by the interviewer under each question down the left hand side of the form. For each group named the interviewer asked the following questions:

> What has been the main activities/projects of the group (festivals/bazaars/petitions,etc.)?
>
> Who are the leaders (two FULL NAMES)?
>
> Where was the group first started (place)?

The groups were identified with the following questions:

Diffusion Project
Phase II

Village name_____
Village no._____

GROUP SELECTION SHEETS

Informant's name _____ Compound no._____

NOTE: When recording the names of the groups, find out all the names of the group, and use the same one throughout the selection procedure.



1. What traditional groups are there in...[village name] concerned with village affairs/law and order?

2. What modern groups are there in...[village name] concerned with village affairs/law and order?

3. Which groups here carry out communal labor, market work, joint farm work (Labor Exchange)?

4. Are there any groups concerned with entertainment, dancing, football, etc?

5. Are there any religious groups concerned with Church affairs and Church activities?

6. Are there any educational groups concerned with the schools?

7. Are there any title groups in the village?

8. Are there any groups concerned with the progress and development of the village?

9. Are there any groups concerned with money matters, such as esusu, mitini?

10. Are there any other groups of people who gather together for meeting in this village which we have not mentioned before?

11. Which, in your opinion, is the group in this village which is doing the most for the progress of the village at this time?

12. Why do you name that group?

APPENDIX C

INSTRUMENTS USED FOR LEADER SELECTION IN THE DEVELOPMENT ASSOCIATIONS

1. Leader Selection Instructions
2. Leader Selection Form

1. Leader Selection Instructions

Diffusion Project
Phase II

Village No._____
Village Name_____
Interviewers_____

INTENSIVE STUDY OF A DEVELOPMENT GROUP

The group chosen in your village is _____

Membership List

Please obtain a complete list of all the members, both at home and abroad, from the Secretary and the leading members. If the whole village is automatically the membership, then record the Executive members, the main members, and the members who are living abroad. It is VERY important that you obtain a list of all the members "abroad". When recording the names of members "abroad" record the name of the town, in which they are living, next to their personal name.

Group leader selection

When you have completed the membership list, randomly choose 10 members, and use them as informants for the short Group Leader Selection. The 10 blue selection sheets must be completed by the 4th supervisory visit. Record the full names and addresses of the people whom the informant mentions. If the leader lives in the village, record his compound number and the name of the village. If the leader is "abroad", record the name of the town, where he is now living. This selection procedure is designed to show us the leaders who fulfill the following roles within the group:

1. Introduce new ideas to the group.
2. Consider and accept or reject these ideas, on the behalf of the whole group.
3. Turn these ideas into projects by activating and organizing the members.

Group questions on the main interview schedule

The last yellow page of the Phase II interview schedule is to be asked of the group members, i.e., those respondents who say that they are members of the study group in question 21.

NOTE: If the whole village is automatically the group membership, then the last page must be asked of everyone in the sample.

2. Leader Selection Form

Diffusion Project
Phase II

Village No._____
Village Name_____

Informant's Name_____ Compound No._____

Group Name_____

As you may have already heard, our research project is concerned with progress and development. I understand that .....[GROUP NAME] is very keen on the development of the village and has been involved in many projects. Are you a member of .....[GROUP NAME]? Please may I ask you a few questions about the society? It will only take a few minutes.

1. Your group has been involved in many projects in the village. Who are the members who usually bring these ideas to the group?

/RECORD FULL NAMES AND ADDRESSES/

a. _____ _____
b. _____ _____
c. _____ _____

2. Who are the members of the .....[GROUP NAME] who must be consulted before any project can be started?

/RECORD FULL NAMES AND ADDRESSES/

a. _____ _____
b. _____ _____
c. _____ _____

3. Who are the members of your group who organize the members to do the work on projects so that they are completed?

/RECORD FULL NAMES AND ADDRESSES/

a. _____ _____
b. _____ _____
c. _____ _____





APPENDIX D

QUESTIONS AND CODES USED TO MEASURE SOCIAL AND COMMUNICATION CHARACTERISTICS OF DEVELOPMENT ASSOCIATION MEMBERS

Age

"How old are you?"

If respondent was not sure, he was asked to place himself on a list between two villagers whose ages had been accurately determined in advance, as described in Chapter III.

Code: actual age

Extrasystem Contact

1. Lived outside the village

"Did you ever live outside [village name] for one year or more?" IF YES: "Did you ever live in...?"

Towns within Eastern Region

Abak, Abakaliki, Calabar, Owerri, Uyo, others.

Code: 0 - No, 1 - Yes

Cities within Eastern Region

Aba, Enugu, Onitsha, Port, Harcourt, Umuahia

Code: 0 - No, 2 - Yes

Cities outside Eastern Region

Asaba, Benin, Ibadan, Kaduna, Kano, Lagos, others.

Code: 0 - No, 3 - Yes

Places outside Nigeria

Code: 0 - No, 4 - Yes

Index of "lived outside the village" is the sum of above codes for each town lived in by respondent.

2. Visits outside the village during the past two years

"During 1965 or 1966 did you travel to...?"

Codes and index identical to "lived outside the village".

3. Radio exposure score

"Did you listen to the radio in the past two weeks (how many days)?"

Code: actual number of days

4. Newspaper exposure score

"Did you read (did anyone read to you) any newspaper during the past four weeks (how many)?"

Code: actual number of papers

5. Film exposure score

"Did you see any cinema films in 1966 (how many)?"

Code: actual number of films

6. External sources of news about nearest town

"How do you hear about things happening in [NEAREST TOWNSHIP]?"

Code:

0 - Don't know/hear nothing
1 - Go there personally
2 - People in this village
3 - People in this village who listen to radio/read paper
4 - People from town/Enugu
5 - Travellers/strangers/traders/taxi drivers
6 - Radio
7 - Newspaper
8 - Letters/telegrams/telephones
9 - Stories/rumors/flying news

All codes except 0,2,3, and 9 are external sources.

Indexed as percentage of respondents using external sources.

7. External sources of news about Enugu

"How do you hear about things happening in Enugu?"

Codes and index identical to 6.

Agricultural Media

"During 1966 did you...?"

1. Read (have read to) agricultural newsletter/pamphlet
2. See agricultural demonstration
3. Hear agricultural radio program
4. See agricultural film
5. Attend agricultural lecture

Code: each item scored 0 - No
1 - Don't know
2 - Yes

Change Agent Contact

1. "Do you know the names of the agricultural workers who come to [VILLAGE NAME]?" FULL NAMES: _____
_____

Code: 0 - No/has incorrect names
1 - Yes

2. "During 1966 did you talk to the agricultural agent?"

Code: 0 - No
1 - Don't know
2 - Yes

Innovation Knowledge

1. Number of agricultural innovations recalled

"Do you know anything about...?"

1. Oil palm rehabilitation scheme
2. Cocoa
3. Rubber
4. Rice
5. Cassava
6. Vegetable seeds
7. Citrus
8. Cashew
9. Chickens
10. Community plantations
11. Fertilizer
12. FAID credit or loans
13. Aldrin dust
14. NS-1 Maize



Code: Each item scored 0 - No
1 - Yes
and then all scores summed.

2. Information score about 14 agricultural innovations

"Do you know anything about...?"

Items as in 1 above.

Code: Scored according to correct information provided
0 - no correct answer
2 - at least one correct answer

3. Information about fertilizer

"Do you know anything about fertilizer?"

Code: actual number of correct items (0-5)

4. Information about aldrin dust

"Do you know anything about aldrin dust?"

Code: actual number of correct items (0-5)

5. Information about NS1-Maize

"Do you know anything about NS1-Maize?"

Code: actual number of correct items (0-7)

6. Information about worms in the stomach

"What causes worms to be in the stomachs of children?"

Code: 2 - bad food/bad water/dirt
1 - don't know/other (SPECIFY _____)
0 - incorrect answers

7. Information about malaria fever

"What causes malaria fever?"

Code: 2 - mosquitos
0 - don't know/other

8. Knowledge of boiling drinking water

"Why do some people boil their drinking water?"

Code: 2 - kill germs
1 - don't know/others (SPECIFY _____)
0 - incorrect answers

Education

1. Level of education attained

"Did you ever attend classes in school?"
IF YES: "What standard do you reach?"

Code: 0 - never attended school
1 - primary school (incomplete)
2 - primary (complete)
3 - secondary (incomplete)
4 - secondary (complete), teachers certificate
5 - university (incomplete)
6 - university (complete)

2. Self-professed literacy in vernacular

"Can you read Ibo/Ibibio?"

Code: 0 - No
1 - Yes

3. Self-professed literacy in English

"Can you read English?"

Code: 0 - No
1 - Yes

4. Literacy test in English

"As best as you can, read this to me."

LITERACY TEST: GIVE CARD TO RESPONDENT AND CIRCLE MISREAD AND INCORRECT WORDS

"He who cannot read is like a blind person who is being lead lest he go astray. He is dependent upon others. The book which he cannot read mocks him as a slave of ignorance."

Code: actual number of correct words (0-35).

Social Status

1. Family size

a. Number of wives

"How many wives do you have (did you have)?"

Code: actual number of wives

b. Number of children

"Including your youngest child, how many children from your belly are alive today?"

Code: actual number of children

2. Offices held per village association

"Do you belong to any groups or organizations in [VILLAGE], such as...?" (several functional types of associations were mentioned)

"Do you hold a position or office in ...?" (Names of associations mentioned by the respondent)

Code: proportion of groups belonged to in which the respondent holds an office

Wealth

1. House type

"Do you own a house with a ...roof and ...walls?"

Code: 0 - roof thatched and walls mud
1 - roof thatched and walls concrete/roof zinc and walls mud
2 - roof zinc and walls concrete

2. Commercialization of food crops

"Did you sell more than half or keep more than half for food?'
For: yam, cassava, maize, cocoyam

Code: 0 - did not sell/grow
1 - sold but kept more than half
2 - sold and sold more than half
Score is the sum of codes for all foods.

3. Commercialization of palm crop

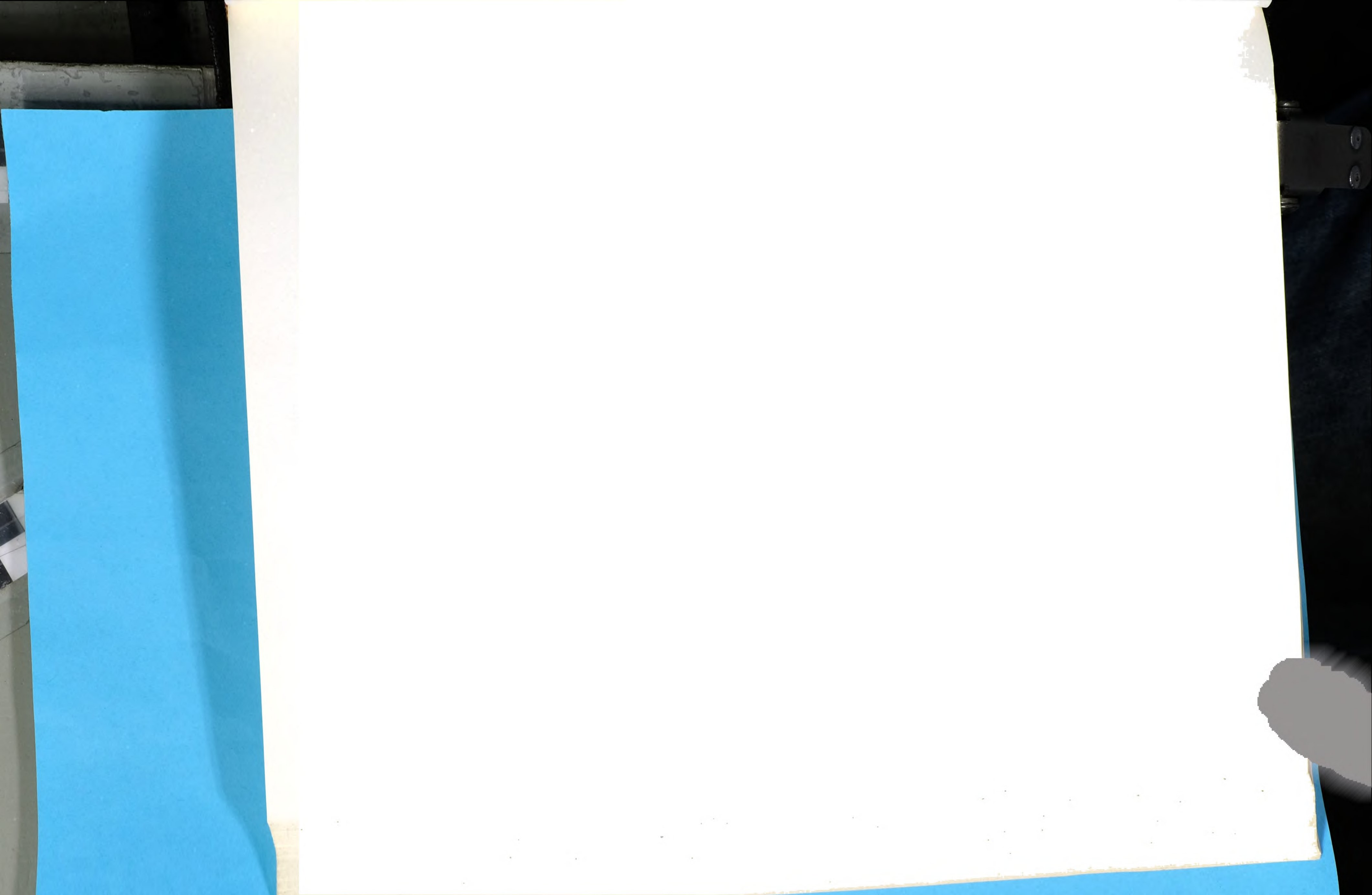
"Did you sell more than half or keep more than half for food?"
For: palmkernel, palmoil

Code: same as 2 above

4. Farm size

a. Number of laborers hired

"To make your yam heaps (plant yam), how many laborers do you usually hire on any one day?"



Code: acutal number of laborers

b. Number of yam poles

"How many yam poles did you get from your last harvest?"

Code: actual number of poles

5. Level of living

"Do you own...?"

Radio, wristwatch, cushioned chairs, laced shoes, cupboard, iron bed, clock, bicycle, framed photos, 1966 calendar.

Code: 0 - No
1 - Yes

Score is total of codes for all items.

Innovativeness

1. Use of agricultural innovations in 1966

"During 1966 did you plant/join/use/buy...?"
(any of the 14 innovations listed earlier in this appendix)

Code: 0 - No
1 - Yes
Score computed by summing codes for all innovations

2. Use of agricultural innovations weighted by year of adoption

"When did you first plant/join/use/buy...?"
(any of the 14 agricultural innovations listed earlier in this appendix)

Code: year reported by respondent
Score computed by subtracting year from 1967 and then summing for all innovations

3. Health innovations

a. Use of maternity for childbirth

"Have you ever had your wife go to a maternity for childbirth?"

Code: 0 - No
1 - Don't know/no wife/wife not had children
2 - Yes

b. Smallpox vaccination

"Have you ever had a smallpox vaccination?"

Code: 0 - No
1 - Don't know/no answer
2 - Yes

c. Built a latrine

"Have you ever built a latrine?"

Code: same as b, above

d. Treatment in hospital/dispensary

"Have you ever been treated at a hospital or dispensary?"

Code, same as b, above

Intrasystem Contact

1. Internal sources of news about nearest town

"How do you hear about things happening in [NEAREST TOWN]?"

Code: 0 - Don't know/hear nothing
1 - Go there personally
2 - People in this village
3 - People in this village who listen to radio/read newspapers
4 - People from town/Enugu
5 - Travellers/strangers/traders/taxi drivers
6 - Radio
7 - Newpapers
8 - Letters/telegrams/telephones
9 - Stories/rumors/flying news

Indexed as percentage reporting codes 2,3,9, the internal sources of news

2. Internal sources of news about Enugu

"How do you hear about things happening in Enugu?"

Codes: same as 1, above

3. Internal sources of news about 14 agricultural innovations

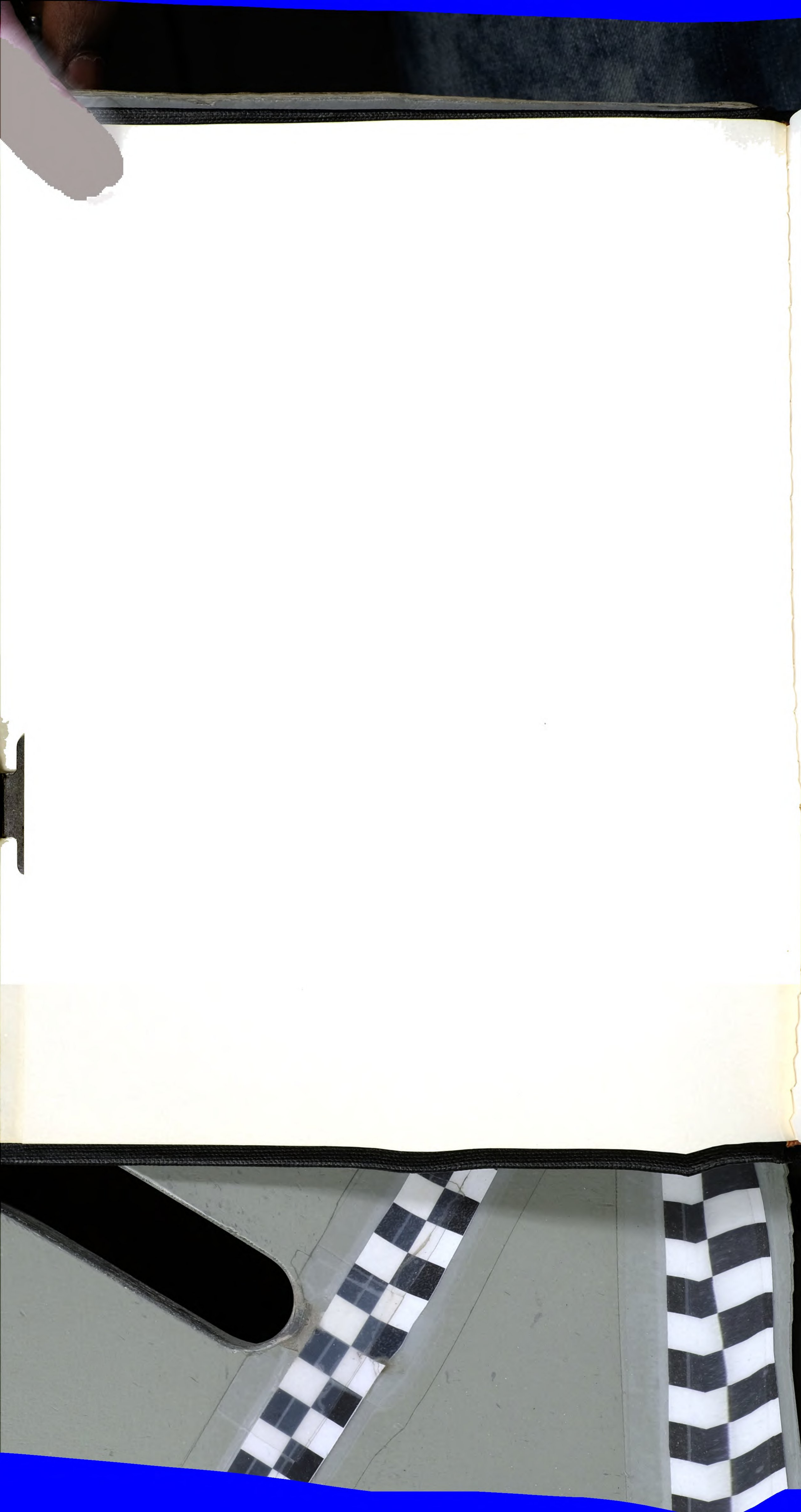
"How did you first learn about...?"
(Each of 14 agricultural innovations)

Code: place of obtaining the information

0 - Not applicable/no answer
1 - In village itself
2 - In another village
3 - In town
4 - In a city
5 - In Midwestern Nigeria
6 - In Western Nigeria
7 - In Northern Nigeria
8 - Outside Nigeria

Score is the per cent of each category selecting 1, the location of internal sources, and is averaged for all 14 agricultural innovations, listed earlier in the present appendix.







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