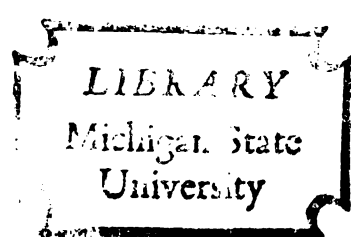


PEASANT TYPOLOGY AND
COMMUNICATION BEHAVIOR:
A FACTOR ANALYTIC STUDY IN
SIX INDIAN VILLAGES

Thesis for the Degree of M. A.
MICHIGAN STATE UNIVERSITY
K. S. SRIPADA RAJU
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THESIS



ABSTRACT

PEASANT TYPOLOGY AND COMMUNICATION BEHAVIOR: A FACTOR ANALYTIC STUDY IN SIX INDIAN VILLAGES

By

K. S. Sripada Raju

Mass media and extension agents are important channels carrying messages of new agricultural technology to the peasants of developing countries. What can we tell media personnel and extension agencies about their peasant audiences? For example, do the peasants form a mass, undifferentiated audience, or can the audience be separated into different subcultures? This study will attempt to empirically answer such questions in the following manner: 1) by reducing a large number of demographic, economic and sociological characteristics of peasants into parsimonious dimensions; 2) by constructing a peasant typology; 3) by examining the communication behavior of peasants.

Data for this study were part of India Phase II Diffusion Project. Personal interviews were conducted using structured instruments with 559 peasants purposively selected in six villages in the states of Andhra Pradesh, Maharashtra,

K.S. Sripada Raju

and West Bengal. In each village all peasants aged 50 years and below and cultivating 2.5 acres of land or more were interviewed.

Factor analysis was the major analytic method employed in this study. Data analysis began with an initial set of 66 variables describing a wide range of peasant characteristics. Subsequent considerations such as measurement procedures, insignificant correlations, and missing data, reduced the number of variables to 23. Of these 23 variables, six were classified as communication variables and separated from the factor analysis. The remaining 17 variables were submitted for R-type factor analysis. Three factors resulting from this analysis explained 41 percent of the variance and were named: 1) Change Orientation, 2) Farm Resources, and 3) Social Activity.

A random sample of 94 respondents from the original 559 was subjected to a P-type factor analysis. Here, correlations between people as variables and 17 characteristics (used previously in the R-type factor analysis) as observations were factor analyzed to produce a typology of peasants. Based on a three factor solution explaining 51 percent of the variance, a three-fold typology was created and the types were named Modern, Transitional, and Traditional. Peasants sharing variance common to all three types

K.S. Sripada Raju

were treated as a "Mixed" type.

The dominant dimension of modernization process was indicated by a higher degree of knowledge about the developmental administrative personnel and some degree of experience living outside the village system. It was also indexed by a greater propensity to adopt new farm and health practices. Of the three types of peasants who could be distinguished by their Orientation to Change, control over Farm Resources, and participation in Social Activity, Type I (Modern) and Type III (Traditional) show a greater degree of contact with the extension agency when compared to Type II (Transitional). Among the three types this suggested a curvilinear relationship between Change Orientation and communication contact with the external system.

Accepted by the faculty of the Department of
Communication, College of Communication Arts, Michigan
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ments for a Master of Arts degree.


Director of Thesis

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	11
LIST OF TABLES	vii
LIST OF FIGURES	1x
CHAPTER	
I INTRODUCTION	1
Change Processes in Peasant Societies	1
Objectives of this Study	2
Why this Study?	3
Outline of the Thesis	6
II ELEMENTS OF PEASANT BEHAVIOR	7
Peasant Movements	7
Structural Attributes and Attitudes of Peasantry	8
Economic Behavior of Peasants	12
Focus on Communication Process	14
Farmer Audience Studies	15
III DATA AND METHODOLOGY	18
Source of Data	18
Drawing the Sample	19
Description of the Villages Studied	21
Instrument Construction	25
Data Collection	26
Selection of Variables	27
Stages and Steps in Data-Analysis	27
Operationalization of the Variables	39
IV FINDINGS OF FACTOR ANALYSIS	49
Results of R-Type Factor Analysis	49
Dimension I: Change Orientation	51
Dimension II: Farm Resources	51
Dimension III: Social Activity	54
Communication Patterns	56

CHAPTER	Page
V FINDINGS OF FACTOR ANALYSIS	61
Peasant Typology	61
Method of Analysis	61
Description of Peasant Types	64
Type I: Modern	74
Type II: Transitional	74
Type III: Traditional	75
Peasant Types and Communication Posture	78
VI SUMMARY, CONCLUSIONS AND SUGGESTIONS FOR FUTURE RESEARCH	81
APPENDIX	90
BIBLIOGRAPHY	97

LIST OF TABLES

Table	Page
1 Location and Size of Sample Villages Selected for Phase II Study in India	22
2 List of Variables selected in Stage I of the Present Study	28
3 Variables used in Data Analysis at Stage II (R-Type Factor Analysis I).....	31
4 Variables used in Data Analysis at Stage III (R-Type Factor Analysis II).....	35
5 Variables used in Data Analysis at Stage IV (R-Type Factor Analysis III)	37
6 Variables used in Data Analysis Stage V (R-Type Factor Analysis IV and P-Type Factor Analysis).....	38
7 Variables used in Correlational Analysis between Factor Dimensions and Communication Characteristics (Stage VI).....	41
8 Percent of total variance explained by each of the three rotated solutions meeting a Kiel-Wrigley criterion of three variables for terminating the factor rotation	50
9 Variables loading highest on Factor I	52
10 Variables loading highest on Factor II (Farm Resources).....	53
11 Variables loading highest on Factor III (Social Activity).....	55
12 Factor loadings for the three-factor solution	57
13 Zero-order correlations between three dimen- sions of peasant characteristics and communication behavior	59
14 Percent of total variance explained by each of the five rotated P-factor solutions	63

Table		Page
15	Highest loadings on Factor (Type) I in three-factor solution	65
16	Highest loadings on Factor (Type) II in three-factor solution	67
17	Highest loadings on Factor (Type) III in three-factor solution	68
18	Mixed Types	69
19	Number of subjects loading by Types	71
20	A description of three types of peasants by the weighted standard scores	73
21	Dimensions of peasant characteristics and weighted standardized scores of peasant typology	76
22	Mean Scores of peasant types on selected communication variables	79

LIST OF FIGURES

Figure		Page
1	A notional Map showing Location of eight sample villages surveyed in India Phase II Diffusion of Innovations Study	Facing page 21
2	Flow chart of the Data Analysis Methods used in the Present Study	40

CHAPTER I

INTRODUCTION

Change Processes in Peasant Societies

Prompted by the accelerating pace of directed change in the emerging nations, an increasingly large number of social scientists are investigating the nature of transition in the traditional societies (Goheen; Srinivas; Karve and Singer, 1958). Their output is extensive and varied. For example, there are ethnographic monographs by anthropologists, observations and analyses by development economists, sociologists, and political scientists (Potter and others, 1967). In addition, there are accounts and impressionistic reports by administrators, religious missionaries and journalists. There are several fictional and semi-fictional themes and plots plaited by novelists and social observers (Karanth, 1950; Nair, 1960). Many of these efforts have sought to explain change processes in the emerging societies by taking settled peasant agriculture as the point of departure in the descriptive accounts and analytical models (Nash, 1964). Until we understand the nature of traditional societies based on peasant agriculture, we will not understand why agricultural development is slow (Hagen, 1962, p. 16).

Encompassing all the factors related to change in peasant societies is the concept of modernization.

Y-

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22

22

21

2

3

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Y

Modernization is defined in different ways, focussing on various elements of change processes and components of individual and social life (Weiner, 1966, p. 3). Thus, modernization can refer to all sections of a society of which peasants are only a subset. Within this subset, several aspects of peasant life such as sociological, economic and political behavior can be studied. Somewhat more specifically, Rogers with Svenning (1969) defined modernization as the process by which individuals change from a traditional way of life to a more complex, technologically-advanced, rapidly changing style of life.

Communication processes involved in modernizing peasants have received a special attention. The communication behavior of peasants is just one factor that effects modernization. Yet, it is a very important factor especially for those organizations that plan, organize, and institute changes. Clearly, an examination of the relationship between communication behavior and other factors related to modernization in peasant society would be useful to such institutions.

Objectives of the Study

The purposes of this study are as follows:

1. To factor analyze demographic, sociological, and economic characteristics of peasants to obtain a parsimonious description of the underlying dimensions of modernization.
2. To factor analyze the same set of variables used to achieve the first objective to evolve a typology of peasants.

3. To determine the communication correlates of modernization dimensions among peasants.
4. To describe the communication behavior of peasant types.

Why this Study

There are three main justifications for the present study. First, there has been very little empirical research on the communication patterns of peasants. There is need for empirical studies which lead to more useful knowledge of the peasant audience to bring about more effective communication and change in their ways of life. There is an urban bias in the handling of communication with peasants, which perhaps has been the single most important factor responsible for inadequate and faulty communication with them (Dube, 1967, p. 165).

Any change agent looks at his clients in terms of sub-audiences. For example, one may look at peasants as to whether they are large or small cultivators of land. Another change agent may look at them in terms of whether they are owners of land or tenants. Still another way would be to look at the kind of interest the peasants evince in what the change agent says, and the way they try to incorporate some of his ideas into their farm plans and decision-making processes. The main problem with this approach is that these are single variable classifications, and hence inadequate in a composite understanding of the peasant society. A multi-variate approach which reduces a number of important

variables measuring peasant characteristics into a neat summary of the traits would be helpful in enabling the change agent to acquaint himself better with his audience.

Secondly, there are a number of studies of modernization as reported by Ascroft (1968) at the individual level in countries like Brazil (Whiting, 1967), Canada (Jain, 1965), Colombia (Deutschman and Fals Borda, 1962; Ascroft, 1968), Kenya (Ascroft, 1966), Pakistan (Rahim, 1966), Puerto Rico (Farace and others, 1967), and the United States (Donohew, 1966). Recently, Lindley (1968) has done a study on Bolivian peasants. There are no comparable studies of this kind done in India. The present study is an attempt to examine peasant behavior on a comparable basis in a sample of six Indian villages. Hopefully, such analysis will be useful as a comparison to other studies.

Ascroft (1968) in his comparative analysis of the web of modernization showed at least one factor in which mass media indices were predominant. Because of the methodological artifact of the principal axis factor analysis with orthogonal rotations employed in most of the studies, the relationships between different dimensions of modernization and communication variables have not been established. When a set of variables which includes demographic, sociological, economic, political and communication aspects of the peasant society is submitted for factor analysis, variables are assigned to a factor under which they share

the maximum common variance. This is indicated by their highest loading on that factor. Orthogonal solution assumes that the two factors are independent. Thus, for example, if the communication variables load highest on a factor which subsumes economic and demographic variables, and we have another factor which subsumes sociological and political variables, one finds according to the assumptions of orthogonal solution, no correlation established between communication variables and, say, sociological variables. This is because each set of variables loads on two factors which are independent of each other. In order to overcome this methodological limitation, the present study employs factor analytic technique to tap the underlying dimensions of demographic, economic, and sociological characteristics of peasants. The obtained dimensions will then be treated as independent variables and correlated with communication variables for a more specific description.

Thirdly, this study can, in part, be justified on methodological grounds. The analysis of peasant communication behavior is based on survey data which employ more structured methods of data gathering than the case study approach of many peasant studies. Some 559 peasants in six villages located in different regions of India are the subjects of this study. Such a sample across regions increases the potential for generalization to a larger population of peasants.

Outline of Thesis

The objectives and justification for this study were indicated in this Chapter.

In Chapter II the concept of a subculture of peasantry is reviewed and some modernization variables bearing on the transformation of peasant societies are discussed.

In Chapter III the setting and scope of this study are outlined. Methodological procedures relating to sampling and operationalization of the concepts are discussed. Statistical techniques employed in the analysis are also described.

Chapter IV describes the dimensions of demographic, economic, and sociological characteristics of Indian peasants based on factor analyses of data. The correlations of these dimensions with mass media exposure, urban and extension agency contact are also indicated.

Chapter V deals with the description of the typology of peasants and their communication behavior.

Chapter VI summarizes the findings and notes some limitations of this study and implications for future research.

CHAPTER II

ELEMENTS OF PEASANT BEHAVIOR

In recent years there is growing literature that focusses on the ideology and values of peasantry. The processes of change occurring among peasants with the impact of revolutionary changes in political structure of societies, urbanization, and industrialization, have provided several theses and themes for ideological movements, fictional, and scholarly studies. Anthropologists and sociologists attempted to analyze the nature of the values, institutions, labor, and economies of the peasants. Economists discussed the special nature of the peasant economy and debated the relevance of standard economic concepts in analyzing the economic behavior of peasants. Focus on communication behavior of peasants has been slight. A brief review of some notions about peasants from previous studies provides background for the analyses to come.

Peasant Movements

Writings of political revolutionaries and leaders of peasant movements highlight the virtues of peasantry and their sense for tradition and equity (Mitrany, 1961). As a part of the struggle against feudal order, colonial regimes, and foreign domination, peasant leaders advocated strong political action to end the process of exploitation. Ideological

conflicts with Marxist communists and capitalists lead some champions of the cause of world peasantry to say that neither of these systems recognizes the progressive nature of the peasant economy. Hence peasants of the world need their own organization. And a call is made: "peasants of the world unite" (Ranga, 1957). Thus the previous approaches to peasant problems are more ideological and less concerned with the life of the peasant, as an on-going behavioral system.

Structural Attributes and Attitudes of Peasantry

The observations and findings of anthropologists and sociologists regarding the social structure and social psychological characteristics of peasants greatly help in identifying barriers to the diffusion of innovations among peasants. Rogers with Svenning (1969) reviews a large number of these studies examining various definitions of peasants, mainly by anthropologists. They conclude that:

A great deal of similarity is evident in most definitions of peasantry. The central, common elements are those which imply that peasants are a special type of farmers, oriented to subsistence production, but who are seldom completely self-sufficient.

They synthesize a descriptive model of the subculture of peasantry, and view this model as an interlocking system with the following central elements:

1. Mutual distrust in interpersonal relations
2. Lack of innovativeness
3. Fatalism

4. Low aspirational levels
5. Limited view of the world
6. Lack of empathy

Mutual distrust is the degree to which the peasants are characterized by suspiciousness, lack of co-operation in inter-personal affairs, and a weak sense of identification with community interest. Innovativeness is the degree to which a person is earlier in adopting new ideas than others in his system. Lack of innovativeness is reflected in the tendency of peasants to avoid new ideas and to have negative attitudes toward changes. Fatalism is characterized by a passive view of the world implying the feeling that an individual's efforts cannot determine his future. Low aspirational levels refer to the predisposition of peasants to desire future state of being such as levels of living, social status, education and occupation not very far removed from their already low levels. Limited view of the world refers to the gross sense of punctuality and the unrefined nature of time periods and lack of concern for the future. Empathy is the ability of an individual to project himself into the role of another person, understand this person's feelings, and take them into account when dealing with him.

Rogers with Svenning (1969) examine each of the foregoing elements in detail, based on descriptions of single peasant villages by anthropologists and sociologists in Mexico, Colombia, Italy, Turkey, India, and South Vietnam. They

explain, in terms of perceived limited good, familism, dependency, and hostility toward government authority, why there is mutual distrust in interpersonal relations among peasants. Most peasants have negative attitudes toward change as a result of past generations of generally unfavorable conditioning toward innovations. Fatalism is traced to the occupation of the peasants, viz., deteriorating agriculture, an authoritarian family structure and ignorance of cause-effect relationships. This fatalistic orientation has a negative influence on aspirational levels, levels of achievement motivation for farm jobs, and lack of developmental horizon typified by impulse gratification rather than deferred gratification. Peasants' limited view of the world is characterized by an orientation within, rather than external to their social system, low geographic mobility, low mass media exposure, and low empathic ability.

Nair's (1961) reports, based on her series of visits and talks to several peasants in Indian villages, partially support Rogers with Svenning's (1969) descriptive model. However, Nair found no uniformity in the prevailing value system of peasants. There were striking variations in response to the newly-provided irrigation facilities. The peasants had much deeper roots in traditional beliefs and attitudes, such as those to work, to surplus production, and to diet. One characteristic common to almost all rural communities was the attitude of the peasants toward their level of living and its improvement: the great majority of peasants did not share

the concept of an ever-increasing level of living. The peasant did not consider it moral to want more. Nair concluded that unless the desire for change and for appreciably higher level of living take root in the peasant communities, agricultural innovations like new irrigation methods and improved methods of cultivation will often not be accepted or exploited fully.

Brewster (1967) discusses in detail barriers to progress in terms of peasant village traditions, peasants' technological weaknesses, their social powerlessness, and the primacy of village and kinship loyalties. He showed how barriers to progress can be transformed into positive motivations for economic and cultural growth. The transformation processes may take the form of stirring up discontent among peasants with traditional ways of life and work. This may consist of adopting a package approach to the development problems. The package approach takes into account the interrelationship of all the variables - behavioral as well as technological - that affect the performance of agriculture. Some well-rounded research studies must be designed to discover how achieved rates of economic growth stemmed from package approach. In one study, Rao (1965) found a marked impact on farmers in West Godavari district (India) as a result of the package approach. These studies should also show how the progress-blocking social structures and interlocking system of beliefs and values were overcome.

Economic Behavior of Peasants

Agricultural economists are another group of scientists who have attempted to analyze peasant economic behavior and institutional settings. Chaynov (1925), in his study of peasant farm organization, delineated an economic model of social environment and basic cultural traits of the peasant community. He rejected the idea that the peasant family farm should be viewed as a business, i.e., an enterprise of a capitalistic sort, operated with hired workers in order to earn profits. In contrast, Chaynov (1925, p. 41-42) described:

An hypothesis based on the concept of the peasant farm as a family labor farm in which the family as a result of its year's labor receives a single labor income and weighs its efforts against the material results obtained ... we take the motivation of the peasant's economic activity not as that of an entrepreneur who as a result of investment of his capital receives the difference between gross income and production overheads, but rather as the motivation of the worker on a peculiar piece-rate system which allows him alone to determine the time and intensity of his work.

He held the view that economies made up of family units where the category of wages was absent, belonged to a fundamentally different economic structure and required a different economic theory. Chaynov (1925, p. xvi) explained the mechanism by which a peasant family determines its agricultural output as follows:

Each family seeks an annual output adequate for its basic needs; but this involves drudgery, and the family does not push its work beyond the point where the possible increase in output is outweighed by the irksomeness of the extra work. Each family

strikes a rough balance or equilibrium between the degree of satisfaction of family needs and the degree of drudgery of labor.

Thus, using motivational assumptions of non-capitalist economics, some economists made a theoretical case by saying that the peasant institutions will still be needed if the largest output is needed from the sustaining sectors of economic development (Roegen, 1960). This occurs because the employment of family labor is governed by considerations of maximizing the total output instead of marginal productivity.

There is, however, another view that detects a depressing and a ceiling effect on individual peasant achievement and enterprise (Dandekar, 1962). Further studies and empirical evidence largely confirm the hypothesis that peasants act in an economically rational manner allocating their stock of labor between non-economic activities and production of material goods and services (Mellor, 1967). This led to the conclusion that peasants do allocate their resources rather efficiently when viewed as individual decision-makers operating within their particular environment. The inefficiency lies with society's allocation of resources, i.e., its failure to provide an environment in which the peasant can be more productive. Policy implications of these ideas led the planners and administrators of agricultural development in India to restructure the socio-economic framework of peasants. Systematic linkages were built between the peasant family and his village structure, and the outside world with a vast network of service exchanges. These linkages facilitate the

peasant modernization process by providing proper incentives as well as fully-tested research results of agricultural practices applicable to peasant farm conditions. In addition, such linkages increase the available supply of agricultural inputs like seeds, fertilizers and pesticides, credit and marketing facilities.

Focus on Communication Process

Among all the variables initiating and sustaining the modernization process among peasants, an efficient communication system is crucial in the transformation of traditional agriculture. It helps peasants become aware of new alternatives, informs them how these alternatives "work" under village conditions, and helps them to understand the reasons for the success or failure of innovations. When the wide variability of economic, social, and psychological characteristics of the peasant culture is taken into account, it becomes obvious that messages communicated to peasants cannot be effective unless the recommendations and forms of message are made compatible with the physical and social situational factors relevant in any given case. This calls for a flexibly-tailored peasant communication and education program suitable to small geographical areas, based on the knowledge of the sub-culture of peasantry.

Some modernization studies (Smith and Inkekes, 1966; Kahl, 1968) have posited that modernism among people is

characterized by industrial experience, urban living, and high mass media participation. There is another school (Gusfield, 1967; Bennett, 1968; Sen, 1968) subscribing to the view that modernization is a synthesis of new traits absorbed by a social system without disrupting the continuity and cohesiveness of the system. Peasant society is very relevant to study modernization as such a synthetic process. Because the peasant society is characterized by farming experience, rural living, and a low degree of mass media penetration, it has led to a line of thinking that peasantry is a stronghold of traditionalism. As the transformation of their way of life is slowly being affected by the introduction of new agricultural technology, new network of institutional relations, and new messages that originate from outside their village and kinship systems, questions are raised as to whether we find peasants that absorb new ideas and show traits of modernism. What are the communication links between the peasants and the sources of change? Answers to such questions help the change agents to know the character of their audience.

Farmer Audience Studies

Exploratory studies leading to a more useful knowledge of the farmer audience have been done in the United States and in Puerto Rico. Wells and MacLean (1962) suggested three typologies of the U.S. farmers.

1. "Other-directed," those farmers who place a high value on close personal relations with other people, on being

informed about agriculture and current events, interested in keeping up and adapting to changing times.

2. "Traditional-independent," those who have very strong orientation to farming as a way of life with an apparent reluctance to be influenced by other people and reject more than other types, any value in reading a good daily newspaper.

3. "Modern Rural Businessman," those who specifically express a business orientation to farming with a desire for suburban style of life in a rural setting and are more strikingly oriented to print media than the other types.

Oliver-Padilla (1964) identified dominant value patterns among Puerto Rican dairy farmers. He differentiated three types of dairy farmers: tradition-oriented, transitionally-oriented, and progressive-oriented. He found that being progressive-oriented was positively related to being impersonal and extra-community channel oriented. Being traditional was related to egocentric and intra-community channel orientation. Further, progressive-oriented dairy farmers were the most frequently exposed to the media channels, especially to farm magazines and press. The traditional-oriented dairy farmers were generally less exposed to mass media.

Rahim (1968) described four types of farmers among the members of co-operatives at Comilla, East Pakistan. These types were described in terms of (1) individual modernity, (2) interest and involvement in agriculture, (3) individual innovativeness, and (4) collective innovativeness. Type I

were high on all the four characteristics. Type II represented the transitional phase of modernization. They were high in modernity but low in interest and involvement in agriculture. Type III and Type IV farmers were low in modernity and low in innovativeness.

No typological studies of the Indian peasants are reported. The foregoing studies indicate some methods for constructing typologies as also their usefulness in understanding communication structures and processes. The present thesis is an exploratory study toward constructing a peasant typology based on data from six Indian villages.

CHAPTER III

DATA AND METHODOLOGY

The sample for the present study consists of 559 peasants in six villages located in three states in India: three villages in Andhra Pradesh, two in Maharashtra, and one in West Bengal. All respondents were peasants who were not more than 50 years of age and cultivated at least 2.5 acres of land during the time of interview in March and April of 1967.

Source of Data

Empirical data for the present study were part of a larger three-phased study investigating the diffusion of agricultural, health and family planning innovations in village India (Rogers, 1968). In each phase, the data collected were to serve specific research objectives. Phase I focussed on village as the unit of analysis to examine the relative success or failure of programs of agricultural development at the village level. Phase II was designed to obtain data regarding variables related to innovativeness and opinion leadership among peasants. Thus, the Phase II study focus was on the peasant, the farm setting, the social context in which he made decisions, some aspects of the communication process by which he learned about innovations in agriculture, and certain aspects of the peasant's attitude toward the world about him (Roy and

others, 1968). Phase III aimed at determining, via field experimental methods, the effects of several novel communication approaches like radio farm forums, adult literacy classes, and print media for introducing innovations in the village.

The present thesis is mainly based on an analysis of the data collected in Phase II.* A brief account of sample and data-collecting procedures is given in the following section.

Drawing the Sample

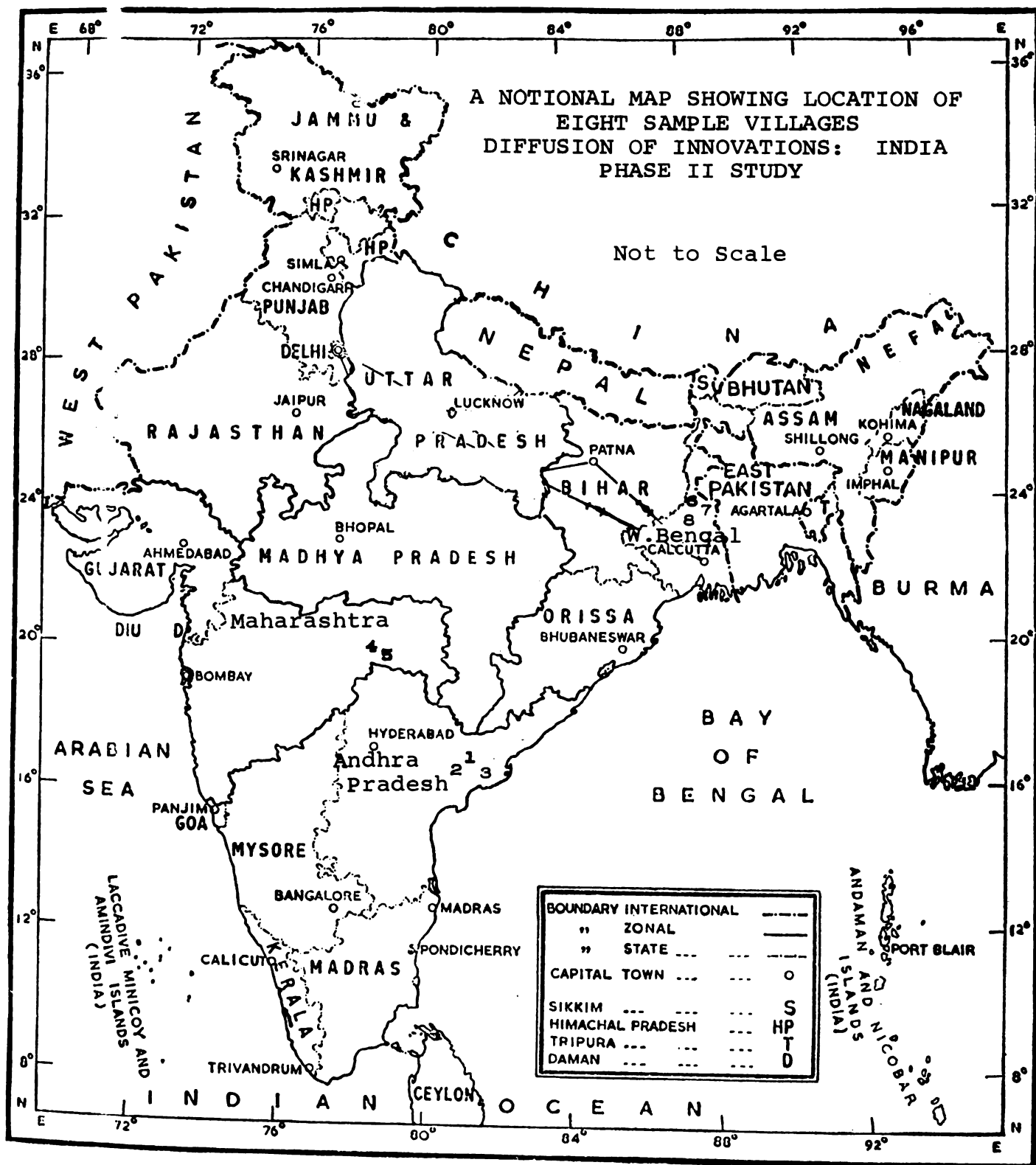
The data were collected by personal interviews with peasants in three different states as mentioned earlier. These states were selected purposively both to provide geographic variability and to represent different types of development administration, i.e., three different modes of involvement of local self-government. The three were: Andhra Pradesh, to represent locally elected people at the block level; Maharashtra, with locally elected people involved at the district level; and West Bengal, to represent self-government coming from the state level. Nine districts were selected across the three states purposively to represent relative intensities manifested by the intensive agricultural development program, the tribal development program, and the more or less normal development program (Fliegel and others, 1968, pp. 4-5). Beyond the purposive selection at the state and

*Eight villages were studied in Phase II. Among these, only six villages were selected for analysis in the present thesis due to lack of data on caste or similar socially ascribed status variable in two West Bengal villages.

district levels, a three-stage random sampling design was used to select three development blocks, six village level worker circles, and 12 villages from each selected district, thus giving a sample of 108 villages. From these 108 villages eight villages were selected to be approximately typical of the range of success or failure of agricultural programs (Roy and others, 1968, p. 9).

In each of these eight villages, selection of the peasants for interview was guided by two criteria: (1) the size of farm operated, and (2) the age of the peasant respondent. Regarding the first criterion, the selection was restricted to peasants who actually made day-to-day decisions on the farm, and who were farming at least 2.5 acres (one hectare) of land at the time of the data-gathering. Regarding the second criterion, the selection of peasant respondents was further restricted to those heads of farm households who were 50 years of age or younger at the time of the study. The rationale for the first criterion was the feeling that many of the agricultural innovations were not practical for small-sized farmers. The intent in restricting the selection to peasants aged 50 years or below was to avoid the ambiguous decision-making situation in which the older generation is gradually handing over responsibility to the younger (Roy and others, 1968, pp. 9-10). Thus, in each of the eight villages, every peasant who fitted the size and age criteria was interviewed. There was no refusal to be interviewed by any peasant respondent. The interviews were held with a total sample of 680 peasants

Figure 1



spread over eight villages across the three Indian states. Table 1 gives some particulars about the samples selected. Figure 1 shows the location of eight villages surveyed in the Phase II study.

Description of the Villages Studied

Manchili (N=99), Kanchumarru (N=33), and Polamuru (N=99) villages are located in the West Godavari District delta which is well-served by a network of irrigation and transport facilities. All the three villages are situated three to six miles from each other in the same administrative block. The nearest town market is within 13 miles connected by all-weather road, except for Kanchumarru village. The social structure of each village is characterized by a hierarchy of different castes.* Caste gives an ascriptive social status to its member in the village social system. In Manchili and Polamuru villages, the dominant castes engaged in farming are (in order) Kshatriya, Kapu, Reddy, Telaga, Settibaliya and Mala. In Kanchumarru the dominant caste is Kshatriya.

The three villages are part of a "package district" in which an intensive agricultural program was established in

*Castes are endogamous groups restricted in many cases to certain limited geographical areas. A certain degree of traditional behavior is enforced in many cases among the members of the caste by a caste council made up of a number of respected older men in a caste. These castes live together with other castes without mingling except on certain occasions. Inter-communication between castes is peripheral and tangential. A caste generally has a hereditary occupation which is, however, not exclusive to it. Castes are arranged in a hierarchical order (Karve, 1968).

Table 1. Location and Size of Sample Villages Selected for the Phase II Study in India.

State	District	Village	Village Population	Number of Respondents
Andhra Pradesh	West Godavari	Manchilli	1,500	78
Andhra Pradesh	West Godavari	Kanchumarru	2,600	33
Andhra Pradesh	West Godavari	Polamuru	3,400	99
Maharashtra	Yeotmal	Pophali	1,149	100
Maharashtra	Yeotmal	Mulawa	3,348	146
West Bengal	Birbhum	Amdole	2,460	103
West Bengal	Birbhum	Harishpur*	1,709	59
West Bengal	Birbhum	Laxmidanga*	1,573	62

*These villages were dropped from the present study because information on caste or other sociologically similar measurement of ascriptive social status was not available.

Source: Roy and others, 1968.

January, 1961. The program was designed to ensure needed resources--seeds, fertilizer, irrigation water, implements, credit, and technical assistance--in a "package", so that agricultural development could proceed at the maximum pace.

The villages had populations of 1,500, 2,600 and 3,400, respectively, in 1961. All the villages are well-served by a network of irrigation canals from the Godavari River. Filter point wells are also sources of irrigation water. The peasants of these villages use modern agricultural implements like the iron ploughs, push-hoes, sprayers, and even some tractors. Chemical and biological inputs like fertilizers, pesticides, improved varieties of seeds, and improved cattle are used by some peasants. Co-operative credit institutions make available farm credit in all three villages. There are two crop seasons: Sarawa (beginning from June-July) and Dalawa (beginning from December-January). Though agricultural laborers form one-tenth of the total population of the district, there is a considerable shortage of labor in the peak agricultural seasons. Many laborers are also engaged in part-time farming as share-croppers. Paddy, sugar-cane, banana, groundnut, and chillies make up the main crops. Coconut plantations are frequent. Marketing services for food grains are offered by both private traders and public corporations like the Food Corporation of India. All the three sample villages have shown prize-winning performance at the state or district level in the progressive adoption of high-yielding varieties of seeds and plant protection measures.

Pophali and Mulawa, the two sample villages in Maharashtra state, are located within 10 miles of a town served by all-weather road and state-owned transport buses. Bullock carts are the chief means for transporting agricultural produce. The population of these villages in 1961 was 1,149 and 3,348 respectively. The predominant Hindu castes in Pophali village are Maratha, Kasar, Dhanagar, Koshti, and Chambar in addition to some Muslims. In Mulawa village the predominant castes are Brahmin, Maratha, and Dhangar in addition to some Buddhists. The main crops are jowar and cotton, pulses and wheat are minor crops. Use of high-yielding cotton seed variety is in vogue, whereas hybrid jowar seeds are not in much use. Peasants obtain credit facilities both from co-operative society and private money-lenders. Electricity is available in both the villages, but only a few landowners have electric pumps or oil engine sets to lift water from wells for irrigation purposes. The chief agricultural implements used are the indigenous harrow, iron and wooden plough, hoes, sickles and local seed-drills. Improved modern agricultural implements are not in much use. Since there is no assured irrigation water supply, fertilizers are not in wide use.

The three West Bengal villages of Amdole, Harishpur,* and Laxmidanga* have a population of 2,460, 1,709, and 1,573, respectively. Except for one village which is situated on an all-weather road, the villages are difficult to reach in the

*These latter villages are not included in the present analysis.

rainy season. Paddy and sugar-cane are the main food and cash crops. Pulses are grown for domestic consumption. Improved paddy seed, pesticides and sprayers are in use, but there is little interest in improved cattle. Private money-lenders are the principal source of credit. The predominant caste in Amdole village is Sadagope, while Muslims are dominant in Harishpur and Laxmidanga villages.

Instrument Construction

The interview schedule was constructed to measure the desired variables. It was first translated into the Telugu language and was pre-tested in the state of Andhra Pradesh. After this first pre-test, suitable changes were made, keeping in mind the capacity of the peasant informant. A second pre-test of the instrument was completed in all three states after translating the survey instruments to the respective state languages.* The pre-test responses were then tabulated and screened to identify the meaning and use of expressions familiar to the peasant in all the three language areas. Role-playing methods were employed in training the interviewers. Several interviewer training sessions, spread over four weeks, were held both before and after the pre-testing of the questionnaire.

*Telugu in Andhra Pradesh, Marathi in Maharashtra, and Bengali in West Bengal.

Data Collection

Interviews were conducted in each of the three states by teams of four interviewers led by a supervisor. Because of language differences, the team members who spoke the appropriate regional language as their mother-tongue worked only within their home state. All teams had prior field interviewing experience and had participated in Phase I interviews, training sessions, and pre-testing. The writer was one of the interviewers in Andhra Pradesh. All the interviewers had Masters' degrees in sociology, economics, social anthropology, and agricultural science plus experience in rural studies.

The interviewing teams typically established residence by staying in a private home in a sample village. They made lists of eligible respondents by consulting official voter registration lists, village officer's cultivators' list, and knowledgeable people in the village. They then divided the list and proceeded to interview eligible respondents. There was good rapport since the teams previously visited the village during Phase I study of the Project. Typically, about 1½ hours were needed to complete each interview. Interview schedules were checked by the supervisor in the field, making it possible to return to the respondent if a question was omitted. The field work was done in March and April, 1967.

After completing field interviewing, the team members coded all the interview data for computer processing. Code categories were established on the basis of sub-sample, and

then the data were systematically converted to numerical form. All coding was checked for random as well as systematic errors. Subsequently, a variety of scales and indexes were constructed for many of the variables (Roy and others, 1968, pp.11-12).

Selection of Variables

All the Phase II data from the six villages were scrutinized in selecting the variables for this study. As our main objectives are to describe the peasant types and their communication behavior, it seemed that 66 variables would be meaningful for that purpose. The main criterion in selecting these 66 variables was whether the variables would be conceptually and statistically useful in describing the demographic, economic, sociological, social-psychological, and communication behavior of the peasant. Table 2 shows the variables that were tentatively chosen for the first step in the data analysis.

Stages and Steps in Data Analysis

Stage I

Step 1: Keeping in view the objective of describing the peasant types and behavior, 66 variables were tentatively selected (Table 2).

Step 2: The 66 variables were used for computing basic statistics: mean, standard deviation, skewness, and kurtosis. A zero-order correlation matrix was obtained for all the 66 variables.

Table 2. List of Variables Selected in Stage I of the Present Study

Serial Number	Name of Variable
1.	Caste: ritual rank
2.	Caste: economic rank
3.	Caste: power rank
4.	Religion
5.	Family size
6.	Age of respondent
7.	Education level of respondent
8.	Education level of respondent's spouse
9.	Respondent's children's education index
10.	Number of acres cultivated by respondent last year
11.	Number of different crops sold last year
12.	Total value of agricultural produce
13.	Self-evaluation of crop yield
14.	Employment other than own farming
15.	Number of days worked in 1966 on job other than own farming
16.	Tenure status
17.	Trial of high yielding variety (HYV)
18.	Channel orientation of HYV knowledge
19.	Information source that convinced respondent to try HYV
20.	Chemical fertilizers bought in 1967
21.	Index of change agents known
22.	Change score on farm in next 2-3 years
23.	Social participation
24.	Residential experience outside the village (another village, town, city exposure index)
25.	Urban contact index
26.	Urban pull
27.	Radio exposure
28.	Family's radio exposure
29.	Movie exposure
30.	Newspaper exposure
31.	District news channel
32.	Patriachialism
33.	Educational aspiration for the youngest son
34.	Occupational aspiration for the youngest son
35.	Village norm for housewife to learn to read and write
36.	Self-reliance
37.	Village norm for men's vasectomy adoption
38.	Fragmentation index

Contd.

Table 2 (continued)

Serial Number	Name of Variable
39.	Channel credibility
40.	Deferred gratification
41.	Income aspiration
42.	Taxes paid
43.	Number of days on farm reported for operator
44.	Number of days on farm reported for wife and other family members combined
45.	Number of days reported for labor (grand total)
46.	Sum of operator labor, wife and family labor, and hired labor
47.	Percent of total which is female labor
48.	Family categories
49.	Farm labor efficiency I
50.	Measure of commercialization
51.	Agricultural (innovation) trial index
52.	Index of times talked to extension agent (Extension agent contact)
53.	Level of living index
54.	Achievement motivation
55.	Political knowledgeability index
56.	Credit-risk orientation index
57.	Secular orientation index
58.	Empathy index
59.	Interpersonal trust index
60.	Inter-village ritual caste ranking
61.	Bullock power used
62.	Mass media index
63.	Farm efficiency II (rupees per day of labor input), raw data
64.	Farm efficiency III (rupees per day of labor input), standardized for village differences)
65.	Health (innovation) trial index
66.	Polymorphic opinion leadership

Step 3: Basic statistics and correlations for the 66 variables were carefully inspected. Consequently, out of the tentatively selected 66 variables, 21 variables were dropped from the analysis for the following reasons:

1. Missing value for some variables were more than ten percent.
2. No strong justification could be made for some variables to satisfy the assumptions of ordinality.
3. Some were not significantly correlated (i.e., correlation was less than .12 which is significantly zero at the five percent level) with at least three other variables of the selected set.
4. Some variables were considered redundant as there was already a satisfactory measure in the selected set of variables.

Stage II

Step 4: After screening the variables in the light of the previous considerations, 45 variables were retained for purposes of further analysis (Table 3). Out of these 45 variables, ten variables were classified as communication variables and removed. The remaining 35 variables which measured demographic, economic, and social psychological traits of the peasants, were submitted to R-type* factor analysis to reduce the large number of variables to a more parsimonious set of dimensions.

*See Appendix for description of R-type factor analysis.

Table 3. Variables used in Data Analysis at Stage II (R-type Factor Analysis I)

Variables discarded*	Variables retained for R-type factor analysis I	Communication Variables retained as dependent variables for correlational analysis
1. Caste: ritual rank within village	1. Family size	1. Channel orientation of high yielding seed knowledge
2. Caste: economic rank within village	2. Age	2. Information source convincing the trial of HYV.
3. Caste: power rank within village	3. Education	3. Urban contact index
4. Religion	4. Extent of land cultivated	4. Radio exposure
5. Education of respondent's spouse	5. Number of crops sold	5. Family exposure to radio
6. Children's education	6. Total value of agricultural produce	6. Movie exposure
7. Self-evaluation of crop yield	7. Trial of high-yielding seed variety	7. Newspaper exposure
8. Employment other than own farm	8. Consumption of fertilizers	8. District news channel
9. Number of days employed off farm	9. Change agent knowledge	9. Channel credibility
10. Tenure status	10. Planning change on farm	10. Extension agent contact

*Due to (1) missing values for more than 10% of respondents
 (2) very low correlation
 (3) redundant measure

Cont'd.

Table 3. (continued)

Variables discarded	Variables retained for R-type factor analysis I
11. Patriarchialism	11. Social Participation
12. Educational aspiration	12. Residential experience outside the village
13. Occupational aspiration	13. Urban pull
14. Deferred gratification	14. Village norm regarding housewife's education
15. Labor days on farm by wife and farm laborers	15. Self-reliance
16. Hired labor days on farm	16. Village norm for men's vasectomy adoption
17. Female labor percent	17. Fragmentation of land
18. Family categories	18. Income aspiration
19. Mass media index	19. Taxes paid
20. Farm efficiency II (rupees per day of labor input)	20. Operator (peasant) days on farm
21. Farm efficiency III (rupees per day of labor input standardized for village differences)	21. Total labor employed on farm
	22. Farm efficiency I
	23. Commercialization
	24. Agricultural (innovation) trial index
	25. Level of living index
	26. Achievement motivation
	27. Political knowledgeability

Table 3. (continued)

Variables retained for R-type factor analysis I
28. Credit-risk orientation
29. Secular orientation
30. Empathy
31. Interpersonal trust
32. Ritual caste status
33. Bullock power used
34. Health (innovation) trial index
35. Polymorphic opinion leadership

Step 5: Factor analysis results (of the R-type) based on the 35 variables were examined. An examination of the zero-order correlation matrix and rotated factor structures led to the decision that some of the variables could be dropped by screening them more rigorously. Accordingly, for the subsequent analysis, 26 variables were retained on the basis of the following reason:

Correlations should be such that at least five percent of the variance of the selected variable should be explained by the other variables in the set.

The figure of five percent of variance explained (which is more conservative than significance of r at five percent level) was arbitrarily stipulated. The effect of setting this criterion was to remove most of those variables either having lower communalities* (h^2) or lower and more complex factor loadings.* This enables in retaining those measures which have a large amount of common variance. It is recognized that this "puritan" approach in factor analysis precludes the influence of many conceptually important variables. A researcher has to resolve this dilemma setting his own guidelines.

Stage III

Step 6: The screening process mentioned in Step 5 reduced the number of variables to 26 for a second factor analysis of the R-type (Table 4).

Step 7: Again, scrutiny of the second factor analysis

* See Appendix for meaning.

Table 4. Variables used in Data Analysis at Stage III (R-type Factor Analysis II)

Additional variables discarded*	Variables retained for Factor Analysis II
1. Age 2. Urban pull 3. Village norm for house- wife's education 4. Village norm for men's vasectomy adoption 5. Operator (Peasant) days on farm 6. Farm efficiency 7. Achievement motivation 8. Credit-risk orientation 9. Inter-personal trust	1. Family size 2. Education 3. Extent of land cultivated 4. Number of crops sold 5. Total value of Agricultural produce 6. Trial of high yielding seed 7. Consumption of fertilizers 8. Change agent knowledge 9. Planning change on farm 10. Social participation 11. Residential experience outside village (cosmopoliteness) 12. Self-reliance 13. Fragmentation of land 14. Income aspiration 15. Taxes paid 16. Total labor employed on farm 17. Commercialization 18. Agricultural (innovation) trial index 19. Level of living 20. Political knowledgeability 21. Secular orientation 22. Empathy 23. Ritual caste status 24. Bullock power used 25. Health (innovations) trial index 26. Polymorphic opinion leader- ship

*Due to lower communalities or lower and more complex factor loadings.

results indicated some complex factor loadings. Eight more variables were dropped to remove the degree of complexity in the factor structure.

Stage IV

Step 8: At this stage, 18 variables were submitted to the third factor analysis of the R-type (Table 5).

Stage V

Step 9: At this stage, the factor structures based on 18 variables were studied. Of 18 variables, consumption of fertilizers item appeared both as an independent variable and as an item used in the construction of agricultural innovativeness. This double inclusion reduced the cleanliness of the factor. In order to increase the simplicity of factor structure, consumption of fertilizer as a variable was deleted and final factor of analysis based on 17 variables was obtained (Table 6).

Stage VI

Step 10: At this stage, factor scores for the three dimensions (of the 17 variable R-factor analysis) were obtained for the 559 respondents.

Step 11: Correlation analysis between the factor scores on the three dimensions and scores on the six communication variables was performed.

Stage VII

Step 12: At this stage, 94 peasant respondents (16.8 percent) from among the 559 were selected by systematic random sampling for a P-type* factor analysis. Seventeen

*See Appendix for description of P-type factor analysis.

Table 5. Variables used in Data Analysis at Stage IV (R-type Factor Analysis III).

Additional variables discarded*	Variables retained for Factor Analysis III
1. Number of crops sold	1. Family size
2. Trial of high yielding seed	2. Education
3. Planning change on farm	3. Extent of land cultivated
4. Self-reliance	4. Total value of agricultural produce
5. Income aspiration	5. Change agent knowledge
6. Level of living	6. Social participation
7. Secularism	7. Consumption of fertilizers
8. Empathy	8. Residential experience outside the village (cosmopoliteness)
	9. Fragmentation of land
	10. Taxes paid
	11. Total labor employed
	12. Commercialization
	13. Agricultural (innovation) trial index
	14. Political knowledgeability
	15. Ritual caste status
	16. Bullock power used
	17. Health (innovations) trial index
	18. Polymorphic opinion leadership

*Due to complex factor loading

Table 6. Variables used in Data Analysis Stage V (R-type Factor Analysis IV and P-type Factor Analysis).

Variable discarded*	Variables retained for the final R ² and P-type factor analyses
1. Consumption of fertilizers	1. Family size 2. Education 3. Extent of land cultivated 4. Total value of agricultural produce 5. Change agent knowledge 6. Social participation 7. Residential experience outside the village (cosmopoliteness) 8. Fragmentation of land 9. Taxes paid 10. Total labor employed 11. Commercialization 12. Agricultural (innovations) trial index 13. Political knowledgeability 14. Ritual caste status 15. Bullock power used 16. Health (innovations) trial index 17. Polymorphic opinion leadership

*Due to redundancy in measurement

variables, chosen for the final R-type factor analysis were used for the P-type factor analysis (Table 6).

Stage VIII

Step 13: Based on 17 variables (used in extracting the R-type and P-type factor structures), a typology of peasants was described by using WRAP program available at Michigan State University Computer Center. This program enables one to assign standardized scores of the variables for the subjects, loading on each type weighted by the subject's factor loading.

Stage IX

Step 14: Analysis of variance was done to determine significant differences in the communication behavior among the peasant types.

Figure 2 gives a picture of the various stages involved in the data analysis.

Operationalization of the Variables

Outlined in this section are the operational procedures used to measure 23 variables finally retained from Stage V onwards for the present analysis.

1. Family size refers to the number of members related to the head by kinship ties, sharing food from a common kitchen, and shelter.

Fig. 2.--Flow chart of the Data-analysis Methods used in the Present Study.

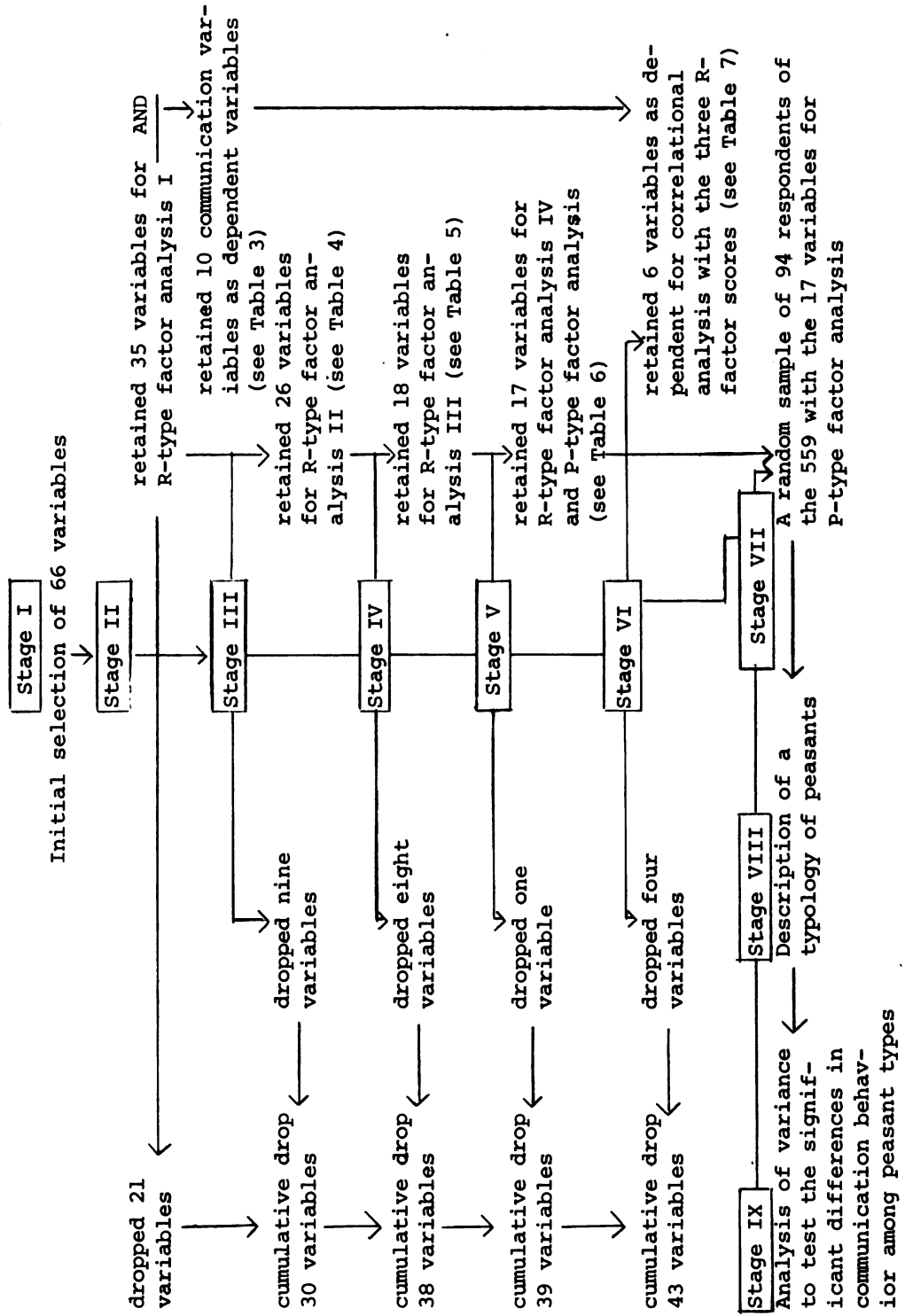


Table 7. Variables used in Correlational Analysis between Factor Dimensions and Communication Characteristics (Stage VI).

Factor Dimensions	Communication Characteristics
1. Orientation to Change	1. Urban contact
2. Farm resources	2. Radio exposure
3. Social activity	3. Radio exposure of family members
	4. Movie exposure
	5. Newspaper exposure
	6. Extension Agent contact

2. Education refers to the degree of a person's ability to read and write a letter with formal schooling. The variable was measured by asking actual school years completed and noting the actual grade, matriculate, first year college, B. A., M. A., etc.

3. Acres cultivated refers to the total extent of land cultivated by the respondent during the agricultural year of July to June, 1966. The total acreage cultivated includes all the land irrespective of tenancy relations and ownership rights, as declared by the respondent.

4. Total value of agricultural produce raised refers to the monetary value (at the appropriate market price) of the quantity of agricultural products.

5. Change agent knowledge is the degree of awareness of the extension workers. Operationally, an index of change agent knowledge was constructed by summing the scores on the responses to the following question.

"Do you know the names of any agricultural development workers who come to this village, or who are assigned to work here?" "How about health and family planning workers?"

The responses were coded as follows:

- 0 - No names or positions known
- 1 - One position (no name) or one name (no position) known
- 2 - One name (with position) known or two positions (without name) known
- 3 - One name (with position) known and one position (without name) known
- 4 - Two names (each with position) known

6. Social participation refers to the degree of behavior orientation of a person interacting with other persons in a group. Operationally, social participation was measured in terms of the degree of membership or offices held by a person in formal organizations like co-operatives, youth organizations, local political decision making bodies like Panchayat (village council), religious and cultural organizations. The variable was measured by summing the scores assigned for membership.

7. Cosmopoliteness refers to the degree to which an individual is oriented outside of his system. Operationally this was measured by scoring the response to the question "Have you ever lived away from this village for more than one year?"

0 - No; 2 - Yes

8. Fragmentation index is an indicant of the extent of scattering of cultivating plots of land in non-contiguous places. The index was constructed based on the number of non-contiguous places at which land was cultivated.

9. Taxes paid refers to the value of local taxes like housing and property tax (excluding land tax) annually paid by the respondent.

10. Productive man work units are the estimated number of man days (hired as well as family) used in farm operations through the year. This was estimated by noting the number of man days spent in the production of crops.

11. Commercialization is the degree to which an individual is oriented to the market forces for his output disposal. Commercialization measure was obtained by dividing the value of total agricultural products sold by the value of total products raised.

12. Agricultural innovativeness is the degree to which an individual is relatively earlier in adopting new agricultural ideas than other members of his social system. Operationally, agricultural innovativeness was measured by asking the following question about each innovation and

summing the scores across items as follows:

"Have you ever used ...	<u>No</u>	<u>Yes</u>
(1) Ammonium sulphate?	0	2
(2) Superphosphate?	0	2
(3) Mixtures?	0	2
(4) Insecticides for plant protection?	0	2
(5) Green manure?	0	2
(6) Cultivator or weeder?	0	2
(7) Improved breeding of cattle?	0	2
(8) Animal inoculation?	0	2
(9) Rat poison?	0	2
(10) High yielding varieties (Rice-Taichung Native I IR 888; Jowar; Bajra; Maize)	0	2

The summed score could range from 0 through 20.

13. Political knowledgeability refers to the awareness of the individual about persons who are chief policy-makers in government. Operationally, the degree of political knowledgeability was measured by asking the following questions and summing the scores across three items.

"I would like to ask you now about a few people. I just want to know to what extent you are familiar with their names and who they are."

	<u>Incorrect</u>	<u>Correct</u>
Who is the Prime Minister of India?	0	1
Who is the Chief Minister of your State?	0	1
Who is the Member of the Legislative Assembly?	0	1

14. Ritual caste status refers to the ranking of the respondent relative to other persons in the village according to the acceptability of drinking water and eating cooked food with them. If a person of caste A can accept cooked food and water from a person of caste B, but not vice versa, then caste B is ritually higher in rank than caste A. Operationally, ritual caste status was measured by rankings of individuals by key informants. A series of pictures of individuals were presented to the key informants, who were to arrange the pictures in the descending order according to who accepts cooked food from whom and/or drinks water. Each picture had cues to the ritual caste status of the person depicted in terms of his work surroundings, dress style, and sitting posture. Based on these rankings, four broad categories of ritual caste status were specified for the six villages. Thus, the ascending order of caste status was ranked from one (low) to four (high). Each respondent was then placed in his caste, and assigned the corresponding number of his caste.

15. Bullock power is the total number of bullocks or draught animals owned by the peasant.

16. Health innovativeness is the degree to which an individual is relatively earlier in adopting new health ideas than other members of his social system. Operationally, it was measured by asking the following question with reference to six health items. A unit-weighted index of trial was computed for each respondent to indicate his degree of

innovativeness. The format of the question and the scoring procedure were as follows:

"Have you or has any member of your family ever tried:

	<u>No</u>	<u>Yes</u>
1. Small pox prevention?	0	2
2. Cholera prevention?	0	2
3. Bed-bug prevention?	0	2
4. Making drinking water safe?	0	2
5. Malaria prevention (spray, net, pills)?	0	2
6. Modern child birth practices (pre- and post-natal care, trained <u>dai</u> , clinic, hospitals, etc.)?	0	2

17. Opinion leadership is the ability of an individual to influence the decision-making process of another person. Operationally, opinion leadership was measured in terms of the number of topics on which a given person was sought for advice. If a person were sought for advice, say, on health and agricultural matters, his opinion leadership score was two, whereas if his advice were sought on three matters, then his score was three.

18. Urban contact is the degree to which a person is exposed to the city environment. Operationally, this variable was measured by the frequency of visits made to towns and cities during the previous year by the respondent. The number of visits were determined in response to the following question:

"How many times have you visited the following places last year?"

Town (less than 1,000,000)

City (100,000 and more)

19. Individual radio exposure is the degree of communication contact of an individual to radio. This variable was operationalized by asking the following question, and scoring the response as follows:

"Do you listen to the radio?"

0 - No; 1 - Don't know; 2 - Yes

20. Family radio exposure is the degree of communication contact of family members to radio. This dimension was operationalized by asking the respondent :

"Does your family listen to the radio?"

0 - No; 1 - Don't know; 2 - Yes

21. Individual movie exposure is the frequency with which a person visits the movies. The following question was asked:

"Did you see any cinema films during 1966? (Reference is to commercial films, not those shown by the Block) How many?"

22. Individual newspaper exposure is the degree to which a person reads a newspaper. The following question was asked:

"Did you read (had read to) any newspapers in the past week?"

The responses were coded as follows:

0 - No paper read to him

1 - Cannot read but had papers read to him

2 - Can read and read one or more papers

23. Change agent contact is the degree of interpersonal communication of a client with a change agent. It was operationalized by noting the frequency with which a peasant talked with functionaries of extension agencies, saw block films, and agricultural demonstrations. Operationally, an index was constructed by summing the scores on the responses to the following question:

"Last year (1966) did you:

Number of times talked/seen

Talk with block development officer?

Talk with village level worker?

See an agricultural demonstration?

See a block film on agriculture?

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CHAPTER IV

FINDINGS OF FACTOR ANALYSIS

Results of R-Type Factor Analysis

The principal axis solution using varimax rotations with a Kiel-Wrigley criterion of three (at least three variables loading highest on all factors) for terminating factor rotations, yielded five rotated solutions. Table 8 gives the percent of total variance explained by each of the five rotated solutions.

Among the five rotated factor solutions, the second one containing three factors was selected. This solution met the Kiel-Wrigley criterion of at least three variables loading highest on the factor.

For selecting the three-factor solution, the main considerations were:

- (1) The conceptual meaningfulness of the factors implied by the variables loaded on each factor.
- (2) The percentage of variance explained by each factor.

As seen in Table 8, the total variance explained by all the three factors jointly in the second rotation is 51 percent of the variance present among the 17 variables. The factor structures and their meanings are discussed in the following sections.

Table 8. Percent of total variance explained by each of the three rotated solutions meeting a Kiel-Wrigley criterion of three variables for terminating the factor rotation.

Rotated solution	Percent of total variance explained
First Rotation	
Factor I	23%
Factor II	20%
Total	43%
Second Rotation	
Factor I (Change Orientation)	19%
Factor II (Farm Resources)	18%
Factor III (Social Activity)	<u>14%</u>
Total	51%
Third Rotation	
Factor I	18%
Factor II	18%
Factor III	11%
Factor IV	<u>10%</u>
Total	57%

Factor I taps the dimension of change orientation of peasants, Factor II indicates the degree of farm resources managed by peasants, and Factor III indexes the nature of social activity of peasants.

Dimension I: Change Orientation

The first dimension is named "Change Orientation" because it contains items which pertain to innovative behavior, education, political and change agent knowledgeability of the peasant, and degree of experience gained by living outside his village.

All these variables are positively loaded on the change orientation factor (Table 9). Innovativeness as reflected in the trial of new agricultural and health practices has top loadings of .73 and .70. Next in importance are the factor loadings of knowledgeability and education ranging from .61 to .66. Cosmopolitaness has a relatively low loading of .48. Both knowledge and behavioral variables loading on the dimension of orientation to change indicate modernization in peasant behavior.

Dimension II: Farm Resources

The second dimension is named "Farm Resources" because variables indicating the basic factors of farm production and the monetary value of the agricultural output are chiefly loaded on it (Table 10). All the economic variables are "pure" in their loading on this factor. The loadings range from .65 to .80. The demographic variable of family size shows a

Table 9. Variables loading highest on Factor I* (Change Orientation).

Variable	Factor loading	Highest other factor loading	Highest other factor	h^{2**}
1. Agricultural innovativeness	<u>.734</u>	.276	I Farm Resources	.632
2. Health innovativeness	<u>.698</u>	.075	III Social Activity	.497
3. Education	<u>.661</u>	.302	III Social Activity	.563
4. Political knowledgeability	<u>.654</u>	.396	III Social Activity	.586
5. Change agent knowledgeability	<u>.606</u>	.507	III Social Activity	.624
6. Cosmopoliteness	<u>.476</u>	.149	II Farm Resources	.262

*Amount of variance explained by Factor I is 19%.

**Communalilty

Table 10. Variables loading highest on Factor II* (Farm Resources).

Variables	Factor loading	Highest other factor loading	Highest other factor	h^{2**}
1. Labor size on farm	<u>.803</u>	.388	I (Change Orientation)	.796
2. Value of agricultural produce	<u>.790</u>	.354	I (Change Orientation)	.752
3. Farm size	<u>.744</u>	.401	III (Social Activity)	.742
4. Bullock power	<u>.704</u>	.285	III (Social Activity)	.580
5. Taxes paid	<u>.653</u>	.317	I (Change Orientation)	.531
6. Family size	<u>.340</u>	.056	I (Change Orientation)	.119

*Amount of variance explained by Factor II is 18%.

**Communality

relatively low loading. The dominant feature of the Farm Resources factor is indicated by the amount of land and labor resources, and the quantum of agricultural production that characterize the economic power of the peasant.

Dimension III: Social Activity

The third dimension is named "Social Activity" because it contains mainly variables which pertain to the market orientation of the peasant as measured by the proportion of total agricultural production sold in the market, membership and participation in formal organizations like the village Panchayat, cooperative institutions, religious, and other social service organizations. The dimension of Social Activity has a negative association with the fragmentation of cultivation holdings. This factor also indexes the ability of the peasant to influence the decision-making process of the other peasants who need information and advice. It reflects the social interaction experience and management skill of the peasant. This dimension well reflects problems of human relations and the many intricate skills involved in marketing and the social decision-making processes, and formation of opinions and attitudes. Ability to mobilize physical and social resources for efficient functioning of the peasant society are some of the traits tapped in this dimension. The factor loadings range from .34 (opinion leadership) to .73 (commercialization). Table 11 shows these details.

Table 11. Items loading highest on Factor III* (Social Activity).

Item	Factor loading	Highest other factor loading	Highest other factor	h^2
1. Commercialization	<u>.733</u>	.159	II (Farm Resources)	.563
2. Fragmented Farms	<u>-.617</u>	-.098	I (Change Orientation)	.393
3. Social Participation	<u>.537</u>	.168	I (Change Orientation)	.332
4. Ritual caste status	<u>.483</u>	.430	I (Change Orientation)	.419
5. Opinion leadership	<u>.338</u>	.295	I (Change Orientation)	.256

*Amount of variance explained by Factor III is 14%.

Communication Patterns

One of the important goals in the R-type factor analysis is to be able to assess individuals more meaningfully and economically in terms of the factors which subsume a number of variables. Assuming that the interpreted factors are variables, an attempt is made to measure them. As Guilford (1954, p. 524) says: "A limited list of factor scores would then do the work several times as many tests and do it with greater invariance of meaning."

In what follows we shall use the factor loadings obtained from the orthogonal rotation of axes, to arrive at factor scores. Factor loadings of 17 variables on the three factors (Table 12), and the standardized scores of 17 variables, are used in obtaining factor scores for each of the 559 peasant respondents on each of the three factors: Change orientation factor score, farm resources factor score, and social activity factor score.

Considering the three factor scores as measures of three independent variables, i.e., change orientation, farm resources, and social activity, a correlational analysis was made between these variables and six communication variables. The obtained correlations describe the pattern of communication behavior of 559 peasants as associated with their degree of change orientation, farm resources, and extent of social activity.

Table 12. Factor loadings for the three-factor solution

Variable	Factor I Change Orientation	Factor II Farm Resources	Factor III Social Activity
1. Agricultural innovativeness	<u>.734</u>	.276	-.131
2. Health innovativeness	<u>.698</u>	.066	.075
3. Education	<u>.661</u>	.188	.302
4. Political knowledgeability	<u>.654</u>	-.024	.396
5. Change agent knowledgeability	<u>.606</u>	.023	.507
6. Cosmopoliteness	<u>.476</u>	.150	.116
7. Labor size on farm	.388	<u>.803</u>	.007
8. Value of agricultural produce	.354	<u>.790</u>	.043
9. Farm size	.163	.744	.401
10. Bullock power	-.052	<u>.704</u>	.285
11. Taxes paid	.317	<u>.653</u>	.066
12. Family size	-.056	<u>.340</u>	.016
13. Commercialization	-.001	.159	<u>.733</u>
14. Fragmentation of farms	-.098	-.047	<u>-.617</u>
15. Social Participation	.168	.127	<u>.537</u>
16. Ritual caste status	.430	.027	<u>.483</u>
17. Opinion leadership	.295	.233	<u>.338</u>

Table 13 shows the zero-order correlation between each of the three dimensions of the peasant characteristics, and communication behavior as indexed by exposure to radio, newspaper, urban environment, movies, and extension agencies.

The Change orientation dimension has a fairly high positive zero-order correlation with peasant's newspaper exposure (.455), frequency of contact with change agents (.511), urban contact (.354), movie exposure (.282), and radio exposure (.238). Change orientation is also highly correlated with radio exposure of family members (.361).

The Farm resources dimension shows comparatively lower correlations with extension agent contact (.255), newspaper exposure (.236), urban contact (.190), and movie exposure (.171). While the correlation with family member's radio exposure is .246, the peasant's radio exposure is not significantly correlated with the Farm resources dimension (.069).

The Social activity dimension shows about the same correlation pattern, but in lower degree than Change orientation and Farm resources dimension. Social activity is positively correlated with urban contact (.222), newspaper exposure (.220), extension agent contact (.206), radio exposure (.119), movie exposure (.028), and family members' exposure to radio (.002). The later two correlations are not statistically significant.

These correlations suggest that Change orientation behavior of peasants has a strategic association with their

TABLE 13.--Zero-order correlations between three dimensions of peasant characteristics and communication behavior.

Characteristics	Extension agent contact	Newspaper exposure	Family members' radio exposure	Urban content	Movie exposure	Radio exposure
1. Change orientation	.511*	.455*	.361*	.354*	.282*	.238*
2. Farm resources	.255*	.236*	.246*	.190*	.171*	.069
3. Social activity	.206*	.220*	.002	.222*	.028	.119

*Significantly different from zero at the 5 percent level.

exposure to agricultural and health extension workers, mass media, and contact with urban environment.

CHAPTER V

FINDINGS OF FACTOR ANALYSIS

Peasant Typology

In the previous Chapter, an attempt was made to describe the subculture of peasantry in terms of three dimensions, namely, Change orientation, Farm resources, and Social activity. The three dimensions were extracted from seventeen variables measuring demographic, economic, and sociological characteristics of the peasants. Correlations between the three factors and the peasants' exposure to mass media, extension agencies and urban environment, were presented.

In this Chapter, an attempt is made to construct a typology of peasants based on the same 17 variables (used previously for the R-factor analysis), and to describe the communication behavior of the peasant types.

Method of Analysis

A systematic random sample of 94 was drawn from the 559 respondents (who were the subjects for the R factor analysis in the previous Chapter) to construct types of peasants. A factor analysis of the respondents in terms of the 17 characteristics was performed using FACT AN program available at the Michigan State University Computer Center. The value

for each of the 94 subjects on each of the 17 characteristics was correlated with that of every other subject. This matrix of intercorrelations was submitted to P-type factor analysis, so that the persons are "variables" and the 17 characteristics are observations. Because persons are treated as variables, the name usually given to this analysis is P-type (P for people) factor analysis. A principal axis solution was obtained. This solution was submitted to a varimax rotation which produces orthogonal factors. On this basis, a factor represents a grouping of persons around a common syndrome of the characteristics included in the analysis. Hence, a factor represents a type of person.

As used here, the principal axis solution was submitted to varimax rotation. The criterion for rotating the factors was arbitrarily fixed at five because it was thought not very useful to go any further.

Table 14 gives the number of hypothetical types of persons and the percent of variance explained by each rotated factor solution.

For purpose of describing the typology of peasants, the three-factor solution and six-factor solution were selected on considerations of simplicity and the percentage of variance explained. The three-factor solution satisfied the simplicity criterion (i.e., proportion of people with "pure" loading on each factor was higher when compared to other solutions) and the six-factor solution satisfied the notion of fairly high

Table 14. Percent of total variance explained by each of the five rotated P-factor solution

Rotated solutions	Type	Percent of total variance explained
First rotation:		
	People-Factor I	16
	People-Factor II	<u>15</u>
	Total	<u>31</u>
Second rotation:		
	People-Factor I	17
	People-Factor II	12
	People-Factor III	<u>12</u>
	Total	<u>41</u>
Third rotation:		
	People-Factor I	16
	People-Factor II	14
	People-Factor III	11
	People-Factor IV	<u>10</u>
	Total	<u>51</u>
Fourth rotation:		
	People-Factor I	15
	People-Factor II	13
	People-Factor III	10
	People-Factor IV	10
	People-Factor V	<u>11</u>
	Total	<u>59</u>
Fifth rotation:		
	People-Factor I	16
	People-Factor II	10
	People-Factor III	10
	People-Factor IV	9
	People-Factor V	9
	People-Factor VI	<u>12</u>
	Total	<u>66</u>

percentage (66 percent) of variance explained. The following description is confined to the three-factor solution.

Description of Peasant Types

As used here, the factor analysis model constructs hypothetical types of persons based on the way peasants were measured on 17 characteristics mentioned earlier. The coefficients or loadings in the rotated factor solution can be looked at as each peasant's correlation with each of the hypothetical types. To group the peasants, we can assign them to the type that they are most like on the basis of factor loadings.

In deciding on the peasants that define the three types, the following considerations were arbitrarily set.

(1) The square of the factor loading of a given subject should approach the communality (h^2) of that subject.

(2) The subject should be included to define that factor (type) on which the loading is higher than .40, but less than .40 on other factors.

(3) Even if the communality is as low as .10, a subject is assigned to the factor (type) if its highest loading on that factor contributes almost all of that communality.

Accordingly, the subjects were assigned to the respective types if they met at least one of the foregoing criteria. Those that did not meet the set criteria were considered as Mixed types. Tables 15 through 19 give the factor loadings of the types of peasants.

Table 15. Highest loadings on factor (Type) I in three-factor solution.

Subject identi- fication	Factor loadings on Type I*	Highest other loading	Highest other types	h^2 (Communality)
3	-.599	-.067	II	36
6	-.368	-.099	III	15
7	-.327	-.086	III	11
14	-.656	-.362	III	60
15	-.712	-.116	III	53
16	-.488	-.166	II	28
18	-.339	.117	III	13
19	-.354	-.172	III	16
20	-.846	-.163	III	74
22	.303	.073	II	10
23	-.813	-.105	III	68
31	-.828	-.201	III	76
32	.704	-.317	III	60
33	.378	.109	III	15
37	-.427	.201	III	23
38	-.306	-.114	II	11
42	.930	.176	II	90
44	-.632	.308	II	50
54	.831	-.364	II	82
56	.867	-.220	III	80

Continued

Table 15 (cont'd.). Highest loadings on factor (Type) I in three-factor solution.

Subject identi- fication	Factor loadings on Type I*	Highest other loading	Highest other Types	h^2 (Communality)
63	-.341	.123	III	14
69	-.663	.226	II	53
66	.770	.290	II	68
82	.633	-.378	II	57
87	.721	-.334	II	72

*Total number of subjects in Type I is 25, and the percentage of variance explained by Type I is 17.

Table 16. Highest loadings on factor (Type) II in three-factor solution.

Subject identi- fication	Factor loadings on Type II*	Highest other loading	Highest other Types	h^2 (Communality)
8	.494	-.271	III	38
9	-.500	-.031	III	25
10	-.602	-.138	I	38
11	-.650	-.134	III	58
27	-.794	-.091	III	64
30	-.614	.310	I	49
34	-.647	.146	I	45
41	.710	-.148	III	53
43	.840	.292	I	79
49	.649	.444	III	63
52	.490	-.098	I	25
53	.616	.203	III	43
57	.523	.099	I	28
58	.650	-.215	I	47
59	.570	-.244	I	42
68	.686	.094	III	49
72	.390	-.191	I	20
73	.737	.351	I	74
88	-.589	.340	I	55
89	-.296	-.107	III	10
90	.409	.100	I	18
93	-.327	.115	III	13
94	-.464	.217	I	26

*Total number of subjects in Type II is 23, and the percentage of variance explained by Type II is 12.

Table 17. Highest loadings on factor (Type) III in three-factor solution.

Subject identi- fication	Factor loadings on Type III*	Highest other loading	Highest other Types	h^2 (Communality)
2	.531	.320	II	43
21	-.320	.167	II	13
29	-.562	.085	II	33
36	.294	-.130	I	11
39	.650	-.068	II	43
40	.535	.158	II	33
45	.514	-.333	I	40
46	.607	.215	II	42
47	-.419	.140	II	21
48	.753	.274	I	64
50	.721	-.105	I	53
51	.623	-.343	II	51
61	.638	.373	II	56
62	.374	-.237	I	23
64	.514	.379	II	42
75	.682	-.241	II	57
76	.562	-.213	II	39
81	.524	-.168	II	30
86	-.561	.371	I	50

*Total number of subjects in type III is 19, and the percentage of total variance explained by type III is 12.

Table 18. Mixed types

Subject identi- fication	Loadings on			h^2 (Communality)
	Type I	Type II	Type III	
1	-.087	-.017	.154	03
4	.374	-.456	.231	40
5	-.124	-.019	-.287	09
12	-.201	-.502	-.429	48
13	-.414	-.314	-.466	49
17	-.118	.496	-.383	41
24	.051	.149	.173	05
25	-.147	.036	-.194	06
26	-.440	-.435	-.218	43
28	-.359	-.302	-.342	36
35	-.291	.160	.177	14
55	-.401	.128	.362	31
60	.283	.402	.495	48
65	-.303	.431	-.267	35
67	-.426	.335	.243	35
70	-.458	.534	-.468	71
71	.655	.188	-.489	70
74	-.300	-.452	.668	74
77	.674	-.068	.521	73
78	-.375	-.440	-.215	38

Continued

Table 18. (Continued) Mixed Types.

Subject	Loadings on			h^2 (Communality)
	Type I	Type II	Type III	
79	.429	-.207	-.458	44
80	.413	-.281	.479	48
83	.044	.384	-.485	38
84	.368	-.264	-.376	35
85	.560	-.350	-.531	76
91	.491	-.573	-.182	60
92	.692	-.460	-.011	69

Table 19. Number of subjects loading by types.

All subjects	Number of subjects			
	Type I	Type II	Type III	Mixed Type
94	25	23	19	27

The three types of peasants are described in terms of the following 17 characteristics:

1. Family size
2. Education
3. Acreage of land cultivated
4. Monetary value of gross agricultural produce
5. Change agent knowledgeability
6. Social participation
7. Cosmopolitaness
8. Fragmentation of land index
9. Taxes (housing and other local taxes) paid
10. Total labor employed on farm
11. Commercialization of output
12. Agricultural innovativeness
13. Political knowledgeability
14. Ritual caste status
15. Bullock power employed and owned
16. Health innovativeness
17. Opinion leadership

WRAP program was run to describe the characteristics of the persons defining each type. This program computed weighted scores for each of the 17 variables for each subject associated with a given factor. Thus, the higher the factor loading of a subject, the greater was the weight. These weighted values were summed across each variable separately. The arrays of weighted values were converted to Z-scores. Table 20 gives the

Table 20. A description of three types of peasants by the weighted standard scores.

Variable	Type I	Type II	Type III
1. Family size	0.29 (H1)	-0.24 (Medium)	-0.31 (Lo)
2. Education	0.40 (H1)	-0.21 (Medium)	-0.34 (Lo)
3. Acres cultivated	0.26 (H1)	-0.19 (Medium)	-0.30 (Lo)
4. Value of agricultural produce	-3.16 (Lo)	3.93 (H1)	3.90 (Med)
5. Change agent knowledge	0.41 (H1)	-0.21 (Medium)	-0.32 (Lo)
6. Social participation	0.40 (H1)	-0.21 (Medium)	-0.33 (Lo)
7. Cosmopoliteness	0.40 (H1)	-0.21 (Medium)	-0.34 (Lo)
8. Fragmentation index	0.40 (H1)	-0.22 (Medium)	-0.34 (Lo)
9. Taxes paid	0.38 (H1)	-0.13 (Medium)	0.04 (Lo)
10. Total labor on farm	-2.23 (Lo)	-0.97 (Medium)	0.56 (H1)
11. Commercialization of output	0.15 (H1)	-0.02 (Medium)	-0.20 (Lo)
12. Agricultural innovativeness	0.40 (H1)	-0.24 (Medium)	-0.34 (Lo)
13. Political knowledgeability	0.40 (H1)	-0.21 (Medium)	-0.33 (Lo)
14. Ritual caste status	0.38 (H1)	-0.20 (Medium)	-0.34 (Lo)
15. Bullock-power	0.36 (H1)	-0.21 (Medium)	-0.33 (Lo)
16. Health innovativeness	0.39 (H1)	-0.23 (Medium)	-0.33 (Lo)
17. Opinion leadership	0.40 (H1)	-0.22 (Medium)	-0.34 (Lo)

arrays of Z-scores for the three types in terms of 17 variables.

Type I: Modern

Type I peasants have larger-sized families. They belong to a ritually higher caste and have more education. They show a high degree of change agent knowledge and political who is who. They are more cosmopolite, possess a high degree of social participation in formal organization and a high degree of agricultural and health innovativeness. They cultivate a large extent of land scattered in a large number of bits, employ a large number of bullocks, pay a large amount of taxes and show a high degree of commercialization of produce. In terms of total value of agricultural produce raised and total quantity of labor employed on farm, they score comparatively low.

Type II: Transitional

Type II peasants have medium-sized families. They belong to a ritually medium caste and are less well educated. They show a medium degree of change agent knowledge and political knowledge. Their degree of social participation, cosmopoliteness and opinion leadership is medium. They manifest a medium degree of agricultural and health innovativeness. They cultivate a medium acreage of land fragmented to a medium extent, employing a medium amount of bullock- and man-power. They raise a high quantum of value of agricultural output.

They have a relatively medium degree of commercialization.
They pay medium amount of taxes.

Type III: Traditional

Type III peasants have small-sized families. They belong to a ritually low caste and have low level of education. Their degree of change agent and political knowledgeability is low. Their degree of participation in formal organizations is low. They possess a low degree of cosmopolitaness and opinion leadership. They cultivate small extent of land with small amount of bullock-power. Their lands are not very much fragmented. They pay small amount of taxes. The degree of their agricultural and health innovativeness is low but their total value of agricultural produce and quantity of labor used on their farms are high.

If we look at the variables in terms of the dimensions arrived at by R-factor analysis, the three types of peasants show the characteristics presented in Table 21. It is clearly seen that Type I peasants show a high degree of orientation to change. Type III seems not to be oriented to the modernization process or, they may be on the fringe of the modernization process. On the farm resources dimension, Type I peasants show a small amount of employment of labor on their farm and a low value of agricultural produce. In terms of other economic and non-economic characteristics, Type I peasants are relatively higher than the rest. On the social activity dimension also, Type I peasants score high, Type II come next,

TABLE 21.--Dimensions of peasant characteristics and weighted standardized scores of peasant typology.

Dimension	Peasant Characteristics	Weighted standardized P-factor scores		
		Type I	Type II	Type III
I. ORIENTATION TO CHANGE	1. Agricultural innovativeness	0.40	-0.24	-0.34
	2. Health innovativeness	0.39	-0.24	-0.33
	3. Education	0.40	-0.21	-0.34
	4. Political knowledgeability	0.40	-0.21	-0.33
	5. Change agent knowledgeability	0.41	-0.22	-0.33
	6. Cosmopoliteness	0.40	-0.21	-0.34
II. FARM RESOURCES	7. Total labor employed on farm		-0.97	0.56
	8. Total value of agricultural produce	-2.23		
	9. Acreage cultivated	-3.16	3.93	3.90
	10. Bullock power	0.26	-0.19	-0.30
	11. Taxes paid	0.36	-0.21	-0.33
	12. Family size	0.38	-0.13	0.04
III. SOCIAL ACTIVITY		0.29	-0.24	-0.31
	13. Commercialization	0.15	-0.02	-0.20
	14. Fragmentation index	0.40	-0.22	-0.34
	15. Social participation	0.40	-0.21	-0.33
	16. Ritual caste status	0.38	-0.20	-0.34
	17. Opinion leadership	0.40	-0.22	-0.34

and Type III score very low.

Type I peasants, although innovative and knowledgeable, are low in agricultural production and the quantity of labor employed on the farm. These peasants who seem to be more modern in terms of their behavioral and knowledge characteristics, may possibly combine other subsidiary economic activities like trade or other professions, with agriculture. Also, these peasants may lease part of their land to others. These are some of the possible explanations for the lower value of agricultural product associated with Type I. Also there may be some degree of under-estimation of the farm produce among bigger peasants.

Type II peasants are midway between the set of peasants who are more modern, and those peasants who are low on the change orientation dimension. These peasants may be transitionals. Economically, they show a gross value of agricultural production higher than Type I and slightly higher than Type III. On almost all other measures, Type II are midway between Type I and Type III.

Type III peasants are low on the dimension of change orientation and social activity. In terms of the indices of farm resources, they rate slightly lower than Type I, and Type II with the exception of total amount of labor employed.

Thus, the foregoing typological description shows three types of peasants: A type of peasant who is relatively low in terms of the value of agricultural produce but big in

terms of the extent of land cultivated, and degree of modernization, a type of peasant who is medium in the extent of land cultivated, high in terms of gross value of agricultural product, but medium on the path of modernization, and lastly, a type who is poor and traditional in change orientation but tends to be productive.

Peasant Types and Communication Posture

Given the foregoing three peasant types, could we find any degree of similarity or difference in communication behavior among them? How do those peasants who have a mixed type of factor loading on all the three types compare with each of the other types? An attempt was made to compute the mean scores for each peasant type on three communication variables, namely, extension agent contact, urban contact, and mass media index.*

Table 22 presents the results of analysis of variance performed to test the significant differences among the means for three different measures of communication behavior of four categories (three types and a mixed type) of peasants. It is seen from the Table, there are significant differences among the four categories of peasant types in the degree of

*The mass media index was constructed by summing scores on individual radio exposure, family radio exposure, newspaper exposure, and movie exposure. While the former three were scored dichotomously, the last was a score measuring the frequency of visits to movies.

TABLE 22.--Mean scores of peasant types on selected communication variables.

Variable	F Ratio	Peasant Type Mean Scores		
		Type I (Modern) (n = 25)	Type II (Transitional) (n = 23)	Type III (Traditional) (n = 19)
1. Extension agent contact	3.18*	5.4 (high)	2.3 (low)	5.0 (high)
				2.8 (low)
2. Urban contact	2.90*	37.6 (high)	17.9 (low)	34.8 (high)
				19.9 (medium)
3. Mass media exposure	1.77	4.7 (high)	3.3 (low)	4.0 (high)
				3.4 (low)

*Mean differences are significant at the 5 percent level; the critical value of F is 2.68, when the degrees of freedom are 3 and 93.

extension agent contact and urban contact. No such significant difference is seen in the degree of mass media exposure. It seems that the degree of communication contact with the extension agency and the urban environment is similar among the modern and traditional types of peasants. The transitional type seems to differ from both the traditional and modern types. The mixed type are more like transitionals in their degree of extension agency contact, and tend to lean toward traditionals in their degree of urban contact.

CHAPTER VI

SUMMARY, CONCLUSIONS, AND IMPLICATIONS FOR FUTURE RESEARCH

The objectives of the present study were (1) to describe the subculture of peasantry in terms of a parsimonious set of factors, (2) to construct a typology of peasants by factor analyzing their demographic, sociological, and economic characteristics, (3) to correlate different dimensions of the peasant subculture with selected measures of communication behavior, and (4) to examine whether there were any significant differences in the communication behavior among peasant types.

The present study was based on the India Phase II Diffusion Project data collected during 1967. Personal interviews using structured questions were conducted with 559 peasants, purposively selected from six Indian villages in the states of Andhra Pradesh, Maharashtra, and West Bengal.

The data analysis started with an initial set of 66 variables that gave a fairly wide description of the behavioral, attitudinal, and knowledge characteristics of the peasants. The major method of analysis employed in this study was factor analysis. When it became clear that measurement procedures of some variables could not satisfy the assumption

of at least ordinal level of measurement, many of the variables were discarded. Other considerations, such as insignificant intercorrelations and missing data, reduced the number of variables to 23. Many of the social psychological variables, described (Chapter II) as central to the notion of subculture of peasantry, could not be retained. Of the 23 variables finally retained, six variables were classified as communication variables and kept separated from the factor analysis.

From the remaining 17 variables three factors were extracted by submitting their intercorrelation matrix to R-type factor analysis, using Kiel-Wrigley criterion. The three factors were conceptually meaningful and explained 41 percent of the variance. They were named: (1) Change Orientation, (2) Farm Resources, and (3) Social Activity.

A correlation analysis of the foregoing three dimensions with six communication variables indicated significant correlations of the Change Orientation dimension with extension agency contact and mass media exposure. The Farm Resource dimension came next in the magnitude of positive correlations with the same communication variables. Social activity had the lowest correlations with extension agency contact and newspaper exposure.

A random sample of 94 respondents out of the 559 peasants was selected for P-type factor analysis, where correlation matrices between people as variables and 17 characteristics (used previously in the R-type factor analysis) as observations,

were factor analyzed to construct a peasant typology. Based on a three-factor solution explaining 51 percent of the variance, a three-fold typology was constructed. The three types were named: Modern, Transitional, and Traditional. There were also peasants who shared common variance across all the three types. This category was named the Mixed type.

An examination of the mean scores on extension agency contact, urban contact, and mass media exposure among the three peasant types and a Mixed type indicated significant differences in the communication behavior among the four categories of peasants. The degree of contact with the extension agency and urban environment was high and similar for both the Modern and Traditional types of peasants, while the Transitional types showed a low degree of exposure to the extension agency and urban environment. Perhaps one of the factors explaining this peasant communication pattern is the deliberate efforts of the extension agency. Due to the drive and initiative on the part of the extension personnel, contacts were possibly established with those sections of the traditional peasants who, if left to themselves, would have had less or no contact with the extension agency.

The present study leads to the following conclusions:

1. The development program in India seems to be affecting the peasantry because of the high exposure of the peasants to the development extension agency. The dominant dimension of modernization process is indicated by the peasants' higher degree of knowledge of the developmental administrative

system and contact with the change agents. It is also indexed by an increased propensity on the part of the peasants to adopt new farming and health practices.

2. There are strong economic factors mediating the process of modernization. In terms of the extent of land cultivated, peasant types with larger cultivated land holdings show a greater degree of modernization.

3. Peasant change orientation is positively associated with a higher degree of external communication contact.

4. There are four categories of peasants with three distinct behavioral traits clustering around:

"Modern" type who show a high degree of change orientation and a high degree of social activity, a larger extent of land cultivated but a lower degree of gross value of agricultural produce, low quantity of labor days on the farm, and a high degree of communication contact with the external system;

"Transitional" type who manifest a medium degree of change orientation, social participation, farm resources, and communication contact with the external system;

"Traditional" type who exhibit low scores on the dimensions of change orientation and social activity. On the farm resources dimension they are low as indicated by size of farm and taxes paid. But they score high on the quantity of labor used on the farm, and medium on the value of agricultural produce. The degree of communication contact with the external system is also high.

There is a Mixed type which share some characteristics of all the foregoing types.

Looking at the communication behavior of Type I (Modern) and Type III (Traditional), one finds that both types have

high scores on communication contact with the outside system, yet they differ in the total input of labor days on farm and the gross value of agricultural produce (Type I being low and Type III being high). They also differ in the degree of change orientation and social activity (Type I being high on both, and Type III being low on both). Thus, it seems there is a kind of curvilinear relationship between the degree of change orientation and the degree of communication contact with the external system. These relationships have some implications for future research.

Before we indicate some lines for future research, a few limitations of the present study may be mentioned.

Limitations of the Study

1. The purposive method employed in selecting peasant respondents in India Phase II study meant the exclusion of peasants who were cultivating less than 2.5 acres and/or aged more than 50 years. Thus the data do not permit a valid claim for generalizing to the peasants in general.

2. Out of eight villages covered under India Phase II Study, two villages had to be dropped because of the non-availability of information on a major variable, caste. Deletion of two villages meant narrowing the range of variation of the traditional and modern characteristics of the peasant society.

3. Setting up rigorous criteria for inclusion of variables in the final factor analysis meant discarding important variables which measured other dimensions of traditionalization. Perhaps, the method used for the selection of variables was too rigid for purposes of this study. Many variables which were excluded from our analysis might conceivably have thrown light on other dimensions of the Indian peasant subculture.

Needed Research

The degree of initiative and communication leadership of the administrative personnel may mediate the relationship between the change oriented peasant and his degree of external communication contact. The "push" of communication contacts through the administrative machinery of "development-from-above" may hook up the traditional type of peasant with the external system, in spite of his low orientation to change. By contrast, the type of peasant who manifests a high degree of modernization as measured by level of knowledgeability, may have a higher degree of initiative in his communication contacts with the extension agents. Research is needed on the role of leadership qualities on the part of the extension service personnel who can increase communication inputs to the traditional peasant type.

It is possible that the gross measure of communication exposure used in the present study is not a very precise index of the communication process. Other communication

measures are needed to provide empirical evidence to test the following propositions:

The modernized peasants show a greater degree of initiative in communication transactions with extension personnel than do the traditional peasants.

The content of the messages to which peasants are exposed differentiate the modern from the traditional peasants.

The channels and the sources of technical information used differentiate the modern from the traditional peasants.

Future research may focus on the relational aspects of communication structure to determine the types of cliques and communication nets that unite different types of peasants. Given a typology as described in this thesis, do the seeker-sought relations and cliques among peasants occur more within a type than across the types? Could we expect the Mixed types to be liaison persons in a peasant society? How do social system characteristics measuring modernization dimensions influence the nature of communication nets within and between peasant types?

In the present study six villages were examined with an aggregate analysis. While this aggregate analysis increased the degree of generalizability across regions, it also led to the exclusion of some important social psychological and sociological measures of peasant characteristics, because of lack of data across all the six villages. With factor analysis, dimensions extracted are a reflection of the input variables. Further studies are needed to reliably measure social psychological traits like fatalism, empathy, inter-

personal trust, level of aspirations, secular orientation, and many other characteristics of peasantry. Many of such variables are very "soft". Consequently, it is difficult to operationalize and measure them with a high degree of validity and reliability. Unless we continue to study and improve basic measurements, many of the observations describing the subculture of peasantry will be inadequate and superficial.

Finally, there is a methodological suggestion. When using a large sample of subjects for factor analysis, it is desirable to have a measure of stability of factor structures of the P- and R-type. For example, in the present study, as mentioned in the previous Chapter, 94 subjects were randomly chosen out of 559 subjects for P-type factor analysis. This small sub-sample size was necessary because of the capacity of FACT AN program available at the Michigan State University Computer Center. The FACT AN program can work only with a maximum of 100 variables. As each subject (peasant) is considered as a variable in the P-type analysis, the number of subjects could not exceed 100 subjects. Given this limitation on the size of the sample, it is desirable to have P-analysis done using more than one sub-sample. In the same way, for R-analysis more than one sub-sample of, for example, 200 respondents, could be submitted for factor analysis. These procedures would allow the calculation of some measure of factor stability.

The present study shows how quantitative methods can be usefully employed in parsimoniously describing a large peasant audience so that communication of farm information to the peasant can be effectively planned.

APPENDIX

Factor Analysis: R and P Types

The main purpose of factor analysis is data reduction. Given a large number of variables, a factor analytic technique is a method of analyzing the correlation matrix to determine some transformation of the original set of variables accounting for most of the variance in the original. Factor analytic techniques enable one to empirically search for basic dimensions and a parsimonious description of the phenomenon under investigation. A "factor" may be regarded as a hypothetical construct deriving its meaning from all those variables sharing common variance under it. All variables are assumed to be normal, linear, and additive. To the extent these assumptions are not met, the results of factor analysis must be treated with caution.

Depending on the variables that make correlation matrix, and call for transformation into factors, we can talk about the responses or tests, and persons. If we correlate and factor responses or tests for a sample of people, with time held constant, then the factor analysis is known as R-type analysis. If we correlate and factor people for a sample of responses or tests with time held constant, then the factor analysis is known as P-type analysis. Maclean (1965) shows different types of factor analytic schemes labeling them

R, Q, P, O, T, and S. The factor analytic methods of R and P used in the present thesis correspond to what Maclean calls R and Q. His description of P analysis is entirely different from what goes by the name P-type analysis in this thesis. But the illustration of his Q analysis is the same as P-type used in the present thesis.

R-type Factor Analysis

The following steps illustrate hypothetically what happens in R-type factor analysis.

A score of matrix for 559 people measured on 17 characteristics was obtained.

R Score Matrix

People	Characteristics					
	Land	Education	Value of agricultural produce	.	.	Innova- tiveness
1	9	6	10,000	.	.	7
2	8	5	9,000	.	.	6
3	3	3	3,500	.	.	4
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
559	3	0	2,000	.	.	3

In the foregoing matrix person 1, for example, scores high and person 559 scores low on all the characteristics.

Then we constructed a correlation matrix for the R score matrix:

R Correlation Matrix

Characteris- tic	Land	Education	Value of agricultural produce	. . .	Innova- tiveness
Land	1.00	.34	.65	. . .	.24
Education	.34	1.00	.34	. . .	.35
Value of agricultural produce	.65	.34	1.00	. . .	.43
. . .	.	.	.	. . .	.
. . .	.	.	.	. . .	.
. . .	.	.	.	. . .	.
Innovativeness	.24	.35	.	. . .	1.00

where we see that persons who are more educated are likely to be more innovative as also those cultivating more land raise higher value of agricultural produce.

Next, the foregoing correlation matrix was used to extract the factors by using orthogonal rotation. Rotation is essentially a mathematical means of looking at the data from different angles with a view to simplifying factor structure and also to identify the most invariant factor structures. Orthogonal rotation maintains independence between two factors so that their correlation is always zero. Oblique rotations do not place this constraint upon factors. The following table gives the number of factors extracted, factor

loadings, and communalities. Factor loadings express the correlations between variables and factors. Communality refers to the proportion of variance of each variable accounted for in the factor solution.

Characteristic	Factors			
	I	II	III	h^2 (Communality)
Land	-.056	.340	.016	.742
Education	.661	.188	.302	.563
Value of agri-cultural produce	.354	.790	.043	.752
.....	...	...	...	...
.....	...	...	...	...
.....	...	...	...	...
Innovativeness	.743	.276	-.131	.632

Now, looking at the factor loadings, one can describe each factor in terms of those characteristics showing their highest correlations with the factor. Thus, Factor I can be described in terms of education and innovativeness and named as change orientation; Factor II can be described in terms of land and value of agricultural produce and named as farm resources. Now, one can describe the sample in terms of two dimensions instead of four measures. Thus, one has achieved some degree of parsimony in description.

P-type Factor Analysis

P-type factor analysis is simply the obverse of R. One can transpose the R score matrix of the characteristics of the people in the following form:

P Score Matrix

Characteristic	Person						
	1	2	3	..	..	..	559
Land	9	8	3	..	..	..	3
Education	6	5	3	..	..	..	0
Value of agri-cultural produce 10,000	9,000	3,000	..	..	..	2,000	
.....	.	.	.	..	..	..	.
.....	.	.	.	..	..	..	.
.....	.	.	.	..	..	..	.
Innovativeness	7	6	4	..	..	..	3

where one can see person 1 scoring high on all the characteristics and the 559th person scoring low on all of them. For P-type factor analysis, instead of correlating the characteristics of the person, one can correlate person 1 with person 2 and person 1 with person 3 and so on out to person 558 with person 559. The correlation matrix takes the following form:

P Correlation Matrix

Person	Person					
	1	2	3	.	.	559
1	1.00	.65	.09	.	.	-.05
2	.65	1.00	.15	.	.	-.15
3	.09	.15	1.00	.	.	.75
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
559	-.05	-.15	.75	..	.	1.00

This means that persons 1 and 2 are much more similar in the characteristics under consideration than are persons 3 and 559. This correlation matrix, when factor analyzed by orthogonal rotation, gives the following factor matrix.

P Factor Matrix

Person	Factors		
	I	II	III
1	.70	.06	.12
2	.65	.04	.20
3	.11	.02	.75
.	.	.	.
.	.	.	.
.	.	.	.
559	.02	.09	.85

In P factor matrix one can see the characteristics of persons 1 and 2 closely associated with Factor I which is one type, and persons 3 and 559 are alike and define another type associated with factor II.

Next one can describe the P factors in terms of the weighted scores of the characteristics of persons assigned to one or the other factor on the basis of highest loading. The following matrix gives the standardized scores of the characteristics of persons assigned to different types.

P Factor Weighted Scores

Characteristic	Types of Persons		
	I	II	III
Land	0.26	-0.20	-0.30
Education	0.40	-0.21	-0.34
Value of agricultural produce	3.93	-3.16	-3.90
.....	.	.	.
.....	.	.	.
.....	.	.	.
Innovativeness	0.40	-0.24	-0.34

Thus, P-type factor analysis enables one to describe a large number of persons in terms of a parsimonious typology.

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