THE POLITICAL DISTRIBUTION OF
PUBLIC POLICY GOODS IN RURAL INDIA:
RAJASTHAN, 1961-1971

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ABSTRACT

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Once levels of public policy goods allocation are set, policy
decision-makers face the task of distribution. A number of environmental
factors may influence these distributions, yet little is known about
which factors are important and when they are most likely to be salient
features of a distribution system. Understanding this process in poor,
agrarian societies is particularly important now because of the dilemma
of increasing population and static agricultural production systems.
Before policy-makers attempt to change their own rural environments,
analyses of how different institutional arrangements are associated with
policy distribution and performance should be formulated.

This study utilizes aggregate data for several time periods taken
from one Indian State, Rajasthan, for the period of 1961-1971, to make
inferences about the associations between the policy environment and
rural policy distribution. Two policy areas are chosen for examination.
These are rural development funding disbursed through panchayati raj
organizations and rural electrification administered and distributed

through the Rajasthan State Electricity Board. These policy variables are associated with electoral factors -- electoral mobilization rates and party fragmentation; economic development factors, particularly irrigation potential; and, institutional factors -- socio-economic dominance and political party dominance. Analysis of covariance and regression techniques are used to test five multipart hypotheses.

For policy resources controlled by the regime party in Rajasthan's parliamentary system, party fragmentation and party control (political party dominance) are important factors in distribution decisions. Constituencies with highly unequal concentrations of socio-economic resources (land and status) also receive greater amounts of policy resources controlled by the regime party. Policy resources controlled independently by administrators -- in this case, rural electrification -- are less affected by policy environmental factors. It appears that administrators avoid political interference from elected officials and resist pressures generated from contexts in which there is inequality of resource distribution.

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CHAPTER ONE

THE POLITICAL DISTRIBUTION OF PUBLIC POLICY GOODS
IN RURAL INDIA RAJASTHAN, 1961-1971

Introduction

Many agricultural nations are investing heavily to grow more food.
India and its sub-national units, the state governments, have placed a
special emphasis upon agricultural productivity. During the past decade
the pressures on food supply brought about by an expanding population
have placed additional strain on India's policy-makers. India's 550
million will expand to nearly one billion near the year 2000. While
technologies are available for increasing agricultural production, the
solutions to increasing food grain yields are bounded by political and
institutional factors, also.

Agrarian nations' ability to manage agricultural resources and
technology has been questioned by numerous scholars. Those nations with
decentralized decision-making structures have been most severely
criticized. Francine Frankel and Karl von Vorys (1972) conclude for
India that

> . . . the introduction of new agricultural technology
> commonly known as the green revolution, is accompanied
> by an accelerated disruption of traditional rural
> initiatives; forces already in motion will push tradi-
> tional socieites in rural areas to a total breakdown
> before an alternative system of mutual obligations can
> emerge and be established. . . . It is difficult to
> imagine just how democratic politics, or any political
> system, for that matter, can survive when it is based
> on a population so fragmented and radicalized. (1972:
> 37-38).

This judgment is premature and preceeds a theoretical understanding of the relationships between the green revolution technologies and the management of resources.[1] In fact, there is evidence to suggest the green revolution is not breaking down traditional rural structures but has solidified the power bases of rural elite and blocked the redistribution of policy and technological benefits. To discuss "total breakdown" of rural social structure is neither grounded in an accurate or compelling analysis of rural social structure nor is very useful in suggesting alternative technologies or policies. The current issue is not whether any given political system will survive, but is how political arrangements have an impact on which technological alternatives are chosen and how policies are made and policy goods distributed. Such analyses may lead to the discovery and manipulation of instrumental factors and evaluation of policy-makers. It is necessary to move to hypothesis testing and specification of feasible institutional alternatives.

There is little analytic writing on how India's (or any) democratic structures effect the management of agricultural resources. Yet there is speculation about whether or not decentralized systems are appropriate for economic development in agrarian societies.[2] Much of the agricultural development literature tends to take constitutional arrangements and administrative structure for granted, however, particularly in empirical research. There is abundant literature explaining agricultural productivity as a function of specified factor inputs, e.g. seeds, water, labor, and so on.[3] Yet organizational components bringing these imputs together are often ignored. This oversight might be due to the difficulty of analyzing how large-scale organizations may influence the agricultural

policy process and, then, how to measure the specified variables. There are, however, partial models available and this work is a small step in the direction of ordering data for one democratic agrarian society.[4] This work dimensions the rural policy distribution process in one Indian state, Rajasthan, and focusses upon one decade of policy distribution, 1961-1971. Before describing the empirical part of this monograph, attention is given to the theoretical factors which lead to the statement of hypotheses and measurement of important variables.

A PARTIAL MODEL OF PUBLIC POLICY DISTRIBUTION

One type of constitutional arrangement is analyzed here: a parliamentary democracy organized as a federal system. This means that regular elections are held wherein universal adult suffrage and voter participation determine some of the officials who make policy. Candidates are chosen by political parties to run for elected office. The regime is formed by a political party or coalition of parties whose leader is the chief executive officer of the government. Opponents attempt to gain power while sitting in the legislative Assembly. An additional feature of this limiting case is that a non-elected, semi-autonomous administrative organization parallels a hierarchy of elected officials and is responsible for the implementation of policy. These administrators may exercise discretion in key areas. Administrators have greater control over policy resources when they are separated from political pressures brought to bear by a political party organization and when the policy goods they control are more easily dimensioned in economic (or rational) terms. When rational, planning criteria can be utilized for policy distributions, administrators exercise considerable authority.

Organizations outside the governmental arena may attempt to exert influence on policy decisions and implementation. Such non-governmental organizations have been termed "interest groups" by some scholars and "sectors" by others.[5] Voters, as individuals, or as part of some political organization, may seek to receive larger portions of the policy good than others. The system is decentralized; pressures from political actors at the lowest level of representation and administration are applied to achieve higher levels of policy allocation. What happens at the bottom of this set of political institutions matters a great deal though there may be periods when the control of a legally superior authority at the center of the system may be exerted. The institutional feature of this policy environment may be conceptualized and measured. It makes sense to investigate the conditions under which the policy environment may affect policy distributions and what aspects of that environment are salient for the policy distribution process.

Public Policy Goods

Among the many characteristics of public policy goods, two are central to this analysis.[6] First, public policy resources are, to some degree, divisible; and, second, public policy goods may be more or less specifically associated with a desired societal product. Governments can make decisions on the extent to which certain persons or groups can benefit or absorb loss from a given public policy resource. And, some public policies are more directly related to an economic production function that others. For example, we seem to know more about regulating the monetary system than we do about improving the "quality of life" in urban (or rural) areas.

With regard to policy goods' divisibility, as Curry and Wade (1968) point out

> One may have more or less than whatever it is that
> current policy does in the way of allocating things
> people want. . . . Public highways are clearly
> divisible . . . as are military forces, taxes,
> maritime subsidies, welfare programs, government
> controls over business, public jobs, and all other
> public policies and programs. (1968: 3).

Governments provide public policy goods which if consumed by one diminish the consumption of the same good by another and where the exclusion of potential customers is feasible.[7] Policy goods may also vary on the cost of the first unit and the nature and extent of externalities, and have many of the same characteristics of private goods except they are produced and distributed by governments often by invoking authority or force. Any public policies which are produced by political processes may benefit some more than others or some may pay higher costs than others. Costs and benefits of public policies are more or less divisible.

Public policy goods are distributed with social, political and/or economic goals in mind. The relationship of a specific public good to the desired outcome may be well-known or may be less well understood. In the case of producing food grains, there are well known functions combining many material inputs. For example, policy-makers, given a commitment to certain technologies, can predict accurately the amounts of water necessary, in combination with other inputs, to produce a given amount of wheat. Policy-makers can choose alternatives of water supply to conform to these constraints. If the food production paradigm is known, fewer exogenous factors can influence the distribution of public policy goods intended to create a steady water supply. However, when the paradigm for

a given produce is not familiar, the number of exogenous forces which
may influence the allocation of public policy goods expands. Take,
for example, the goal of producing "quality education," a goal prominent
in discussions of racial desegregation, educational financial structure,
and control of the educational process.[8] Very few of the important
hypotheses concerning "quality education" have been tested. What is
quality education for some, say better college preparation, may not be
quality education to others who might prefer more specialized vocational
education. Further, even if everyone agreed on what the outcome of the
educational process might be, there are numerous strategies available.
When governments provide public policy goods for a loosely defined goal,
where the "production function" is less clearly formulated, political
factors are more likely to explain policy goods distribution. A later
section discusses this political process and policy goods distribution
in a democracy.

The divisibility of public policy goods and the degree of specificity
of knowledge relating these goods to production functions are two
important characteristics included here. Ilchman and Uphoff (1969) in a
relevant discussion, comment on the "tangibility" and "intangibility" of
some policy goods and resources. Their general list includes tangibles
such as economic goods and services, and intangibles including information,
status, force, legitimacy, authority and coercion. The emphasis upon
"tangibility" or "intangibility," however, obscures the continuous process
by which policy goods are given value. When we ask what is the value of
something and make a new discovery about the relationship of a good to a
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important to remember that even if our analyses are incapable of placing a policy good in one category or another, policy distribution processes proceed so that even if we do not know the "value" of a policy good, those involved in the process directly do make some estimation of its worth. Policy goods divisibility and production specificity are two categories for explaining the distributions of public policy goods in one political system.

Transactions and the Policy Distribution Process

Public policies and goods are produced by transactions between decision-makers in institutional arrangements. Decision-makers may consider a number of factors including those in the policy environment in determining levels of policy goods allocation. The total amount of public policy goods produced by one government can be understood by an analysis of intra-governmental bargaining and exchange, the supply of resources available, and the nature of the production and distribution systems.[9] The level of public policy goods, produced for the system is assumed here. What is of interest is once a level of policy goods has been determined, what factors impinge upon its distribution. Why do some persons, organizations or regions get more of what is available than others? As such, this analysis is interested in making inferences about transactions between state-level organizations and policy actors at lower levels of the political process. Further, it can be suggested what conditions encourage and discourage transactions between state-level decision-makers and local-level political actors.

Important transactions, or bargained exchanges, occur between the regime and local-level political actors. It is useful, in these terms, to distinguish between "nonpolitical" and "political" transactions:

> Most goods and services, status, information are
> exchanged directly between members of sectors
> without regime interference or involvement.
> These exchanges are not political. However, many
> exchanges involve authority or another resource
> held by the regime. Whenever sectors use resources
> to affect public policy or the statesman combines
> his resources into policies affecting resource
> allocation and aiming at compliance, these exchanges
> are political. (Ilchman and Uphoff, 1969: 94).

One clarification might be added here. Bargained exchanges between regimes and local-level policy actors are transactions when compliance and authority are essential features of the activity.[10] The government may be able to establish price unilaterally at some point in the bargain.

Varied decision-makers control different resources to be used in transactions. Political parties may gain access to policy goods which are useful in the maintenance of their organization and winning elections; administrators may control other policy goods. Party organizations may have a special affinity for divisible policy goods for which there is considerable ambiguity in the application of the policy good to a production function. Such policy goods might be directed toward political and/or electoral outcomes. Administrators may have access to less divisible goods or those which are more easily related to an economic production function. Transactions occur when two or more sets of actors hold resources which are mutually desired. Parties may exchange policy goods for votes; administrators may exchange policy goods for support or promises not to interfere in administrative affairs. Either set of decision-makers

may trade a policy good for control of a process or to block rivals. Administrators or political parties may also withhold goods for local-level actors to deprive them of resources which might be used to undermine the decision-makers' positions.

Transactions are not made without limit and are conducted in rule-defined arenas. Strategies for achieving an advantage in bargained exchange are developed by interacting with the formal and informal rules of the system. The rules of the system separate the policy-making activities from policy implementation. Constitutional arrangements provide for elected officials to "make" policy while non-elected officials, administrators, are formally responsible for seeing that policies are carried out. The informal rules of the system determine the degree to which policy-makers can exercise their will and the degree to which administrators can impose their own solutions upon elected officials and their clientele. Further, the rules of the system may allow and protect the participation of citizens in the political process by direct election of policy-makers. Each voter is given the right to choose a candidate or political party through a direct electoral process. Variance in voter participation and preferences of political parties is relevant to the strategies developed and pursued by the political party which forms a government. There may be only one regime party (or coalition) at a time and other parties and coalitions may seek to become the regime or govern-ment party. The strategies developed by the regime party are likely to be based upon transactions between the government and political supporters at the local-level which strengthen the regime party's electoral position.

Administrators may be protected from intrusion by political party organizations and by influential local-level political actors by rules

against bribery and corruption. These formalities and other social and attitudinal factors, give reason for administrators to resist pressures from political party interferents.

Transactions between state-level decision-makers and local-level political actors can and are more likely to be sought under some conditions than others. Planning criteria apply to a policy resource are a first limiting factor on these transactions. If the policy model calls for a policy good to those who match explicit criteria, others who do not match are excluded. But when criteria are not stated or are unenforceable, other actors, not originally intended to be beneficiaries of the policy good, may be included. A second consideration is when the regime party does not need additional Members to control a legislative Assembly and the prospects for current Members retaining their seats are good. Under these circumstances, there is less reason to heed the demands and needs of constituents at the local-level. However, when the electoral environment becomes more competitive and when the margin between the government (or regime) party and opposition groups (or coalitions) is slim, more attention is given to local political processes. This redirection of attention by political parties from governing to seeking election may have significance for both the internal organization of the regime party and its actions on policy distribution.[11] State-level administrators might perceive the electoral environment to be important when greater pressures are brought upon them by political party organizations for increased levels of resources. Clearly, administrators' views of the electoral or policy environment may follow those of elected decision-makers because elected officials make the

policies administrators are to implement. At the same time, administrators may use policy resources to increase their control over policy processes and utilize information available from the policy environment for that objective.

If it is true that administrators' perceptions of the policy environment depend upon the saliency of that environment for elected officials, it may be reasoned many of the same factors important as policy distribution criteria for elected officials will be critical for non-elected, administrators also. Administrators may react differently to the environment than elected officials, however, even if the environmental factors are identical. The same policy environmental pressures which may cause the regime party to yield policy resources are those which can invoke negative sanctions from administrators. This is so when administrative agencies are defined as autonomous organizations and when these agencies select their own personnel without intrusion from external sources. Administrators are likely to utilize policy resources to control more resources, achieve specific performance criteria, and to resist interference by other agencies, political parties and influential local-level actors. This analysis assumes that administrators and elected regime party (and opposition) party Members are in conflict and respond to similar policy environmental factors in a manner which reflects their own interests.[12]

Three aspects of the policy environment are related here to transactions between the regime party and local-level political interests. First, rational, planning criteria may be applied to the distribution of public policy goods, where appropriate. Even when administrative and

political systems are decentralized, planning occurs. It may be
perceived that "a planned economy can be implemented rationally in a
contemporary society . . . by a process of multi-level planning and
decision-making." (Sau, 1971: 1759). Second, voter turnout and
voter party preferences matter to elected officials and administrators;
and, three, there are local-level "institutional" factors important
to both sets of policy decision-makers. Voter turnout and preference
are significant factors because electoral support allows the retention
of a regime party or its removal. Institutional factors refer directly
to control of a constituency. Political party organizations may
mobilize support for condidates at the constituency-level and/or informal
organizations based upon wealth and status may be important for both the
election of Members to the Assembly and for the distribution of policy
resources.[13] Voting behavior is linked, no doubt, to the institutional
characteristics of a constituency. For the sake of a clear understanding
of each set of factors, informal organizational and party control are
included separately in the analysis.

The Policy Environment: Economic Criteria

Policy resources are intended for many purposes and goals. Policy
goods are allocated for regulation or for the distribution and redistribu-
tion of benefits. Policies included here are those which distribute a
society's scarce resources for the production of benefits for a rural
population. These policies can be associated with a social or economic
product in more or less clear terms. The policy goods either are intended
for the socio-economic uplift of persons living in constituencies or the

improvement of agricultural productivity. A more careful consideration of economic criteria in policy goods distribution is given below in the section on agricultural policy in Rajasthan.

The Policy Environment: Electoral Factors

Voter turnout and party preferences are vital factors for elected officials and administrators who distribute public policy goods. Shifts in the percentage of the electorate who vote may have an independent impact on who wins in a constituency. If the number of voters who participate in an election increases by a large percentage over previous elections, the chances of a shift in representation are greater. There is a greater likelihood that a new party or group may be able to mobilize their supporters to defeat an opponent. The number of parties or candidates who compete in a constituency also has an impact on the changes of any given party for victory. Where there are more parties competing, the chances are that winning may be accomplished by a smaller percentage of the votes in a plurality system. The character of the cleavages between political parties is a critical factor in predicting who may win an election and how policy resources may be invested to affect an electoral outcome.

Voter turnout at one point in time is not an adequate indicator of voter participation considered by regime parties in the distribution of public policy resources. Change in voter turnout between two or more elections may be more carefully assessed by regime party leadership. If a party leader or administrator can guage the changes between an immediately preceding time and the present, it may be possible to direct policy resources for electoral outcomes. A measure of change in voter turnout

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resources for electoral outcomes. A measure of change in voter turnout

between two elections may be part of a decision-maker's model of policy resource distribution. Voter turnout change is here termed <u>electoral</u> <u>mobilization rates</u> and <u>is defined as the positive or negative change</u> <u>occuring in voter turnout for one constituency between at least two</u> <u>elections</u>.[14] Increases in electoral mobilization rates imply a fluidity in the electoral environment.

The number of party preferences and the strength of these parties in a constituency may affect regime party and local-level policy transactions. There may be more than one or two parties competing in a constituency and if a sizable proportion of the voters chooses each party, only a small plurality of voters may elect a Member to an Assembly seat. Minor parties are crucial in these constituencies because small, but loyal, numbers may win a seat. Cleavages in the party system with a constituency can be equally or more salient for policy decisions than electoral mobilization rates. There may be a wide range of cleavage situations across constituencies which have a number of parties. It is not so much an absolute increase in voters as it is the percentage of the vote necessary to change an electoral outcome. As more parties claim a larger portion of the vote, margins between winning and losing become smaller. The character of party cleavages in the constituency for the Assembly seat can be summarized by the term <u>party fragmentation</u>.[15] A constituency may be less fragmented as the number of parties declines to approach one and there is near unanimous support for one party; a constituency may be more fragmented when the number of parties increases and the proportion of those voting for each party increases to the point when each party has nearly the same proportion of those voting.

The Policy Environment: Institutional Factors

Economic criteria and electoral factors -- electoral mobilization rates and party fragmentation -- are part of a partial model for policy goods distribution in a decentralized, democratic system. Yet, a voter's calculation of benefits acrued or costs incurred from his voting decision must include the temperance of group memberships. This is independent of whichever political party he might wish to choose or his innate desire to vote, say, as a function of political knowledge. If a voter is dependent upon another person or group for economic welfare or status in a community, there is a greater chance that some significant other will prevail in the voting decision. The voter will comply with a "dictator's" wishes and shed preferences he might otherwise have expressed.

"Control" of a constituency and its voters becomes an important factor to be added to the policy distribution model.[16] Control of a constituency may be conceptualized in a number of ways, but two come to mind immediately. First, the bases of much political organization are the distribution of a society's valued resources including wealth and status. Inequalities in these distributions take many forms including political "machines" in urban areas to "patron-client" relationships typically associated with agrarian societies.[17] A second form of control of a constituency important for policy distribution is which party sends a Member to the Assembly. While this institutional factor is less stable, it may explain a great deal about why certain constituencies receive more policy resources than others.

Socio-Economic Dominance. The strength of local-level political organization may rest on the degree of concentration of socio-economic resources. Where private property holdings are customary, inequalities in the holdings of status and economic goods may be present. These inequalities, whether induced through force or shrewd management, are regularized and affect the lives of those who depend upon the owners of economic production resources for livelihoods. High levels of inequality in economic goods and status covary with dominance by those who have much over those who have significantly less. The other pole of this discussion is seldom examined. When property rights and means of production are more equally distributed, there is less social, economic, and political dominance by those only slightly wealthier.

Where socio-economic resources are concentrated in the hands of a few, one may speak of a high socio-economic dominance context. Where socio-economic resources are less concentrated, it is possible to speak of a low socio-economic dominance context. Because the distributions of social and economic resources in the constituency are slow to change, there is sufficient reason to believe that the relationships which depend upon social and economic resources are institutionalized or regularized with the passage of time.

Political Party Dominance. A second local-level institutional factor is which political party sends a Member to the Assembly from a constituency. In democratic systems, regime parties govern and opposition parties await the opportunity. Regime parties may treat opposition party constituencies differently in the distribution of policy goods. The regime party controls some of the important policy-making agencies and may distribute

policy goods to its own Members at the expense of opposition Members. Regime parties do not control every constituency, however, and any party may compete in a constituency so long as it can send a Member to the Assembly from some region and can keep an organization. The regime party is under no obligation to supply parties with resources for use in the maintenance of opposition candidates or Members.

Political party dominance reflects which party's candidate goes to the Assembly from the constituency. There are a number of logical relationships between socio-economic dominance and political party dominance. A constituency may be controlled by the regime party in a high socio-economic dominance context. A party and local elite may be intertwined. Similar to this is the close relationship between an opposition party and important local actors when an opposition party sends a Member to the Assembly from a high socio-economic dominance context. The regime political party may control a constituency in a low socio-economic dominance context; and, an opposition party may send a Member to the Assembly in a low socio-economic dominance context. A party may dominate a constituency in a low socio-economic dominance context, but parties must certainly deal with local actors in a high socio-economic dominance context.

The Policy Environment and the Distribution Process

Once the level of policy goods allocation is set for any given substantive policy area, political parties and administrators distribute policy resources. Policy resources are more or less divisible and may be more or less specifically applied to a societal outcome or goal.

Political parties may control goods apart from administrative inter-
vention; administrative agencies may be able to distribute policy
resources without recourse to authority from the regime party. It may
be assumed that the regime party and state-level administrators are
often in conflict with one another for control over scarce policy
resources. Both sets of decision-makers distribute policy resources as
a function of three sets of variables included in this analysis: economic
factors, electoral factors, and institutional factors. These are only a
few of the possible factors which may have an impact on policy distri-
bution. It is assumed that each set of decision-makers attempts to
maximize the utility of the resources controlled in transactions with
local-level actors at the constituency-level. Resources held by local
actors may become important under conditions described above. The
question now becomes what is the logic of the distribution of policy
goods in terms of each set of decision-makers?

The regime party's leadership is committed to maintaining a viable
organization in the Assembly while winning enough seats to insure a
majority in the Assembly. At least two electoral factors have been
mentioned as important in assessing the policy environment for trans-
actions between the regime party and local political actors. The party
cleavages in the constituency would seem to be significant for policy
resource distribution. The relative differences between winner and
loser are critical. When those differences are small, the regime party
investments of policy goods may be perceived to bring greater returns
than when those percentages are great. With smaller differences, the
regime party's investments of policy goods might retain a seat for its

own candidate or unseat an opponent. The higher the level of party fragmentation, the higher the rate of policy distribution. With respect to party fragmentation, who controls a constituency might be important. When the regime party sends a Member to the Assembly, the Member's constituency might well expect to receive more policy resources than a Member of an opposition party. As an opposition party Member's constituency becomes more fragmented, however, the regime party is more likely to sense the possibility of a victory and distribute more policy resources to that constituency. Who controls a constituency may affect the association between party fragmentation and the distribution of policy resources controlled by the regime party.

Because victory in the Assembly constituency is so important to both regime and opposition party groups, electoral mobilization rates could have an impact on regime policy distribution. However, the rate of change in voter turnout, or electoral mobilization rates, may have only an indirect influence on victory at the constituency level. While increasing numbers of voters implies a greater uncertainty and fluidity, these increases (or perhaps decreases) are only important as a function of the party fragmentation of the constituency. With large differences between the winning and losing parties, very high rates of change might make no difference on the electoral outcome. And where the difference between winning and losing is small, only a slight change can modify the outcome. Electoral mobilization rates, for the regime political party, are likely to have little independent impact on policy goods distribution.

It is implied above that electoral factors, alone, do not explain the distribution of policy resources by regime party leadership. Within

constituencies institutional factors intervene in the distribution of policy resources. Socio-economic dominance and political party dominance might have a determining impact. Because political parties are vulnerable to constituency-level pressures related to the threats to withhold electoral support, there is every likelihood that where socio-economic dominance is associated with electoral behavior, the regime party will respond. Higher levels of socio-economic dominance are likely to be associated with higher average rates of policy resource distribution. Lower levels of socio-economic dominance may receive lower levels of policy distribution. Further, which political party controls a constituency may have an impact on policy resource distribution rates. The regime party may be more likely to help its own Members than those of opposition parties when the regime party control policy resources. Where opposition Members are returned to the Assembly, they are less likely to have high average rates of policy resource distribution than regime party Members' constituencies.

State-level administrators may control policy resources unavailable to the regime party. When this is the case administrators have wide discretion on how to distribute those goods. When economic criteria are stated for distribution and information is accurate pertaining to those criteria, administrators distribute resources on those bases. Yet administrators are not without political performance criteria which can be subsumed in economic goals. Both Tullock (1965) and Niskanen (1971) assert the acquisitiveness of bureaucrats; administrators may seek to maximize resources or expand their sphere of control over resources in other programs. The spectrum of control includes the deliberate

avoidance of "political interference" by organizations and individuals outside of the bureaucracy. When bureaus are established apart from political party control, encroachment either from a party leader or important local-level leader can be repulsed on the basis of "efficiency." If regime (or opposition) party Members request policy resources, they may be denied if relinquishment of administrative control is implied in the transaction.

Where economic performance criteria may be stated specifically for a policy resource, administrators are committed to them. In addition, the electoral environment is, or may be, part of the administrators calculations. It has earlier been noted that regime party decision-makers may respond to party fragmentation and not consider, as closely, electoral mobilization rates. However, if electoral mobilization rates are associated with socio-economic dominance in constituencies and administrators wish to avoid interference from local-level political actors, it is likely that electoral mobilization rates will be negatively associated with the distribution of policy resources controlled by administrators. Because administrators are distinct from party organizations when the rules of the system prescribe administrative autonomy, party fragmentation is unlikely to have any immediate importance for administrators. In the same vein, which political party sends a Member to the Assembly is unlikely to have any direct impact on the distribution of administratively controlled policy resources.

To be sure, all of the possible considerations of regime party leadership and state-level administrators in transactions with constituency-level actors are not covered. There may be variations of these generalizations which can be stated in subsequent chapters in this monograph.

Hypotheses to be tested are found at the end of this chapter and in appropriate chapters later on below. All of the above analysis has an empirical referent and the discussion turns now to a description of the substantive policy area and geographical location chosen for the empirical analysis. We turn to a discussion of agriculture, policy and politics in Rajasthan.

AGRICULTURE, POLICY AND POLITICS IN RAJASTHAN

In the Indian states, public policy in agriculture is formulated by an interlocking set of individuals and institutions. At the pinnacle of the apparatus is the Chief Minister and his Cabinet. At the base of the system politically are the various organs of self-government. In between are Members of the Assembly who, when not holding ministerial rank, often serve as brokers between local leaders and the regime party. While most policies are formulated by elected officials, they are implemented and supervised by administrative personnel. Administrative agencies are statutorily responsible for decisions on the distribution of some agricultural resources, in addition. Administrators function at the levels of the state, district, and sub-district and often have discretion on the enforcement and implementation of policy. Within India's decentralized policy-making and -implementation environment is a nearly universal concern for planning agricultural growth and the application of rational criteria to the policy process. While rational planning is important, political processes are at the center of policy allocation and policy resources distribution.

Agriculture in Rajasthan

Rajasthan is an appropriate site for the investigation of hypotheses associating economic and political antecedents of policy distribution. Eighty percent (80%) of its population live in rural areas, seventy-nine percent (79%) of the work force are in agriculture, and over fifty percent (50%) of its wealth is taken from agriculture. Rajasthan is located in the northwestern sector of India and has a long border with Pakistan extending along the Thar Desert. Map 1 identifies Rajasthan's location in the Indian Union. It is the second largest state in India with 342,000 square kilometers and tenth in population with nearly 27,000,000 persons in 1971. Population density in Rajasthan is well below the Indian average. In 1971, there were seventy-five (75) persons per square kilometer; India's population density is 182.

Until the early 1950's Rajasthan was a net importer of food grains. She has fluctuated since as an importer and exporter among Indian states. Crops are dependent upon the monsoon of late June and early July. If rains are insufficient, the kharif crop (cultivated during the rainy season) is damaged and the following rabi (the year's second crop cultivated during the cold season) is also affected. There are occasional rains in December and January in the eastern parts of the state which can abate the loss of rabi but these are nearly always restricted to the plains and plateaus of the east.

Irrigation is one way of managing water supplies in the absence of frequent or insufficient rainfall. Rajasthan ranks fourth among Indian states in the amount of irrigated land -- 8.3% of the Indian total -- but

MAP 1

Main Political Divisions

Cease Fire Line

JAMMU & KASHMIR
Srinagar

HIMACHAL PRADESH

PUNJAB
Chandigarh Simla

DELHI
HARYANA
Delhi

UTTAR PRADESH

SIKKIM
Gangtok
ARUNACHAL PRADESH

Jaipur
RAJASTHAN
Lucknow

Patna
ASSAM
NAGALAND
Kohima

Shillong
MEGHALAYA
Imphal
MANIPUR

Gandinagar

Bhopal

BIHAR

W. BENGAL
Agartala
Aizawl
MIZORAM
TRIPURA

GUJARAT
MADHYA PRADESH

Dadra & Nagar Aveli
Diu
Daman

ORISSA

Calcutta

MAHARASHTRA

Bhubaneswar

Bombay

Hyderabad

ANDHRA PRADESH

Panaji
GOA

KARNATAKA

Bangalore

Madras

LAKSHADWEEP

PONDICHERRY

Kawarathy

TAMIL NADU

KERALA

ANDAMAN AND NICOBAR ISLANDS

Port Blair

Trivandrum

Scale:
320 miles to the inch
205 km. to the cm.

Source: Kingsbury (1974: 49).

MAP 1

Main Political Divisions

Cease Fire Line

Srinagar ⊛ JAMMU & KASHMIR

PUNJAB

Chandigarh ⊛ ⊛ *Simla*

HIMACHAL PRADESH

HARYANA DELHI

⊛ Delhi

Jaipur ⊛

RAJASTHAN

UTTAR PRADESH

Lucknow ⊛

SIKKIM

Gangtok ⊛

ARUNACHAL PRADESH

ASSAM

Patna ⊛

NAGALAND

⊛ Kohima

Shillong ⊛

⊛ Imphal

MEGHALAYA

MANIPUR

Gandinagar ⊛

Bhopal ⊛

BIHAR

W. BENGAL

Agartala ⊛

⊛ Aizawl

GUJARAT

MADHYA PRADESH

TRIPURA

MIZORAM

Dadra & Nagar Aveli

Diu Daman

MAHARASHTRA

ORISSA

Calcutta

Bombay ⊛

⊛ Bhubaneswar

Hyderabad ⊛

Panaji ⊛

GOA

KARNATAKA

ANDHRA PRADESH

Bangalore ⊛

⊛ Madras

LAKSHADWEEP

Kawarathy ⊛

TAMIL NADU

PONDICHERRY

KERALA

Trivandrum ⊛

ANDAMAN AND NICOBAR ISLANDS

⊛ Port Blair

Scale:
320 miles to the inch
205 km. to the cm.

RcK

Source: Kingsbury (1974: 49).

does not produce a proportionate amount of India's food supply. In 1968,
Rajasthan grew 7.7% of India's cereal food grains. The major portion of
these crops were grown on Rajasthan's estimated 2,161,000 irrigated
hectares (5.3 million acres). The most important cereal grains are wheat,
barley, jowar (sorghum), bajra (millet) and maize. A small amount of
rice is grown in some areas along with ground nuts and chilis. Jowar,
bajra and maize are grown during the kharif season; wheat and barley are
cultivated during the rabi or winter season. The production of these
crops has been unpredictable and highly dependent upon favorable weather
notwithstanding the large total of irrigated land. Using 1952-53 to 1955-
56 as base years, there has been uneven expansion in the production of
cereals. There was no improvement in 1962-63 and 1966-67, a significant
decline in 1965-66 and good years in 1964-65 and 1967-68. More recently,
1970-71 provided bumper crops with drastic declines in 1972-73 and 1973-
74.

Cereals are not the only agricultural commodities in Rajasthan,
however; and it is necessary to distinguish zones or regions within the
state where food grains are grown and where animal husbandry prevails.
Rajasthan may be divided into two divisions on rainfall. The "wet"
districts are those in the east. The "dry" districts are in the arid
west. The geographical boundary for these divisions is the Aravalli
Hills which rise in Rajasthan's southwest and fall diagonally to the
northwest. The eastern "wet" region can be further subdivided into
highlands and plains.

The "dry" region, or those districts with lower rainfall, comprise
the western half of the state. Animal husbandry is the main agricultural

sector in this division. There are several exceptions to this characterization, however. In the south, Sirohi district has an extensive system of tubewells which brings its effective level of water availability to higher levels than other districts in the "dry" region. In the northwest, Ganganagar district is interlaced with canal irrigation dependent upon headwaters originating in the snow-fields of the Himalayas. Finally, Sikar, Nagaur, and Jhunjhunu districts are cyclically "wet" and "dry" with greater variation in rainfall. For purposes of this analysis of agricultural systems, they are viewed as closer in character to the systems of the eastern plains and plateau than to the desert of the western part of the state. Map 2 indicates the divisions mentioned in the preceeding paragraphs.

Agricultural Policy in Rajasthan

Growing food grains requires combining numerous inputs at critical periods of time. Water, soil quality, seeds, fertilizer, labor and markets are among the necessary ingredients. Rapid technological advances have provided seeds which allow significantly higher water and fertilizer applications. Water and means by which it is provided are crucial. Wells, tanks, and canals can each be made more efficient through the use of tubewells and pumpsets. Tubewells with sufficient ground water can provide steady and adequate supplies for crops; tanks and canals are enhanced by the use of tubewells and pumpsets. Though pumpsets are initially expensive, there are data to suggest investments can be paid off within one crop year and certainly within two. Pumpsets run by electricity are considerably cheaper than those powered by

MAP 2

Based upon Survey of India map with the permission of the Surveyor General of India.
© Government of India Copyright, 1962.
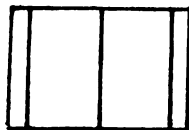
arid, but with extensive canal irrigation
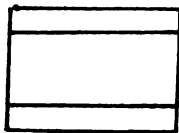
cyclically wet and dry, (semi-arid)
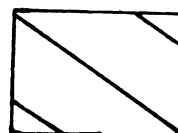
"wet" plains and plateau

petroleum based products. Because the supply of oil in India is largely
imported, there is some possibility of a shortage or prices too high
for the agriculturalist to pay. Of all the inputs necessary for increas-
ing food grain production with the new high yield variety seeds, water
is among the most critical, and as a means of supplying water, electricity
is a most attractive power supply.

But physical inputs and water neither produce food grains nor
account for changes in agricultural productivity. As Hunter (1969),
Nair (1969), and Elder (1968) point out, numerous nonphysical factors
impinge upon increased food grain yields. Farmers must be made aware of
new technologies and taught to use them. Further, the stimulation of
the economy may rest on citizen awareness of the importance of their
political activities and their ability to receive policy resources from
the state government. In addition to supplying factor inputs into the
agricultural production system, it may be important for governments to
teach citizens how a new political system works while providing policy
resources to make it work. Along with technical information, there is
a major dosage of political information and values included in policy
programs. Often citizen interest in the political system can be generated
by the creation of local-level institutions which encourage active
citizen participation. This has been the aim of the Government of India
and some of its state governments, including Rajasthan.

Policy resources intended for agricultural productivity and the
development of citizen awareness through local political institutions
are well suited to this analysis of policy resource distribution. In
general, Rajasthan's elected Chief Minister, the head of the regime

party (the Indian National Congress) in the state's Assembly (<u>Vidhan</u> <u>Sabha</u>) makes policy decisions. Most policies are formulated by a Cabinet of elected Members of the Assembly who are appointed by the Chief Minister. Members of the Cabinet hold portfolios according to substantive policy matters. Within the Cabinet are ranks of seniority and authority. Ministers outrank State and Deputy Ministers who outrank the recently created position of Parliamentary Secretary. The remaining Members of the Chief Minister's party are considered back-benchers and have less formal input into policy deliberation.

Policy is implemented by a hierarchially arranged administrative network. Ministers with portfolios are served by members of the Indian Administrative Service (I.A.S.). At the district (<u>zila</u>) level, I.A.S. officers serve as Collectors who perform a multitude of functions from being the districts' chief judicial officers to being the District Development Officers. At the sub-district (<u>tehsil</u>) level members of the Rajasthan State Administrative service (R.A.S.) perform supportive and some discretionary duties. The <u>tehsil</u> level functions include maintenance of revenue and land records and action in minor civil suits. Below the <u>tehsil</u>, a government employed village level worker (VLW) serves as an extension agent and a <u>patwari</u> keeps village land records.

The political and administrative hierarchies are closely related and Members and administrators are in regular contact over many issues. At the same time, there are autonomous agencies created for single purposes and separated from continuous Assembly scrutiny. These boards and agencies manage a single policy resource according to a qualitatively

different set of restraints. They can more easily be involved in adversary relations with elected officials unless coordinating bodies are created to resolve conflicts over goals and control of resources.

Two policy resources are analyzed in this description of policy distribution in Rajasthan. The first are rural development funds distributed through local self-government institutions which are part of Rajasthan's panchayati raj system; the second is rural electrification administered by an autonomous agency called the Rajasthan State Electricity Board.

Rural Development Funding: Panchayati Raj Disbursements

Parallel to the elective and administrative hierarchies described above are panchayati raj structures. Panchayati raj introduced rule by local committee and was legislated in 1959 as a means of decentralizing rural policy initiatives and activities. The purpose of the program was to increase citizen awareness and promote the uplift of the average rural village dweller. Groups of one to five villages are organized and authorized to formulate policy programs, submit budgets, and administer funds disbursed from the state government. The local, village-level council is called a panchayat, is directly elected and is chaired by a sarpanch. Panchayati raj is three-tiered linking the village to the district level through an intermediary organization called the panchayat samiti which includes representatives from each panchayat at the tehsil- and Assembly constituency-levels. Each panchayat samiti is combined at the district level into the zila parishad (district council) which includes the pradhans (chairmen of the panchayat samiti), Members

of the Assembly and representatives to the national parliament from the district, and the president of the district central cooperative bank.

The panchayat samiti is responsible for important expenditures and receives relatively large amounts of money from the state government through the Development Department. These funds are distributed in the forms of loans and grants and are supervised by a Block Development Officer and the Pradhan. The major category for grants is primary education; other major categories are agriculture and community development. Loans are made in several classes depending upon the type of activity a farmer undertakes. These are short-term, medium-term and long-term loans for seeds, fertilizers, bullocks and other equipment. In addition to the disbursement of funds the panchayat samiti encourages seed and fertilizer distribution.

Autonomous Policy Resource Distribution: Rural Electrification

Some policy resources are distributed by autonomous agencies which are less accountable to either an elected policy-making body or to the administrative infrastructure. One such agency is the Rajasthan State Electricity Board which determines how electrification should be distributed in the state. Electrification and the consumption of electricity are regulated and provided through the activity of the Electricity (Supply) Act of 1948 promulgated by the Indian Parliament. The Act created both a Central Electricity Authority and enabled the creation of state electricity boards. The Rajasthan State Electricity Board was created in 1957 after states' reorganization to regulate and supply electricity for Rajasthan.

The Rajasthan State Electricity Board consists of three permanent members -- a trained technician who is the Chief Engineer and two general administrators, one of whom is the Chairman. There are four temporary members chosen jointly by the Chief Minister and the Chairman. The Rajasthan State Electricity Board is funded from state money and receives capital from the Centre Government through the Ministry of Irrigation and Power. There are no formal restraints upon the distribution decisions of the Rajasthan State Electricity Board though state funding decisions can be used as a partial check. The Board's autonomy is largely due to the technical characteristics of its policy resource. Electrification's economic value is more easily determined and decisions on electrification, it is reasoned, are better left to technicians and administrators than to politicians.

The Board attempts to establish programs in anticipation of Centre power and irrigation policy. In Rajasthan, with limited industrial capacity and great need for agricultural development, schemes have been devised to be capable of providing electrification to rural areas in anticipation of Centre and state funding. Most Board administrators are part of the all-India I.A.S. though many are engineers. The autonomy of the Board has generated dissent from Members of the Assembly who feel the Board should be amenable to "political" control.

A step in this direction was imposed at the insistence of the Government of India's Ministry of Power and Irrigation in 1969. The Ministry directed the Board to decentralize its village selection process. Prior to 1969, while economic criteria were applied, the decisions were made without consultation or information supplied from sub-state authorities.

With the Ministry's directive, the Board was required to act upon recommendations made by the District Agricultural Production Committee (D.A.P.C.) which operates in each district of Rajasthan. The D.A.P.C. consists of elected leaders (Members of the Assembly and delegates to the national parliament) and administrators assigned to development posts. The Collector, a member of the I.A.S. chairs the Committee. This rule change introduced the possibilities of local political demand influencing electrification decisions and better information being made available to the Board for distribution decisions.

Figure 1 below illustrates the relationships between elected and non-elected officials, panchayati raj institutions and the administration of electrification in Rajasthan. The distribution mechanisms for two policy resources are summarized in this figure. These are rural development funding through panchayati raj institutions and rural electrification through the Rajasthan State Electricity Board. Before stating a set of hypotheses explaining their distributions, it should be made clear when policy environmental factors impinge on those distributions and further what characteristics of the distributions are sensitive to the policy environment. The decade of the 1960's in Rajasthan is an appropriate time to examine these associations as the following discussion should clarify.

EXPLAINING RURAL POLICY DISTRIBUTION IN RAJASTHAN

Earlier the logic of policy distribution for elected officials and administrators is outlined in the context of Rajasthan. No comment has been made to this point on what aspects of policy resource distributions

STATE LEVEL

Secretary Agriculture Department	Commissioner Development Department	Secretary Home Affairs	Registrar Cooperation Department	Secretary Revenue Department	Chairman Rajasthan State Electricity Board	

VIDHAN SABH (LEGISLATIVE ASSEMBLY)

Chief Minister Cabinet of Ministers

Chief Engineer District Agricultural Production Committee

DISTRICT LEVEL:

Collector and District Development Officer

Secretary, Zila Parishad Deputy District Development Officer

Pramukh, Zila Parishad Chairman

Members of Parliament

Members of Legislative Assembly

BLOCK LEVEL:

Block Development Officer

Pradhan, Panchayat Samiti President

VILLAGE LEVEL:

Village Level Worker

Sarpanch, Chairman Village Council

BLOCK LEVEL:

Tehsildar, Revenue Officer

VILLAGE LEVEL:

Patwari, Revenue Officer

FIGURE 1.1 -- Simplified political and administrative structure in Rajasthan (modified from Hunter, 1969)

are subject to policy environmental pressures. Levels of policy allocation for any given state system, or even constituency, are likely to be set according to factors not included in this analysis. But change in distributions is probably more likely to be associated with political pressures than are levels of allocations.[18] Therefore, the policy resources described above -- rural development funding and rural electrification -- are conceived where possible, as rates. Where this is not possible, as with rural electrification, an appropriate period of time has been chosen to view electrification distributions as a function of the total decade's electrification.

Earlier discussion also assumed the policy environment would be associated with policy resource distribution. It may be asked here if this assumption is valid. Any examination of voter turnout for 1952-1972 indicates more persons are participating in elections each year. As Figure 1.2 displays, there is a consistently positive rate of growth between every election period. As has been noted before increasing voter turnout may not determine success or failure for political parties in constituencies. Figure 1.3 outlines the percentages of voters and Assembly Members for the regime party, opposition parties and independent Members from 1952 through 1967 -- four elections. It is clear that the regime party (the Indian National Congress) had smaller majorities in the Assembly in 1962 and 1967 than before. It may also be noted that at no time has the regime party been a majority party in the electorate. If the policy environmental factors outlined earlier are critical for policy distribution, they should certainly be salient for the Third and Fourth (1962 and 1967) General election periods.
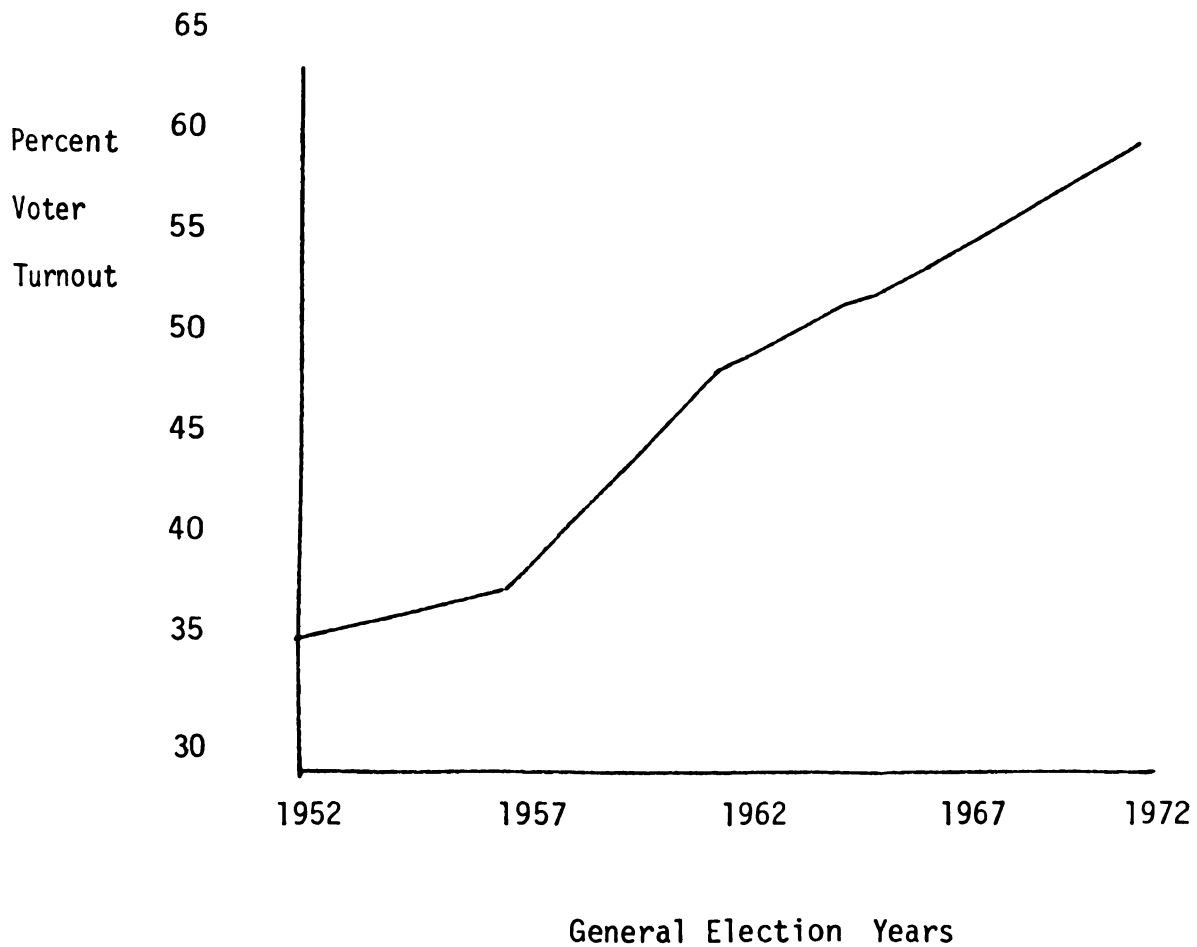
FIGURE 1.2 Summary of percentage of voting turnout in five elections to the Rajasthan legislative assembly.

Sources: Craig Baxter (1969) and The Hindustan Times and The Times of India, March, 1972.
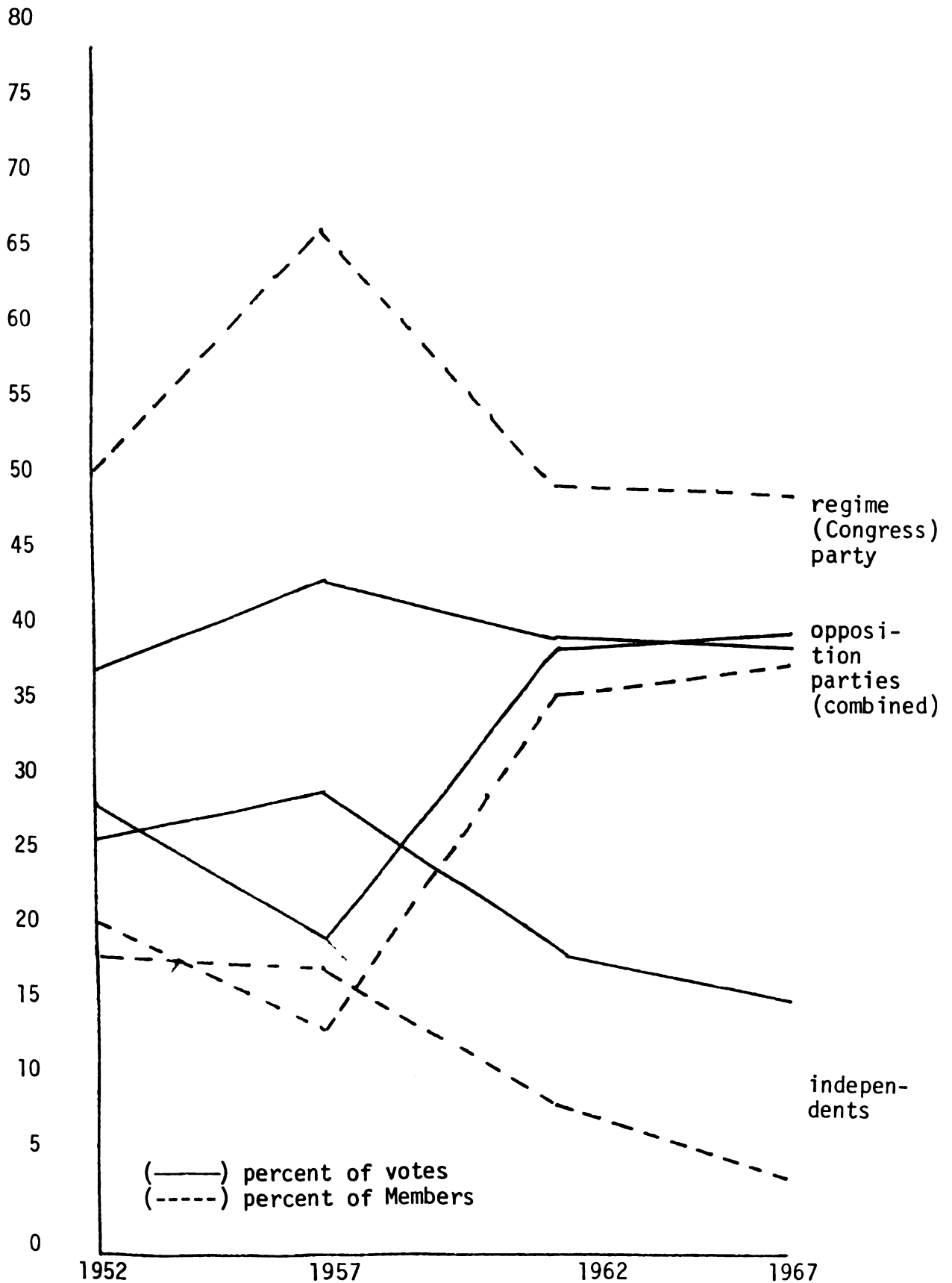
FIGURE 1.3 Political party support in Rajasthan's electorate and legislative assembly.

Sources: Baxter (1969); Fourth General Election, Statistical Review (Election Department, Government of Rajasthan, 1967); The Hindustan Times and the Times of India, March 1972.

Even more convincing, however, is the examination of membership in the Cabinet which is composed of Members of the regime party. Figure 1.4 displays the size and composition of the Cabinet for 1952 through 1971. The number of Cabinet Members increased dramatically in 1967 following the Fourth General elections. Discussion in later chapters suggests that the regime party turned its attention more closely to the electorate in 1967 than before. While the new Cabinet Members may not have shared equally in decision-making authority, there has been an expansion of a previously exclusive circle. These data indicate that new Cabinet Members are added as additional electoral support is necessary. New Cabinet Members are able to bring electoral support to the regime party. There may also be defections from opposition parties with the promise of power in the regime party apparatus. Expanding the size of a party's decision-making group, however, may precipitate an organizational crisis, but nonetheless, the Indian National Congress took steps to coopt new Members into the leadership circles -- as it did in the mid-1950's when Mohan Lal Sukhadia became its new Chief Minister and was faced with the task of reorganizing and rebuilding a party coalition.

We may now turn to the development of hypotheses associating rural policy resource distribution to economic criteria, electoral factors and institutional contexts. We begin with rural policy distributions and economic development.

Economic Development and Rural Policy Distribution

In part, rural development funding and rural electrification are distributed in response to economic criteria. The Government of

	'61	'62[1]	'63	'64	'65	'66	'67[2]	'68
Ministers	7	8	8	8	12	14	13	14
State Ministers							10	5
Deputy Ministers	8	10	10	10	9	9	3	12
Parliamentary Secretary[3]							4	4
TOTAL	15	18	18	18	21	23	30	35
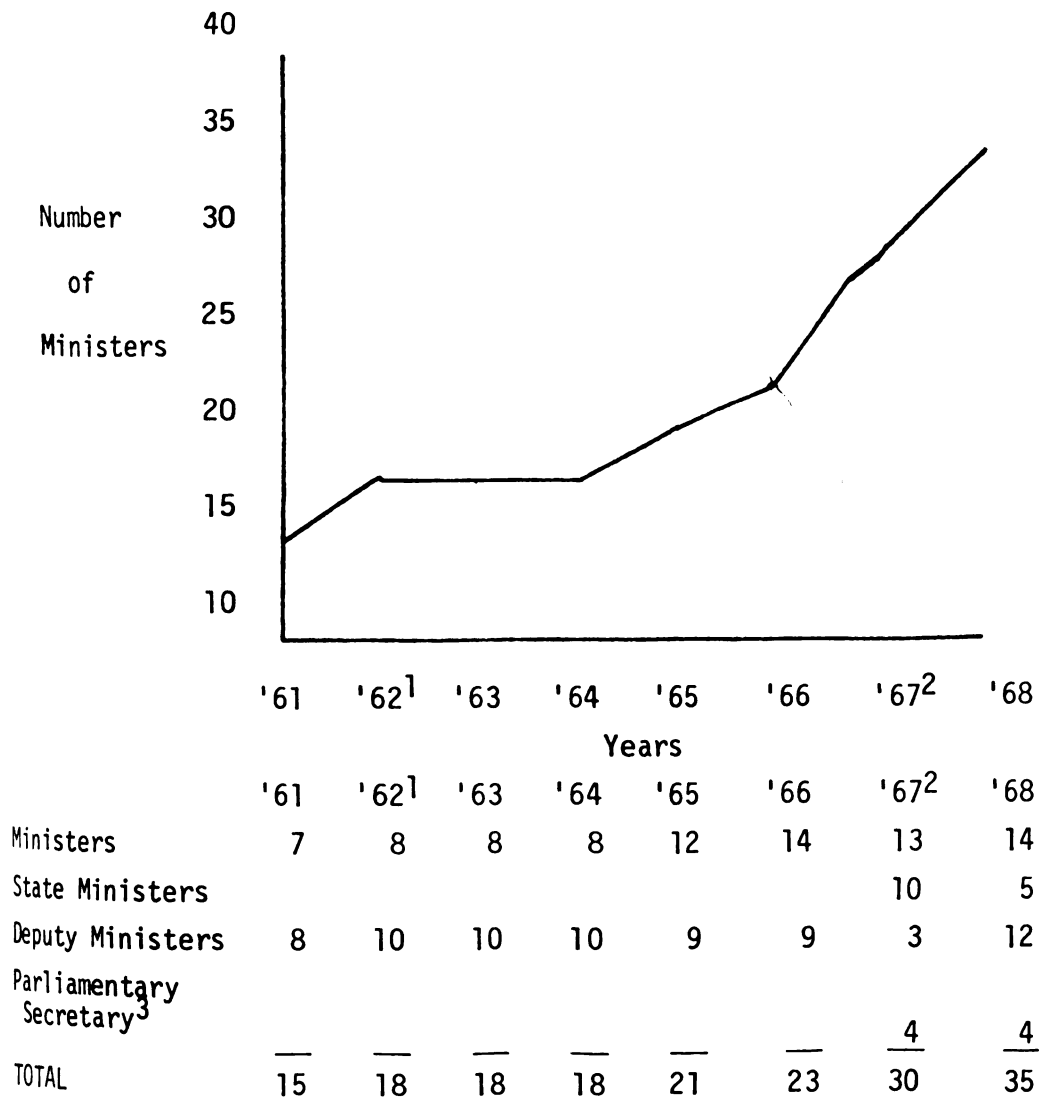
FIGURE 1.4 Cabinet membership in Rajasthan: 1961-1968.

[1] post 1962 General Election

[2] post 1967 General Election

[3] Parliamentary Secretary is not cabinet rank but relevant because it introduces a new regime party leadership position; it was created in 1967 and terminated in 1970 when Parliamentary Secretaries were given Cabinet status.

SOURCE: Rajasthan Yearbooks, 1961, 1962, 1963, 1965, 1969.

Rajasthan disburses large amounts of Rupees through panchayat samitis for village welfare and community development. The purposes of these funds have been stated ambiguously by governmental agencies. Panchayati raj emerged from the community development movement of the early 1950's and its focus has been primarily upon local "welfare." In India, as in other parts of the world, models for the improvement of the quality of life are imprecisely drawn and such funds may be subject to maximum political manipulation particularly if they are highly divisible. If welfare is a strong criterion for panchayati raj funding, however, levels of economic development might be negatively associated with rural development funding change.

The Rajasthan State Electricity Board's guidelines for the allocation of electrification are explicit. Villages with high agricultural potential are at a higher priority than other villages. Two important criteria are 1) proximity to feeder lines and 2) irrigation potential. Only a small percentage of the villages in any Assembly constituency receive electrification in any given time period. If no villages are electrified for a given period, rates of change are undefined. This research attempts to explain the percent of village (or rural) population in a constituency which received electrification from April 1967 through March 1971 as part of the decade of 1961-1971's electrification. This produces a value for each Assembly constituency in Rajasthan, allows for the increased importance of agricultural production as a criterion for electrification, and acknowledges the importance of decentralized information and committees (the District Agricultural Production Committee) in

the distribution process after changes in 1966 and 1969. If agricultural economic factors and political variables are combined for electrification decisions, associations should appear for the data utilized.

The discussion above on agriculture in Rajasthan made a point of focussing upon irrigation as an indicator of agricultural and economic development. In Chapter Two there is a more extended discussion of the appropriateness of reducing a measure of agricultural development to one variable. Here it is assumed that levels of irrigation are an appropriate measure of economic development for rural areas. The first hypothesis can not be stated:

Hypothesis 1.1: there will be a negative association between levels of irrigation and rates of rural development spending;

Hypothesis 1.2: there will be a positive association between levels of irrigation and levels of rural electrification.

Electoral Mobilization Rates and Rural Policy Distribution

Policy decision-makers are said to consider electoral factors in rural policy distribution. Electoral mobilization in Rajasthan has increased since the First General Election in 1952 when only 36.8% of the electorate voted. There was only a slight increase for the Second General Election (1957). Over the next three elections, however, there was a net increase of over twenty percent to 61.3% of the electorate. Electoral mobilization rates, however, are unlikely to be directly associated with rural policy distributions made by regime party decision-makers. While changes in electoral mobilization may be important, of

greater concern is the competitive character of any given set of constituencies. Electoral mobilization rates may be important if there are small differences between the top parties, then even small electoral changes might have an impact on the outcome of an election.

Rural electrification is distributed by the Rajasthan State Electricity Board, as has been made clear previously. Increases in voter turnout (or high positive electoral mobilization rates) may be artifacts of pressures brought to bear on administrators from electoral organizations which can mobilize voters and also direct attention to gaining agricultural resources. The Board's privileged, autonomous position may encourage a reluctance on the part of administrators to accede to political pressures. In fact, there may be an avoidance of pressure by Board administrators. This, however, is highly speculative and not as clearly grounded as the assertion about electoral mobiliza- tion rates and rural development funding rates. Nonetheless, a second hypothesis may be stated:

Hypothesis 2.1: there will be a positive association between electoral mobilization rates and rural development funding rates;

Hypothesis 2.2: there will be a negative association between electoral mobilization rates and rural electrification.

Party Fragmentation and Rural Policy Distribution

Party fragmentation as an indicator of the character of party system cleavages in the constituency is monitored by elected officials for policy distribution decisions. Since 1962, eleven political parties have competed in Rajasthan. Some have died, others have merged and divided to create new

parties. The strongest of these is the Indian National Congress which has controlled the Assembly and major policy decision-making positions since the beginning of electoral politics in 1952. Other strong and competitive parties are the Jana Sangh and the Swatantra Party, formed in 1959, and strong in many regions of the state. Opposition parties have never ruled in the Assembly, but on three occasions they have come close. In 1952, the opposition parties and independent Members received a larger percentage of votes than did the Indian National Congress. Yet the Congress received a majority of seats in the Assembly because only a plurality of votes is necessary to elect a Member and the Congress ran enough candidates to win an Assembly victory. In 1962 a similar set of occurences are observed, but the percentage of voters increases while the number of independent Members and their percentage of the votes declines. The 1967 election provided a severe test for Rajasthan's parliamentary democracy. The combined opposition parties won enough seats to unseat the Indian National Congress. The opposition, at an early point following the elections, had a larger number of seats than did the regime party but a number of these Members were independents and the state Governor would not recognize them as part of the opposition coalition. A stalemate occured with no government and no regime party. There was rioting in Jaipur City (the capitol) and a period of Central rule. The issue was finally resolved when a number of Members returned to the Congress and a government was formed. It was a close call for the regime party and its leadership set about solidifying its position among the electorate. Voters were gathering an awareness of how they might have an impact on the system and began to demand greater levels of policy resources.

The competitiveness of an electoral constituency implied by party
fragmentation, is a crucial factor for the Congress' decisions on policy
distribution. The smaller the differences between competing candidates
and parties, the more likely the regime party will invest resources to
affect the outcome. Party fragmentation may be a key factor in rural
development funding decisions.

Rajasthan State Electricity Board administrators may be less
interested in party fragmentation in a constituency. To administrators
the fragmentation of a constituency might represent a diversity of policy
preferences. There is only the possibility that in the calculation of
implementation costs, the Board administrators may perceive high levels
of party fragmentation in a constituency as significantly contributing
to increasing the total cost of administering electrification.[19] The
fewer the number of political parties and the more solid their support,
the easier the implementation of electrification. The third hypothesis
follows this discussion.

> Hypothesis 3.1: there will be a positive association
>   between party fragmentation and rural
>   development funding rates;
>
> Hypothesis 3.2: there will be a negative association
>   between party fragmentation and rural
>   electrification levels.

Socio-economic Dominance and Rural Policy Distribution

Socio-economic dominance and policy resource distribution has been
rarely investigated in agrarian societies. High socio-economic dominance
is equivalent to patron-client associations mentioned by numerous scholars.
Where economic and social resources are unequally distributed, institutions

develop which place those with few resources in a dependency relationship
with those who have significantly more. Rajasthan's traditional social
and economic systems -- termed _jagirdari_ -- maintained a patron who
controlled the lives of numerous small and landless farmers while provid-
ing protection and many ritual services. While land reform legislation
has passed and the revenue function has been taken away from local
patrons, the distribution of wealth and status in Rajasthan remains
relatively unchanged.[20]

Yet all of Rajasthan is not under the thumb of patrons -- old or new.
The other pole of the socio-economic dominance dimension -- areas with
relative _equality_ in the distributions of wealth and status -- has
received even less systematic attention in agrarian societies. Where
resources are more equally distributed, vertical mobilization patterns or
patron-client associations are less probable. Imbalance of socio-economic
resources underlies most political organization in rural areas. The
higher the degree of concentration of these resources, the more political
and administrative policy decision-making structures are likely to be
approached for policy benefits by patrons at the constituency level. The
character of the demands, however, includes requests for decision-making
authority, on occasion. When voters are mobilized by strong patrons,
party organizations are, nearly always, lined to patron-client associa-
tions. Where patron-client patterns are not so strong, party organizations
probably have a more independent existence of their own.

While the Congress appears to respond to patron influence, the
Rajasthan State Electricity Board is less likely to weaken under requests
for special consideration in electrification decisions. The Board is

autonomous and as a single purpose organization, it is accountable
to no special interest in the state political arena. Where the Board
may prefer homogeneity of preference patterns in a constituency (low
party fragmentation), they are likely to resist strong pressures by
local political leaders. Pressure from patrons in constituencies are
most often perceived as "corrupt," "bribes," and usually involve
requests to compromise some future transaction between the patron and
the Board.

The question may also be asked whether socio-economic dominance
will change the functional relationships predicted in the first three
hypotheses. In some cases, socio-economic dominance may modify the
relationships between other policy environmental factors and rural policy
resource distribution. Economic criteria may be applied more stringently
in rural electrification decisions and less stringently in rural develop-
ment funding decisions where socio-economic dominance is high. There
is also the possibility that the regime party will be more aware of
party fragmentation where socio-economic dominance is high. Party
organizations may be composed of landed patrons who perceive the electoral
system as a means of pressuring the regime party Cabinet for more policy
resources. Socio-economic dominance and rural policy distributions may
now be associated in a fourth major hypothesis.

> Hypothesis 4.1: high socio-economic dominance is
> associated with higher average rural
> development funding rates;
>
> Hypothesis 4.2: high socio-economic dominance is
> associated with lower average levels
> of rural electrification; and,

Hypothesis 4.3: (i) in high socio-economic dominance contexts, the association between rural development funding rates and irrigation becomes less negative,

(ii) in high socio-economic dominance contexts, the association between rural development funding rates and party fragmentation becomes more negative, and

(iii) in high socio-economic dominance contexts, the association between rural electrification and irrigation becomes more negative.

Political Party Dominance and Rural Policy Distribution'

Which political party wins an election in a constituency and sends a Member to the Assembly may have an impact on rural policy distributions. Opposition parties and the regime party compete for resources to win elections. For another north Indian state, Uttar Pradesh, Brass (1965) and Burger (1969) note that opposition parties are not without policy resources, but usually have less access than the regime party. Papachristou (1968) and Narain (1966) observe the predominance of the Indian National Congress in Rajasthan's panchayati raj structures and the regime party's control of policy resources. When the regime party controls patronage resources, one way of viewing rural development funding, it is not likely to allow those resources to help an opposition party or independent candidate. Earlier discussion reminds that political party leaders are rational and seek to maintain their offices and authority. Which party controls a constituency is expected to make a significant difference on the average rates of policy distribution for resources controlled by the regime party.

Political party dominance is likely to make no difference, however, in electrification decisions. After the Chief Minister has appointed the four temporary members of the Rajasthan State Electricity Board there is no direct input from the regime party organization to the Board. Only at the district level in the District Agricultural Production Committee is there formal contact between elected leaders and the Board. Even this contact is modified by the District Collector who chairs the Committee.

As for socio-economic dominance we can inquire whether political party dominance has an impact on the relationships between policy environmental variables and rural policy distributions. Political party dominance will have such an impact on the associations between irrigation levels and rural development funding rates and party fragmentation and rural development funding rates. Because the regime party wishes to defeat the opposition and enhance its majority in the Assembly when the electoral environment is competitive, economic criteria may be applied more stringently to opposition Members' constituencies than to its own Members constituencies. And rural development funding rates may be expected to increase more rapidly as party fragmentation increases in opposition constituencies. A fifth major hypothesis associating political party dominance with rural policy distribution is stated below.

Hypothesis 5.1: regime political party constituencies receive higher average rates of rural development funding than do opposition parties' constituencies;

Hypothesis 5.2: there is no difference between regime political party constituencies and opposition party constituencies on the distribution of rural electrification; and,

<u>Hypothesis 5.3</u>: (i) in opposition party constituencies, the negative association between rural development funding rates and party fragmentation will be stronger than in regime party constituencies.

These five hypotheses may be summarized in the following table. Chapter Two presents the research design and methodology utilized to test hypotheses. Subsequent Chapters Three, Four and Five present the tests of hypotheses; and Chapter Six summarizes the findings.

TABLE 1.1

SUMMARY OF HYPOTHESES

i	X_i	Y_1	Y_2[2]
1.	level of economic development (irrigation percentages)	-	+
2.	electoral mobilization rates		
3.	party fragmentation		

Institutional Factors[3]

i	X_i	Y_i	Y_2	interaction affects[4]
4.	socio-economic dominance	+	0	changes for $Y_1 \cdot X_1$, $Y_1 \cdot X_3$, $Y_2 \cdot X_1$
5.	political party dominance	+	0	changes for $Y_1 \cdot X_1$, $Y_1 \cdot X_3$

[1] Policy environmental factors are measured as metric scales and the signs indicate the association between a dependent variable (Y_1, Y_2) and an independent variable (X_i) controlling for the influence of other independent variables.

[2] Y_1 are rates of rural development funding; Y_2 are levels of rural electrification.

[3] Institutional factors are measured as nominal scales, or qualitative variables and are dichotomous. Socio-economic dominance (X_4) is "high" and "low," political party dominance means either the "regime" party or an "opposition" party controls a constituency. A positive sign (+) means "high socio-economic dominance and high average levels of Y_1," for example.

[4] Institutional factors may modify the associations between the policy environmental factors and rural policy distributions. They are introduced later into regression analyses as "dummy" variables (see Suits, 1957). If there is a significant change in the associations when the dummy variables are introduced, it can be said to be an interaction effect.

FOOTNOTES

[1]The literature on the green revolution is expanding rapdily. The most current statement on the economic impact of high yield variety seeds and supportive inputs is found in Griffin (1974). Nair (1969), Myrdal (1968), Elder (1968), Blair (1971), and Cleaver (1973) among others deal with parts of the analysis. Most often there is no analysis of institutional factors and agricultural development. The Cornell University Rural Local Government Monographs give a descriptive perspective on rural policy and local institutions but without a uniform analytical framework.

[2]Contrary to some opinions, hierarchial models may not produce the "best" solution or the most rapid development. While there is frustration in some quarters about the pace of economic growth, there is no a priori logic compelling for the application of a centralized administrative system in India. Rather a more realistic perspective may be to examine communications networks and the distribution of economic and political resources within a society to determine an appropriate model of administering economic development.

[3]See Wellisz, et al. (1970), Bardhan (1970), Bardhan and Srinivasan (1971), Adams (1970), Hayami and Ruttan (1970), Cigno (1971), Lau and Yotopoulos (1971, 1972), Rao (1971), Mellor and Lele (1972), Gotsch (1972, 1973), de Janvry (1972), The MSU Agricultural Simulation Team (1973), and Srivastava and Heady (1973); a review may be found in Coyer (1974).

[4]There are few theories of policy formation. The early studies of American state comparative policy outputs (Dawson and Robinson, 1963; Dye, 1966; et al.; see Hennessey, 1969, for an epistomelogical critique) assumed the output was the result of some undimensioned process or a "black box." The analysis in this monograph utilizes a theoretical interest in institutional economics. Institutionalization in political science leads back to the foundations of institutional economics and is being carried ahead by Tullock and Buchanan, 1962; Olson, 1965; and others. See Ostrom and Hennessey, 1974, and Schmid, 1975, for contemporary works in the field.

[5]The term "sector" to refer to mobilized members of the society has been used by Ilchman and Uphoff (1969).

[6]For a series of basic articles on process and content in public policy analysis see Ranney (1968).

[7]This is a paraphrase of one definition of "public goods" which has been slightly modified. Bish (1971) summarizes political economy's view of public goods as those which are not diminished by one individual's consumption and where exclusion of potential customers is not feasible. Pauly (1971) analyzes public goods in terms of communities who produce and consume them. What for one community may be a public good is not for another.

[8]This discussion is made convincingly in Cain and Watts (1971) critique of "The Coleman Report" on education.

[9]The focus upon intra-bureaucratic determinants of budget change and policy allocation is found in Sharkansky (1968a) and Lindblom (1953). Also, Wildavsky (1968) and Braybrooke and Lindblom (1963) focus upon intra-bureaucratic politics. There have been no adequate tests of the "incremental hypothesis," as yet.

[10]Curry and Wade (1968) analyze political exchange in a very useful and insightful way. Their application of indifference analysis is an advance over the notion of "utility" which has been an enigma of welfare economics. Much of the political exchange literature, however, including Curry and Wade and Ilchman and Uphoff (1969) ignor the fundamentally political nature of transactions. They involve superiors and inferiors, dominance, or power. We are reminded of that point by Tullock (1965) in his Politics of Bureaucracy. Many times solutions are arrived at because one party can impose it at some point; the notion of total reciprocity in exchange in political analysis seems inappropriate.

[11]See Hennessey and Martin (1973) for a discussion of political organization and the "electoral game." Hennessey and Martin do not, however, discuss the direct implications of this process for policy resource distribution.

[12]Decision-makers' perceptions of institutions and the policy environment are asserted or inferred. Gordon Black (1972), however, has examined legislator's perceptions of their own constituencies as an important variable set for decision-making.

[13]The terms Member and elected official are used synonymously. Member refers to the candidate elected to serve in the legislative Assembly. Assembly refers to the legislature which is part of the analytical framework here. Other legislatures are referred to by their proper names, if necessary.

[14]For excellent theoretical discussions of several types of mobilization systems in the Indian context, see Rudolph and Rudolph (1967) who discuss "horizontal," "vertical," and "differential" mobilization patterns.

[15]This analytic component of the model is suggested by the extensive literature on interparty competition. Unfortunately, there is no unanimity (or even cursory agreement!) on how to measure it in multi-party systems. See Przeworski and Sprague (1971) and Wilcox (1973). This discussion also draws heavily upon Rae and Taylor (1970).

[16]Huntington's understanding of institutionalization relies on the concept of control. His analysis (1965) is normative in the sense that he sees control as necessary to avoid "deinstitutionalization." Here the term is given a more neutral connotation.

[17]See Powell (1970), Scott (1970), Scott (1972), LeMarchand (1972), Silverman (1965), and Weingrod (1968). The literature almost universally ignores the null case or where patron-client pyramids, clusters, or dyadic relationships are less probable given a qualitatively different distribution of socio-economic and ritual resources.

[18]Change in distributional patterns are more likely to be affected by policy environmental factors than levels of allocation. Change in policy distributions and allocations is analyzed only rarely in the policy literature. The notable exception is the literature on the incremental "routine."

[19]Tullock and Buchanan (1962) and Bish (1971) assert that social interaction costs can be minimized by reducing decision-making costs. The fewer actors necessary to make a decision (or agree to a decision), the lower the social interaction costs. Arriving at a solution with greater divergence of opinions is more costly than one with fewer options. The greater the number of parties each with some significant part of the electorate, it is reasoned, the higher the decision-making costs for administrators.

[20]Old Rajasthan's (called Rajputana) revenue systems were abolished in the early 1950's and the revenue function was effectively resumed by the Government of Rajasthan (see Rudolph and Rudolph, 1968). However, while there is land reform legislation, a series of decisions under the title Rajasthan Land Reform and Resumption of Jagirs Acts, there has been no attempt to breakup the effective control of large landholders.

CHAPTER TWO

RURAL PUBLIC POLICY DISTRIBUTION IN RAJASTHAN -- RESEARCH
DESIGN, MEASUREMENT, AND THE
LOGIC OF HYPOTHESIS TESTING

INTRODUCTION

This is an empirical study of rural public policy goods distribution in one Indian state. The question to be answered is how are electoral, socio-economic, and institutional factors associated with the distribution of rural development funds and rural electrification in Rajasthan. Inferences are made about state-level decision-making on the basis of aggregate data collected for a sample of Rajasthan's administrative sub-divisions. Chapter One suggested a number of hypotheses for testing. This Chapter outlines a research design, the operationalization of the major variables, and the logic of hypothesis testing.

RESEARCH DESIGN

A legislative constituency's level of agricultural development, electoral mobilization patterns, party cleavages, the predominance of a landed elite (or the absence thereof), and which political party controls the seat to the Assembly are said to influence decisions on rural public goods distribution. The question to be put here is how do we know? There are at least three important considerations in an answer to this question. First, we can attempt to determine whether other exogenous

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factors might have an impact on the distribution of rural public policy goods. We may control for or randomize these variables. Second, the analysis implies an account for change as an explicit part of the design. Chapter One stated this work focuses on rates of change in rural policy distribution. A third consideration is an appropriate source of data for the testing of hypotheses. A commitment has been made in this work to aggregate data and unobtrusive measures. The question might then be asked whether or not the data utilized best reflect the process examined; appropriate statistical techniques are discussed elsewhere in this chapter.

Most Similar Systems in Rajasthan

This study examines variation in rural public policy distribution in Rajasthan. No comparisons are made to other Indian states. But even in one state there are a large number of variables which might be added to a rural public policy distribution algorithm. These could include rural extension, agricultural research, skill of the farmer, and so on. Some of these cannot be measured here and care has been taken in this work to eliminate the noise-producing effects of as many exogenous variables, as possible. Where variables can not be explicitly measured, other precautions are taken to reduce error and more clearly allow the interpretation of the tests of hypotheses.

Two important exogenous variables which might have an impact on rural policy goods allocation come immediately to mind. The first is the nature of the agricultural productivity system itself. Different types of farming may prevail in any large geographical area. One may, for

example, distinguish between animal-husbandry and small-grain farming.
There may also be variation within each of these types with respect
to what kinds of animals are grown and which food-grains are predominant
in any given region. These factors may have an impact on the rates of
rural development funding and/or electrification policy. A second, and
related factor, is the level of productivity and/or potential
productivity for the agricultural system. Some animal-husbandry areas
may be more productive than others and some small-grain regions may also
be more bountiful than others.

This research's initial phase was to choose districts in Rajasthan
which were as nearly alike on type of agricultural productivity systems
and level of productivity potential. Przeworski and Teune (1970) describe
such a "most similar system" design for the choice of countries in
comparative research:

> Intersystemic similarities and intersystemic differences
> are the focus of the 'most similar systems' design.
> Systems constitute the original level of analysis, and
> within-system variations are explained in terms of
> systematic factors . . . common systemic characteristics
> are conceived of as 'controlled for,' whereas, inter-
> systemic differences are viewed as explanatory variables.
> The number of common characteristics sought is maximal
> and the number of not share characteristics sought,
> minimal. (1970: 33).

The first characteristic for which interdistrict similarities are
sought is the nature of the agricultural productivity system. Only those
districts in Rajasthan which produce the same type of crops and have the
same climatic and agricultural features are considered. Rajasthan can
be divided into four climatic and agricultural zones. The "dry" desert
region of the north and west includes the territory from Ganganagar to
Jalore on the south. Rajasthan's remaining districts are relatively wet

and more similar. These are the "eastern plains" from Jhunjhunu to Ajmer and Tonk; the "southern plauteau" including districts Bundi and Kota; and the "southern highlands" from Bhilwara to Banswara. These regional areas of Rajasthan are shown below.

Because of the similarities among the "eastern plains," "southern plateau," and "southern highland" regions, districts from these regions are included in the study, as follows:

1.	Ajmer	8.	Jhunjhunu
2.	Alwar	9.	Kota
3.	Bharatpur	10.	Nagaur
4.	Bhilwara	11.	Sawai Madhopur
5.	Bundi	12.	Sikar
6.	Ganganagar	13.	Tonk
7.	Jaipur	14.	Udaipur.

These are fourteen (14) of the total twenty-six (26) districts in Rajasthan. These are predominantly wheat growing areas within which agricultural techniques are similar.[1]

The second exogenous factor for which control is applied is the agricultural productivity potential of the regions under consideration. Given that all of the Rajasthan sample districts have essentially the same cropping patterns, it is helpful to provide some evidence that the sample districts, as a whole, differ significantly from those excluded from the sample. One Indian agricultural economist, P. S. Sharma (1964), has ranked Rajasthan's districts with respect to productivity and potential. Using Sharma's "rankpotential index" and applying

MAP 3
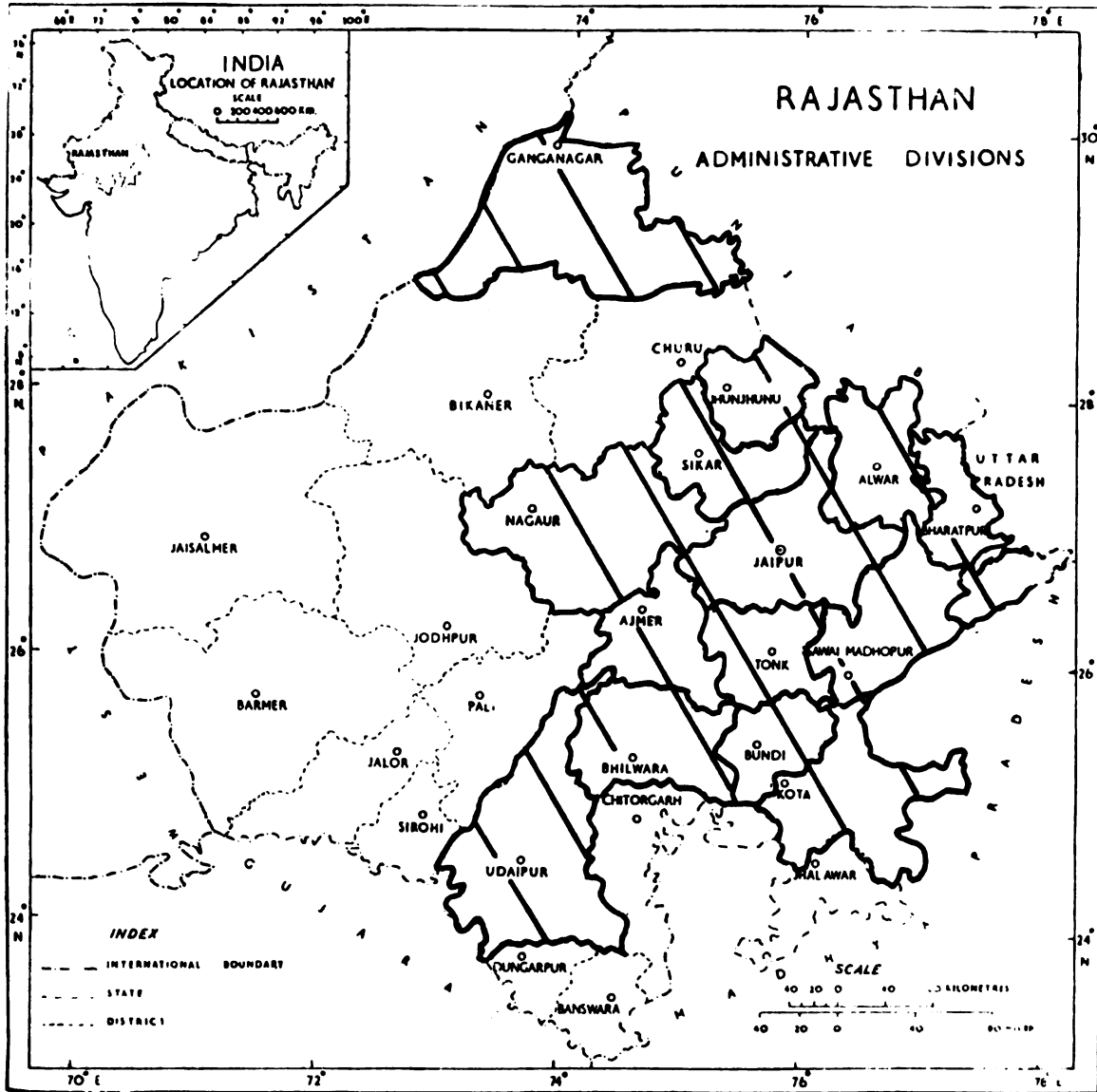
Based upon Survey of India map with the permission of the Surveyor General of India. © Government of India Copyright, 1962.
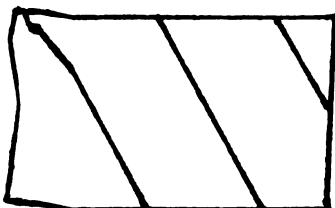
fourteen sample districts

a Mann-Whitney U test, it can be asserted that the fourteen sample districts have significantly more agricultural development potential than the remaining twelve districts in Rajasthan.[2] This leads to the conclusion that the noise-creating effect of agricultural productivity potential might be reduced.

The fourteen districts which have been chosen for this research are similar with respect to the nature of their agricultural productivity system outputs and they all produce small grains and predominantly wheat. They also have more productivity potential than those districts which have been excluded from the sample.

The Analysis of Change

In addition to controlling for exogenous variables, this research design accounts for time. The design incorporates, to the extent possible, a means by which hypotheses stated in terms of change might be tested. Herbert Jacob and Kenneth Vines' epilogue to Politics in the American States (1971) accurately appraises much of the comparative public policy literature with respect to data and measurement:

> Data used are cross-sectional, representing one point
> of time rather than longitudinal, representing observa-
> tions over many points of time. Present findings make
> the need for the analysis of time series obvious. (1971:
> 560).

While the models and hypotheses attempt to explain change, data and methods tend to reflect synchronic processes. J. S. Coleman (1969) notes that the use of cross-sectional data at one point in time assumes:

> either implicityly or explicitly, that the causal
> processes have resulted in a equilibrium state . . .
> (T)he implicit assumption in regression analysis is
> that this is a stable relationship, which would give

the same values for the regression coefficients in a
later cross-section unless an exogenous factor disturbed
the situation. (1969: 444).

Since this study deals with a country (India) and a state (Rajasthan) for which accurate time series data for sub-district units are largely unavailable, care has been taken to examine the underlying time assumptions in each variable. A minimal requirement for this study is that one dependent variable and one independent variable be amenable to measurement at more than one point in time. Other factors for which there is less change variation over time may be measured at one time point. Unless there are drastic institutional changes, e.g. revolution or civil war, the relationships of farmers to landlords and the distribution of land change quite slowly. In addition, the basic constitutional rules of a system change less frequently. In short, the admonition is to measure that which changes as a function of more than one point in time while it is permissible to treat relatively static variables as measureable at one point in time.

It is asserted for this study in Chapter One that change in one electoral variable -- electoral mobilization -- is associated with rural public policy distributions. Electoral variables then should be measured for at least two time points and, if the dependent variable is defined in terms of change, rural public policy distribution might be measured at two time points, as well. Because it is hypothesized that electoral factors effect rural public policy distribution change, the first electoral time point should precede the first public policy distribution time point and the second electoral time point should precede the second public policy distribution time point. If the data are so arranged and collected, changes in electoral variables may be said to be antecedent to changes in rural public policy distribution.

In Rajasthan the Third General Election (1962) is the first electoral time point and the combined budget years of 1963-64 and 1964-65 are the first rural public policy funding time period. The second electoral time point is the Fourth General Election (1967) and the corresponding rural public policy funding distribution period is the combined budget years 1968-69 and 1969-70. Rural electrification of villages creates special measurement problems which are dealt with below. It may be said that rural electrification is measured to allow the interpretation of the impact of electoral variables upon its distribution.

Level of Analysis: The Legislative Constituency

This analysis is concerned with how policy decision-makers utilize knowledge of the political and economic environments in distributing scarce rural public policy goods. Inferences are made about state policy outputs on the basis of information obtained from the legislative constituency and other approximately congruent administrative units. The assertion that data obtained from legislative constituency-level units can be associated with policy goods distribution is new in the study of Indian public policy. Macro-studies of Indian political behavior based upon aggregate data use the district as a data base because of the ease of collection and the potential of conducting all-India, cross-state research. Government documents, reporting policy, electoral and census information, are accessible readily for the district. A second level of analysis, the village, has been utilized for some aggregate data studies, as well.[3] Because of the lack of data and/or interest, few scholars have attempted to collect policy relevant data for units equivalent to the legislative constituency.

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The legislative constituency, however, is the most appropriate unit of study for a state-level explanation of rural policy distribution. The legislative constituency is the base for which a Member of the Assembly is chosen. Because the Member may transmit demands from constituents or important local organizations, a seat in the Assembly is a coveted position. Nominations by political parties are sensitive to pressure from important local-level political actors, as well. If the Member is from the dominant political party in Rajasthan, the Indian National Congress (INC), he may formulate or effect policies in state government which have an impact on his constituency and the constituencies of rivals and Members of their factions. From the perspective of representation, policy-making, and prestige, the legislative constituency is a critical electoral unit.

The choice of the legislative constituency raises data gathering constraints, however. Because the relevant local-level political and administrative units in question -- the <u>panchayat samiti, tehsil</u>, and constituency -- are not entirely congruent, there are fittings to be performed before testing hypotheses. The selection of the data starts by choosing the legislative constituency and averages the values of the variables for <u>tehsils</u> and <u>panchayat samitis</u> across the constituency.[4]

This method requires that sample constituencies have the same boundaries over time. Legislative constituencies in Rajasthan vary in size and boundaries across units and over time. Reapportionment creates new constituencies, and, occasionally, eliminates them. The Indian electoral system has also a system of reserved constituencies. Until 1962, there were double-member constituencies from which one member of a scheduled caste or scheduled tribe was elected

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along with another member from the remainder of the communities or castes in the constituency.[5] The participating electorate voted for two candidates, one on each list. For the Third General Elections (1962) double-member constituencies were eliminated. In their place, reserved constituencies were created in 1962 with large percentages of scheduled caste or schedule tribe population. From a reserved constituency only members of the scheduled caste or scheduled tribe may be nominated for the Assembly position. Voting participation in these constituencies has been consistently lower than in other regular constituencies.[6] In addition, nominations have tended to be dictated by state-level party leaders rather than emerge from candidates relative support positions in the constituency.[7]

Because only those constituencies with the same boundaries over time could be chosen, some of the possible legislative constituencies within the sample districts had to be eliminated. From the potential 124 constituency units delimited in the 1962 and 1967 electoral statutes for the fourteen district groups; sixty-four (64) are chosen as the sample for the tests of hypotheses. The boundaries of these constituencies remained the same for the period of 1962 through 1971.[8] Data for the Third and Fourth General Elections (1962 and 1967) can be utilized for these constituencies. There is no reason to believe that a bias has been introduced into the analysis by selecting constituencies on this basis. The sample approximates the population on important variables such as percent voting, percent voting for political parties, distribution of regular and scheduled seats, and so on.

The method of averaging depends also on the consistent application of techniques for combining non-constituency units which are not exactly congruent with the constituency. Legislative constituencies are defined with reference

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to tehsil and village boundaries. In most cases tehsils and legislative constituencies are congruent. In a number of other cases tehsils overlap the constituencies. Of the total number of sample constituencies (64) there are several cases in which there are multiple tehsils for one constituency. Of these cases, there are numerous for which one of the tehsils is wholly contained in the constituency and one or two tehsils overlap. A similar situation exists in the relationship between the constituency and the panchayat samiti. A number of constituencies contain panchayat samitis within them and have one or two panchayat samitis which overlap.

The assignment of a variable value taken from tehsil or panchayat samiti data is accomplished by first determining whether or not there are overlapping tehsils or panchayat samitis on the constituency. For cases in which there are no overlapping tehsils or panchayat samitis, the value for the variable is recorded without further calculation. In those cases where two or more tehsils or panchayat samitis either are contained within or overlap the constituency, the variable is calculated as an average for the tehsils or panchayat samitis. Previous research using district level data for India show there is no significant difference for results which utilize a similar technique as compared to a method which disaggregates and regroups areas to make all data reporting units congruent.[9] While a regrouping technique is feasible at India's district level, it is prohibitive at the sub-district level. Table 2.1 names all of the sample constituencies for this study and indicates the districts within which they are contained. Appendix I at the end of this monograph gives the names of all tehsils and panchayat samitis which have been grouped to obtain values for the important variables in the study. The discussion now turns to the measurement of the major variables.

TABLE 2.1

SAMPLE DISTRICTS AND CONSTITUENCIES

DISTRICT/Constituency

JHUNJHUNU

Pilani
Khetri
Gudha
Nawalgarh
Jhunjhunu
Mandawa
Surajgarh

SIKAR

Fatehpur
Singrawat
Danta-Ramgarh
Sri Madhopur
Neem-ka-Thana
Lachhmangarh

JAIPUR

Amber
Phulera
Dudu
Bandikui
Bairath
Kotputli
Phagi
Lalsot
Sikrai
Chomu
Bassi
Dausa
Jamwa-Ramgarh

DISTRICT/Constituency

BHARATPUR

Kaman
Deeg
Bharatpur
Weir
Bayana
Rajakhera
Dholpur
Nadbai
Bari

SAWAI MADHOPUR

Karauli
Mahuwa
Gangapur
Sawai Madhopur
Hindaun
Malarna Chour/Bamanwas
Khandar
Nadoti/Todabhim

TONK

Uniara
Malpura
Newai

AJMER

Kishangarh
Nasirabad
Pubhkar
Beawar
Masuda
Bhinai

TABLE 2.1
(Continued)

SAMPLE DISTRICTS AND CONSTITUENCIES

DISTRICT/Constituency   DISTRICT/Constituency

ALWAR   **BUNDI**

    Ramgarh   Bundi
    Thanagazi   Hindoli
    Rajgarh
    Kathuman
    Tijara   **BHILWARA**

KOTA   Mandal
    Bhilwara
    Digod   Mandalgarh
    Chabbra   Banera
    Ramganj Mandi   Asind
    Pipalda   Sahada
    Jahazpur

UDAIPUR
GANGANAGAR

    Mavli
    Nathdwara   Karanpur
    Kumbhalgarh   Ganganagar
    Bhim   Suratgarh
    Gogunda   Hanumangarh
    Phalasia   Nohar
    Sarada
    Lasadia
    Salumber   **NAGAUR**
    Rajsamand
    Nagaur
    Jayal
    Ladnu
    Deedwana
    Nawan
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    Merta
    Parbatsar

OPERATIONALIZATION OF THE MAJOR VARIABLES

Rural public policy goods distribution is attributed to political system characteristics, socio-political institutional factors and the level of agricultural development. These variables have been described in Chapter One. Here the discussion turns to measurement.

The Dependent Variables

The distributions of two rural public policy goods, important to agricultural productivity in Rajasthan, have been chosen as dependent variables. They are 1) the rate of change in the disbursement of rural development funds to the panchayat samiti; and, 2) the electrification of villages reported at the tehsil level in Rajasthan. The first dependent variable includes change by definition. Because only ten years of data are avaiable, time series analysis is impossible. Change, therefore, has been included in the measurement definition of the dependent variable dealing with rural funding. This is theoretically appropriate because change in funding is more likely to be related to political and electoral character- istics than might the total amount of funding in any given period. Change in electrification of villages in any given tehsil is more difficult to measure because Rajasthan's electrification programs do not provide electri- city connections to every tehsil for the time period under consideration. This issue is discussed below in the section on rural electrification as a dependent variable.

Rural Development Funding Rates. State-level development organizations disburse funds to panchayat samitis for programs administered at the local- level. These funds are for education, agricultural development, and community

welfare. The funds are disbursed in the forms of grants and loans. There is little accountability for the monies which are disbursed and, in practice, some money for loans may not be repaid. There is no clear picture, however, of the magnitude of unrepaid loans. In this analysis, all development funding, whether for agricultural development or education, is combined into one amount for the purposes of measuring the rates of change in development funding at the panchayat samiti level. The first dependent variable is defined as a first difference equation. It is the per capita amount of funds disbursed for the period 1969 plus 1970 (TOT70) minus the per capita amount for 1964 plus 1965 (TOT65) divided by TOT65. This translates into a simple equation:

$$Y_1 = \frac{TOT70 - TOT65}{TOT65} \; ; \text{ where,}$$

Y_1 = the rate of rural development funding;

TOT70 = the total per capita amount disbursed to a panchayat samiti for the combined budget years of 1968-69 and 1969-70; and

TOT65 = the total per capita amount disbursed to a panchayat samiti for the combined budget years of 1963-64 and 1964-65.

Accurate rural development funding data for each panchayat samiti for each year are difficult to obtain. All years from 1961-62 through 1970-71 were collected for the sample units and a second collection, to insure accuracy, for 1963-64, 1964-65, and 1968-69 and 1969-70 was conducted with the assistance of the Development Department of Rajasthan's Ministry of Agriculture.[10]

Rural Electrification. The second dependent variable is the distribu-
tion of rural electrification. Only that part of the rural electrification
program which brings electrical connections into tehsils and villages is
included in this variable. The discussion turns on the distinction between
electrification access which can be provided by a public agency, the
Rajasthan State Electricity Board (RSEB), and electricity itself which is
provided largely when an individual farmer has sufficient resources to obtain
a connection. Other governmental agencies, i.e., credit, may be in a position
to assist the individual farmer to obtain a connection. But our concern is
not with credit institutions; rather we are concerned with the distribution
of electrification to villages which are aggregated at the tehsil unit. As
stated before, the tehsil is equivalent to the legislative constituency and
in cases where there is overlap the averaging technique is applied.

The distribution of rural electrification is measured by first determining
the total rural population given access to electrification from 1961 through
April 1971. The proportion of the total rural population gaining access to
electrification facilities from March 1967 through April 1971 is the second
dependent variable. Hereafter, this variable is referred to as rural
electrification and is represented symbolically as Y_2. This time period is
chosen so that an association between electrification and electoral variables
defined for 1967 and as a rate of change for 1962 and 1967 can be tested.
It is reasoned that if electoral factors have an impact on electrification,
the relationship is more likely to appear after a critical election when
decision-makers may pursue an "electoral strategy." It might be preferable to
measure electrification as a rate or as a first difference equation, as has

been defined for rural development funding. However, there are many tehsils
for which there are no villages with access to electrification for the period
from 1962 through 1966, or the period following the Third General Election.
Values for a first difference equation with zero as a denominator are
difficult to interpret.

Rural electrification data are obtained from the records of the Rajasthan
State Electricity Board which maintains records of villages with access to
electrification. These villages are grouped by tehsil; the villages' popula-
tions are determined from the District Census Handbook of the Census of India,
1961, and the percentages of the rural population with access to electrification
is computed.

The Independent Variables

There are three sets of endogenous, independent variables. These variables
comprise a partial model of factors which influence the distribution of rural
public policy goods. These are sets of variables which 1) describe the
potential for agricultural growth based upon an understanding of the agricultural
production process, 2) indicate short-term electoral factors important to
elected and non-elected policy-makers, and 3) include socio-political institu-
tional factors which may set the boundaries for public policy goods alloca-
tion.

Conceptualizing Agricultural Development

The section above which outlined a "most similar systems" research design
included two exogenous variables: the type of agricultural productivity
system and the overall level of agricultural development potential for the

sample districts. It was concluded that the sample districts and constitu-encies were all sufficiently similar to assume the effects of the variables were controlled. Within that sample, however, there may be variation on other important factors considered by policy-makers who distribute rural public policy goods. These factors become part of the policy-maker's decision model and are considered here. It is one thing to distinguish between animal-husbandry and small-grain farming and conclude that those small-grain districts chosen have more potential than the animal-husbandry districts. It is quite another to say that there if variation <u>within</u> small-grain districts on their productivity potential.[11]

Socio-economic development at the sub-district or constituency level in India is a complex phenomenon and has rarely been quantified. There are measures for district-level socio-economic development, however. Adams and Bumb's (1973) factor analysis of Rajasthan's twenty-six (26) districts defines four dimensions of rural development. For one of those dimensions, agricultural development, agricultural productivity, fertilizer use, irrigation development, and scheduled caste population are the strongest variables. Benjamin and Blue (1969) and Morris-Jones (1969) also conceptu-alize district-level modernization and measure it largely as a function of urbanization and literacy.

Agricultural production depends upon seeds, fertilizers, water, equip-ment, and skill. These factors are interrelated and must be coordinated to grow small-grains. Ideally, agricultural development might be conceived as having at least two dimensions. The first reflects the <u>availability</u> of sufficient quantities of the material resources and skills necessary to grow grains. The second concerns the <u>distribution</u> of these resources among

farmers who grow grains. Agricultural development potential, as it is
conceived here, means the former. This variable isolates only the material
goods available from growing small-grains. The distribution of resources
is considered as an institutional factor and is discussed below in another
section of this Chapter. The availability of material resources and skill
and the distribution of these resources are related, but for the purposes
of analysis the two variables are separated.

If a decision is made by a government and a set of important farmers
to develop small-grain farming based upon water availability, irrigation
becomes a basic and critical factor in agricultural productivity. Because
the Government of Rajasthan pursues a strategy associated with the Green
Revolution, i.e., to distribute high yield variety seeds and chemical
fertilizers, water is an essential and critical ingredient for success. In
planning terms, where there is less water availability, there is less
compelling reason for the investment of money for rural development projects
or for rural electrification. The Adams and Bumb (1973) factor analysis
reflects this pattern. Agricultural productivity is higher with higher
levels of irrigation facilities. Irrigation facilities are highly correlated
with fertilizer use, as well. In the absence of reliable data on agricultural
productivity or fertilizer usage at the constituency (sub-district) level,
one can turn to data maintained by the Rajasthan Land Revenue Board for
irrigation at the constituency level.

When this analysis discusses agricultural development levels among the
sample constituencies, the empirical reference is to the net percent of the
cropped land with irrigation facilities. Hereafter, this variable is referred
to as irrigation and is represented symbolically as X_1.

The net percent of cropped land includes those acres which are double-cropped. If an acreage is double-cropped, it is counted twice in the value.

The Electoral Environment

Electoral variables are hypothesized to be associated with the distribution of rural public policy goods. There is an assumption that policy makers in Rajasthan perceive the electoral environment as a source of information about the political consequences of agricultural policy outputs. It is observed by Kothari (1970) and Brass (1965) for India, generally, that voters are capable of assessing the actions of government in a self-interested way. Rajasthan's voters appear to be no different than their compatriots in other Indian states. Verma, et al. (1967), Papichristou (1968) and my own interviews with farmers and politicians attest to the rationality of the "average" voter.[12] There may be a change among Rajasthan's voters toward a more critical appraisal of governmental policy in agriculture as the advantages of scientific farming are more visible. Whether decision-makers perceive votes to be demands or supports, at the very least, election results serve as a barometer on policy performance. Electoral results may be modified by institutional factors, however, and this possibility is discussed theoretically in Chapter One.

Electoral mobilization rates (turnout) and party fragmentation are operationalized as measures of the electoral environment associated with rural public policy allocation. What follows is a description of how each of these variables is measured for the Rajasthan electoral data.

Electoral Mobilization Rates. The first electoral variable is based on the percentage who vote (turnout) in the Third and Fourth (1962 and 1967)
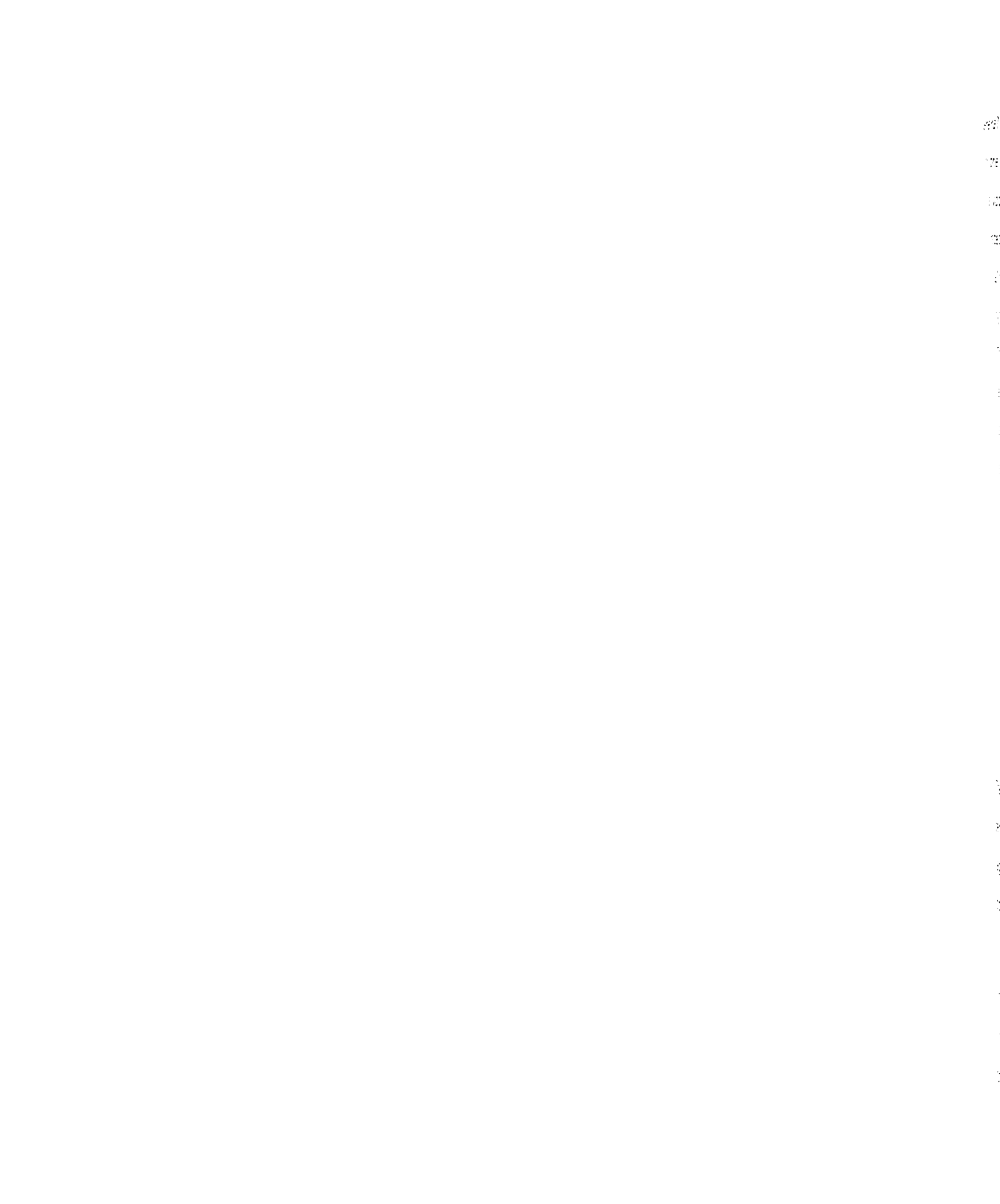
General Elections. As mentioned in Chapter One, there is a general increase in the percentage of voting participation. A higher percentage of persons is voting in each of the elections since 1952.[13] Electoral mobilization rates are measured for the Third and Fourth General Elections and are calculated as a first difference equation. Rates of change in voting are hypothesized to be associated with rural public policy goods allocation. These change rates are defined as the difference between the voting percentages in the Third and Fourth General Elections divided by the voting percentage in the Third General Election. This may be expressed in the following algebraic form:

$$X_2 = \frac{VTP67 - VTP62}{VTP62,} \text{ where}$$

X_2 = electoral mobilization rates;

VTP67 = the percent of the electorate voting in the Fourth General Election (1967); and,

VTP62 = the percent of the electorate voting in the Third General Election (1962).

The higher the numerical value, the higher the rate of change. Where voting percentages declined in 1967 from 1962, the rate would be expressed as a negative number; positive rates indicate increases in the percentages of those voting for 1967.

Party Fragmentation. Policy decision-makers may be interested in the number of political parties competing in a constituency and the percentages of voters who support those parties. Rajasthan's political party system includes several party organizations including the Indian National Congress,

the Swatantra Party, the Jana Sangh, and others. If the system had only two parties, it might be sufficient to measure the percentage difference between the two parties -- perhaps as a function of the rate of increase or decrease in electoral mobilization. However, with more than two parties competing in many constituencies a summary measure of the cleavages between parties is necessary. Party cleavages in an election preceeding policy decision may have an impact on those allocation decisions. The character of political party cleavages in Rajasthan's constituencies for the Fourth General Election should be associated with rural public policy distribution decisions for 1967 and 1971. And, so, party cleavages for the Fourth General election are those measured.

There has been considerable experimentation toward finding an appropriate measure of party cleavages and/or interparty competition at the constituency level in multiparty systems.[14] An adequate measure for this study would reflect the proportion of voters in a constituency who are divided by political party. If the community of voters is conceived as a set of individuals and political parties bring individuals together in paris, then some measure which relates the total number of pairs of individuals supporting different parties as a fraction of the total number of pairs of voters in the constituency would be appropriate as a measure of party cleavages.

Rae and Taylor's (1970) measure of fragmentation is such a measure. Rae and Taylor assume nominal groups (or for this case, political parties -- voters casting votes for party candidates) and the fragmentation index is constructed as follows:

$$X_3 = F = \frac{\text{number of mixed pairs of individuals}}{\text{total number of pairs of individuals}}; \text{ where,}$$

the total number of pairs $= \binom{N}{2} = {}^1\!/_2 \, (N(N-1))$;

the number of mixed pairs is

$$U = \sum_{i,j=1}^{n} (f_i \cdot f_j); \text{ and}$$

$$F = \frac{2}{(N(N-1))} \sum_{i,j=1}^{n} (f_i \cdot f_j);$$

$$(j \neq i)$$

Where,

X_3 = party fragmentation;

N = the number of persons voting;

f_i = the proportion of the voting electorate choosing the 'i'th political party;

f_j = the proportion of the voting electorate choosing the 'j'th political party; and,

n = the number of political parties.

It has been suggested that the measure of fragmentation developed by Rae and Taylor distrots by overweighting constituencies with splinter parties, i.e., higher fragmentation scores are reported when some very small party may not actually have an impact on the electoral results.

The range of values for party fragmentation (F) is 0.00 to 1.00. The higher the value of the index, the greater the fragmentation. In other terms, the higher the numerical value of F, the higher the proportion of the voting electorate which is divided by political party cleavages.

Institutional Factors

Institutional arrangements, particularly those at the constituency level, are hypothesized to have an independent effect on the distribution of rural public policy goods. These institutional factors are dominance by a landed elite and which political party wins, and is able to control, the seat to the Assembly.

Socio-economic Dominance. Land, labor, and the cohesiveness of the socio-political organizations are intrinsically part of the political process in agrarian societies. The archetypal agrarian political system -- the patron-client association -- is based upon inequalities in resource distribution and face to face interaction between landed, aristocratic elite and their vassals. The Indian variation of this system is based upon much the same set of factors.

Two factors emerge from a description of socio-political patterns in rural India (see Chapter One and Four for a more extensive discussion): the inequality of land distribution and the ready supply of low status persons for agricultural labor and political support. Where one finds a high level of resource distribution inequality along with large quantities of economically deprived labor force, the potential for political dominance is great. The converse is true as well.

The first measurement concern is specifying variables to rank each constituency on the potential for dominance by a landed elite. To do this, an index of socio-economic dominance is created by combining a coefficient of land distribution inequality (a Gini coefficient) with the percentage of

scheduled caste populations. There have been several approaches to measurement of social and economic dominance using aggregate data indicators in the Indian context. Zagoria (1971) and Adams and Bumb (1973) use concepts based on the percentage of households owned or rented as an indicator. Elkins (1972) has developed a "hardy peasant" index to measure the concentration of social and economic power at the regional level in southern Indian districts.

Land distribution used to calculate Gini is reported in the District Census Handbook for the Census of India, 1961 for a twenty percent (20%) sample of households. Percentages of scheduled castes and scheduled tribes are also reported in the District Census Handbook and each tehsil. The concentration of land and the control of landed peasants over scheduled caste labor are conditions that may be conducive to rural investment and technical change and are clearly important as independent variables.

A Gini coefficient is calculated multiplying the mid-point of each interval by the number of cases and summing the products to determine the total land in the twenty percent (20%) sample. Next, the cumulative percent of land held by the cumulative percent of households in graphed to produce a Lorenz curve. The Gini coefficient is the area between the curve and a line of perfect inequality multiplied by two. Alker (1965) describes Gini and Benson (1969) provides a convenient calculational tool which is easily programmed for the computer. A Gini coefficient is computed for each political unit.

The logic of the combination of Gini and the percent of scheduled castes is straightforward. The percent of scheduled caste population in a

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political unit approximates the percent of the population available to be dominated by a political, economic and/or social elite. The degree to which they are manipulable may be a function of the inequality of land distribution. Gini, as described here, has a relatively low variance, but a rather considerable range suggesting many cases in the middle and several extreme cases. This may be a reason to reject Gini as an explanatory variable. The compelling nature of the variable rather than its statistical qualities urge, however, that the variable be retained in the analysis. In order to create a more normal variation, a standard score is computed for Gini which is combined with the percent of scheduled castes.[15] The index of socio-economic dominance is equal to the percentage of scheduled castes plus the standard score for land distribution inequality divided by two. The index has the properties of near normal distribution and possible range from 0.00 to 100.00. It should be interpreted that scores closer to 100.00 are high on socio-economic dominance and those scores closer to 0.00 are low on socio-economic dominance.[16]

The purpose of the index of socio-economic dominance is to discriminate between constituencies which have great potential for elite domination on one end of the scale and those which are less likely to be dominated by a landed elite on the other. The nondominance end could be egalitarian as it is characterized by relative equality of land distribution (in the Rajasthan context) and low percentages of scheduled castes.

Party dominance. One simple hypothesis about the rates of policy distribution is that the regime party tends to help its own members. That is, if a constituency has a member of the regime party, all considerations equal,

it will award policy goods to that constituency rather than one of the opposition party because parties which govern seek first to maintain or gain power. In order to add this factor to the analysis a nominal scale for party dominance is included. A constituency is considered to be part of the regime party apparatus if the constituency's Member is consistently of the regime party. Any constituency where a legislator has either defected to or from the dominant party is excluded from this regime party list. Party dominance is determined for the period from the Fourth General Election through April, 1971.[17]

A LOGIC OF HYPOTHESIS TESTING

One important consideration in research design is the use of appropriate statistical tools in hypothesis testing. Often multivariate public policy studies have utilized partial correlational techniques to link policy outputs with political and economic factors. A focus upon standardized coefficients rather than unstandardized coefficients eliminates the possibility of decision-makers proposing meaningful changes in independent variables to produce a policy outcome. A sample beta does little for the policy analyst whose goal is a policy outcome change in a proscribed direction; it tells him only that an independent variable makes an independent contribution to an explanation of variance in the dependent variable. A focus upon metric coefficients might aid the policy maker in changing the direction or level of performance in a way which fulfills his own goals. To date, policy analysis has few variables appropriate for direct applicability. The policy analyst can say little about which political and institutional variables produce concomitant change in policy outcomes. This study takes only a small step in the application of metric and unstandardized coefficients to policy analysis.[18]

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Chapter One presents several hypotheses which may be tested within the contexts of this analysis. Hypotheses One, Two, and Three concern the relationships between economic and political environmental factors and rural policy goods distribution. Hypothesis Four concerns average levels of rural public policy goods allocation and the functional relationships between policy variables and independent environmental variables controlling for socio-economic dominance. Hypothesis Five concerns average levels of rural policy goods distribution and the functional relationships between policy variables and independent environmental variables controlling for a second institutional factor, political party dominance. Each institutional variable -- political party dominance and socio-economic dominance -- is dichotomized.

A method suited to this problem of analysis combining nominal scales and interval scales while testing for the significance of intercepts and slopes is the analysis of covariance. Rao and Miller (1971), Blalock (1972), Johnston (1972), Kmenta (1971) and others discuss covariance analysis. An important feature of covariance analysis is that nominal scales may be introduced into regression analyses theough the use of dummy variables. Daniel Suits (1957) clarifies the use of dummy variables in regression analysis. Analysis of covariance techniques allow for the tests of significance of both intercepts and slopes. Most statistical packages for computers which include regression analyses may be adopted for the use of dummy variables and covariance techniques.

The tests of hypotheses proceeds by first considering the bivariate equations relating one independent variable to one dependent variable. The equation takes the following form:

$Y_i = a + bX_k$; where,

i is a subscript for a dependent variable; and,

k is a subscript for an independent variable.

Hypotheses One, Two and Three are tested using this equation. However, because there may be multicollinearity in the relationships between independent variables, the full multiple regression equation is estimated in the following form:

$$Y_i = a + b_1X_1 + b_2X_2 + b_3X_3;$$ where,

i is a subscript for a dependent variable;

X_1 = irrigation percentages;

X_2 = electoral mobilization rates; and,

X_3 = party fragmentation.

Hypothesis Four is tested in a straightforward application of covariance techniques. Socio-economic dominance is introduced into the regression equation as a dummy variable along with an interaction term for each independent variable and each dependent variable:

$$Y_i = a + b_1X_k + b_2X_5 + b_3(X_k*X_5);$$ where

i is a subscript for a dependent variable;

k is a subscript for an independent variable;

X_5 = 1, when socio-economic dominance is low
    in a constituency, 0 otherwise; and

(X_k*X_5) are interaction terms.

The interested reader may consult Suits (1957) to determine why only one of the levels of the nominal scale is included in the equation. If both had been

included, the solution would have been indeterminate. For high socio-economic dominance constituencies, the intercept is the set of (a); for low socio-economic dominance constituencies, the intercept is the set of $(a + b_2)$. The slopes for high socio-economic dominance constituencies are the set of (b_1) and for low socio-economic dominance constitutencies, the slopes are the set of $(b_1 + b_3)$.[19]

Hypothesis Five is tested in a manner identical to that described above. The dummy variables entered into the equation are for regime and opposition party dominance. These variables are:

$X_6 = 1$, where the regime (INC) party is in

power, 0 otherwise; and,

$X_7 = 1$, where the opposition is in power; 0

otherwise.

Hypotheses Four and Five contribute variables to the overall solution of the goodness-of-fit for the model. Where interaction terms are significant, they may be included in the model which attempts to explain the variance in policy allocations. As for the other parameters in the model, a test of significance can be applied to each increment in the coefficient of multiple determination (R^2).

Finally, in an effort to weight the overall validity of the model presented in Chapter One and expanded in subsequent chapters, all terms are included in one linear regression model. The equation takes the following general form:

$$Y_i = a + b_j X_k + b_1 X_5 + b_2 X_7 + b_m (X_k * X_5) +$$
$$b_n (X_k * X_7); \text{ where,}$$

i = a subscript for a dependent variable;

k is a subscript for independent variables;

j is a set of metric coefficients for k
   variables with i variables;

X_5 = 1, where there is low socio-economic
   dominance in a constituency; 0 otherwise;

X_7 = 1, where the opposition party is in control
   of a constituency; 0 otherwise;

(X_k*X_5) are interaction terms for socio-economic
   dominance;

(X_k*X_7) are interaction terms for political
   party dominace;

m is a set of metric coefficients for socio-
   economic dominance interaction terms; and,

n is a set of metric coefficients for political
   party dominance.

Each chapter briefly discusses the appropriate equations being estimated and presents the intercepts and slopes of interest. In the next chapter, we turn to the examination of rural policy allocation and economic and electoral environmental variables.

FOOTNOTES

[1]Ganganagar, Jhunjhunu, Nagaur, and Sikar districts are included in the original sample of districts for various reasons. Misra (1967) places Ganganagar in the "canal region" of Rajasthan. Ganganagar was the scene of intensive colonization and irrigation during the pre-independence administration of Maharajah Ganga Singh of Bikaner state. During his administrative control, the Gang Canal was constructed bringing water from northern rivers. Since then, the Bhakra Canal and The Rajasthan Canal have allowed the cultivation of much of the district and promoted rapid inward migration. Jhunjhunu, Nagaur, and Sikar Districts are part of a zone considered "semi-arid" by Misra. These districts are alternatively "wet" and "dry" over a period of a few years. These three districts are included because their cropping patterns are more similar to those of the eastern plains and plateau than they are to the desert districts of the western region.

[2]$z = 2.01$, p. $= .022$, one-tailed, see Blalock (1972) for one discussion of the Mann-Whitney "U" test and other nonparametric tests of significance.

[3]Morris-Jones and Dasgupta (1971), Benjamin and Blue (1971), Zagoria (1971), Elkins (1972), and Adams and Bumb (1973) utilize district-level data; Adelman (1971) has used village-level data for a factor analysis of rural development.

[4]The panchayat samiti forms the middle rung of the three-tier structure of local self-governemtn in Rajasthan. The panchayat samiti is congruent with the tehsil which is a sub-district administrative unit for which revenue data are kept, minor judicial and police functions are performed, and census data collected. In the great majority of cases, the panchayat samiti, and tehsil, and the Assembly constituency are congruent.

[5]Scheduled castes and scheduled tribes are those castes and tribes designated by the Government of India to be low in economic resources and educational opportunities. These groups are enumerated in the Census (since 1931 these are the only castes and tribes listed, by name, in the Census of India) and separate tables are prepared. The purpose of the enumeration is to assist the Government in planning for the scheduled caste and scheduled tribe up-lift programs.

[6]See L. Dushkin (1972) for a careful description of this phenomenon on an all-India footing.

[7]My own interviews with political party workers confirm this observation. Rarely does a scheduled caste or scheduled tribe candidate or Member receive a nomination more than once.

[8]Of the original 124 constituencies in the fourteen (14) districts chosen for the study, ninety-six (96) have the same constituency boundaries from 1962 (Third General Election) through 1971's Parliamentary Elections. Of these ninety-six (96), sixty-four (64) are chosen as the sample for hypothesis testing. This second group of sixty-four (64) was created to insure variance on one of the independent variables, socio-economic dominance (see below in this Chapter). The strategy was to find constituencies within the sample of ninety-six (96) which were unambiguously high and low on socio-economic dominance. Care was taken to check for sample bias at this stage. The sixty-four (64) constituencies do not differ significantly on other variables from the original 124 or ninety-six (96).

[9]Benjamin and Blue (1969) utilized two sources of data for each variable in their study of political modernization at the district-level in India. When districts and parliamentary constituencies were not congruent, they first chose the overlapping district with the highest value for a variable and ran that value against other important variables in the study. Then, they chose the overlapping district with the lowest value and used that variable in the analysis. They found no significant difference in the results when comparing a method which used the highest value for a parliamentary constituency with the lowest value for the parliamentary constituency.

[10]Rajasthan's budget year runs from April 1 through March 31.

[11]Earlier in this Chapter a control was introduced for levels of agricultural productivity. Sharma's (1964) index of agricultural productivity potential placed all of Rajasthan's (and India's) districts into one category regardless of agricultural productivity system types. At that point, the purpose was to distinguish between the districts chosen and those excluded. This is a precaution against picking districts where the Governments take no interest at all in rapid agricultural growth! Where agricultural productivity potential is relatively high and where the government pursues a strategy to combine high yield variety seeds with fertilizers and irrigation, variance in one important economic component could be part of the decision-makers' models for rural public policy goods allocation.

[12]Voter rationality is nearly an undefinable charactertistic and may mean simply acting in one's own interest assuming an ability to order alternatives. The voter's model for electoral choice appears to have expanded to include government action as a factor independent of patron dominance or caste or factional loyalties. While there is no direct proof of this assertion, there is general agreement among Indian political scientists about this point.

[13]See a discussion of voter mobilization and participation rates in Chapter One.

[14]Party fragmentation may be analogous to some measures of electoral competition in that the more highly fragmented the constituency, the smaller the differences between winning and losing parties. A number of measures were used for this study, but none were as useful as Rae and Taylor's (1970) index discussed below. For an excellent summary of measures of interparty competition assuming several types of data see Wilcox (1973).

[15]A standard score for Gini is calculated here according to the following formula:

$$S = X(r-0); \text{ where,}$$

- S = the standard score for Gini;
- X = 100/the range of the Gini coefficient;
- r = the value for the individual constituency unit; and,
- 0 = the lower limit of the Gini coefficient range.

[16]See Chapter Four for a more detailed discussion of the characteristics of this variable. It is to be referred to as X_4 when constituencies are high on socio-economic dominance and X_5 when constituencies are low on socio-economic dominance.

[17]See Chapter Five for a discussion of this factor. It will be presented symbolically as X_6 when the regime political party has been in power from March 1967 through April 1971 without interruption and X_7 when an opposition political party Member, independent Member, or a defector has represented the constituency in the Assembly.

[18]There is a growing emphasis upon developing public policy models with instrumental variables. Cain and Watts (1971) criticize the "Coleman Report" for this shortcoming. Holt and Turner (1974) state a case for artisanship among public policy analysts. While this work seeks to move in such a direction, the materials presented here do not fit all of the important qualifications stated by either Cain and Watts or Holt and Turner.

[19]A test of significance is applied for each intercept and partial slope. For the intercepts a test of the significance of differences between two intercepts is given; for the partial slopes the test is whether the partial slope differs significantly from zero in a predicted direction H_0: $b=0$; H_a:$b>0$, or H_a: $b<0$ (see Johnston, 1972).

CHAPTER THREE

THE DISTRIBUTION OF RURAL PUBLIC POLICY GOODS:
ECONOMIC AND ELECTORAL FACTORS

INTRODUCTION

This chapter examines the assertions that policy decision-makers consider economic and electoral factors in the distribution of a society's scarce policy resources. The analysis argues that decision-makers may distribute public policy goods in response to environmental factors important for desired economic development and political outcomes. Policy decision-makers take into account what output priorities are to be satisfied, how resources are to be mobilized to satisfy the demand for policies, and for whom priorities are to be met. As Curry and Wade put it, policy decision-makers consider:

> (1) the distribution of wants (tastes and preferences) among the members of the polity, (2) the level and distribution of political resources among members of the polity, and (3) the manner in which political markets are structured. (1968: 97).

At this point we are primarily concerned with how agricultural development (irrigation), electoral mobilization rates, and party cleavages and fragmentation at the constituency level may have an impact on policy distribution. In a broad sense, these independent factors indicate something about the distribution and expression of the tastes and preferences of members of the polity.

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Rural Public Policy Goods

Two types of rural public policy goods are considered here. First are rural development funds intended for community welfare. These monies are disbursed though a panchayati raj structure. Panchayati raj in Rajasthan, instituted in 1959, decentralized important community development activities. The legislative constituency equivalent in the panchayati raj structure, the panchayat samiti, has been designated the key level for promotion of political awareness and distribution of some economic welfare benefits. Funds have been disbursed through the Development Department of the Ministry of Agriculture via the district-level, zila parishad, to the panchayat samiti where local indirectly elected councilment determined the distribution of funds with the guidance of a local administrator.

Rural development funds are viewed here as welfare public policy goods.[1] They are channelled through the panchayati raj organizations and are suited to political patronage. The regime political party, the Indian National Congress, has been in a position to utilize these funds for the maintenance of political support.

A second type of public policy good provided by the Government of Rajasthan is rural electrification. It is financed from internal revenue sources (for Rajasthan) and grants-in-aid from the Centre government earmarked for electrification. Electrification in rural areas is a highly valued productive resource. Irrigation wells, if assisted by electric pumps, draw significantly larger amounts of water for crops. New fertilizer sensitive seeds depend upon sure and timely quantities of water for maximum germination and yield. Rural electrification is a fundamental capital good for increasing agricultural productivity.

Rural electrification in Rajasthan is considered to be a production-oriented public good. Electrification approximates some definitions of a "public" or "non-private" good assuming that the important distributional unit is the legislative constituency. Below that level, electricity itself can be distributed in the manner of a private good.

The Environment

The term "environment" refers to the larger policy process arena. It includes variables not directly part of decision-making mechanism. It includes variables not directly part of decision-making mechanism. Associating the environment with policy outputs has been a common focus in recent comparative public policy studies. The discussion here underscores the importance of economic and electoral variables in the distribution of public policy goods.[2]

Among the economic factors amenable to measurement and expected to be associated with the distribution of rural public policy goods is irrigation, an indicator of agricultural development levels across constituencies. One idea to be expanded below is the relationship between variation in irrigation and the distribution of specific types of public policy goods. Welfare public policy goods might be disbursed, on economic grounds, to areas with low agricultural production potential; on the other hand, production-oriented public goods would go to areas with sufficient material factor inputs already present.

Electoral factors may be important for rural public policy goods distribution, also. During the period of the 1960's, electoral participation increased and the political party apparatus acquired some stability. The

percentage of eligible citizens voting in elections for the state legislative
assembly rose dramatically from 1952 onward to levels near or above the
national average in 1967. No small part of this increase in participation
is due to an awareness of the role of party activity in policy decisions. A
large part of the increase may be attributed to the involvement of the local
landed post-feudal aristocracy's interest in elective politics, as well.
Where some voters are attracted to the pools to attempt to influence govern-
mental decisions, others are mobilized to support elites who have turned to
the ballot boxes to maintain control.

Political parties operate at the level of the constituency. These are
organizations which elect representatives and dispense patronage. Since the
institution of open elections with universal suffrage, many candidates have
sought election as "independents" or without party designation. Over the
past three general elections, 1962, 1967, and more recently 1972, there has
been a steady decline in the number of independent Members and in the percent-
age of independents' votes. Many independents have been coopted into
political party organizations or have been defeated by party candidates. The
ruling Indian National Congress has maintained its dominant electoral position
through several crises including a dislocation during the Fourth General
Election in 1967 and the defection of a major party faction prior to those
elections. Over time, political party organizations, whether regime (INC) or
opposition, have managed larger and larger percentages of the electorate.

The Third and Fourth General Elections (1962 and 1967 respectively) are
important elections in Rajasthan. In 1962 opposition parties generated a
larger share of the popular vote and a larger share of the seats in the state

Assembly (Vidhan Sabha) than before. In 1967, their share became even larger. There is a marked increase in competitiveness between 1957 and 1967. In 1967 opposition parties entered into electoral alliances, where possible, to unseat the ruling Indian National Congress party. This strategy might have succeeded but for an adverse ruling handed down by Rajasthan's Governor who invited the INC to form a government even when there was uncertainty on the position of the INC's Membership in the Assembly.

The Indian National Congress responded to the critical Fourth General Election (1967) in a manner which suggests a growing concern for electoral factors. Hennessey and Martin (1973) have hypothesized that political parties go through cycles related to the maximization of electoral support and the conflicting goal of maximizing organizational stability. From the beginning of democratic politics in Rajasthan, the regime party's Cabinet, or decision-making body, had expanded only by a few Members. During the period from 1966 through April of 1971, the Cabinet was enlarged from twenty-one (21) to thirty-six (36) Members. In addition, new positions were created for Members who provided service to the regime party during the critical period preceding the formation of a government in 1967. Rajasthan's Indian National Congress pursued an "electoral game" after the 1967 election and this strategy should be visible in the tests of hypotheses later in this chapter.

HYPOTHESES

Several hypotheses emerge from the arguments made about policy distribution and the description of Rajasthan's economic and political environments. There has been a commitment in Rajasthan to planning, however rudimentary,

while simultaneously policy decision-makers, particularly elected officials, are responsive to increasing electoral pressure. At the same time, the expected relationships between rural public policy goods distribution and economic growth may vary with what is known about the impact of a policy good upon the production of some desired outcome. If, for example, electrification has a well-known relationship to irrigation (and thus to agricultural productivity), it may be easier to apply strictly "rational" criteria to the allocation of electrification. In general terms, more is known about the associations between material public policy goods and economic production functions than is known about the distribution of public policy goods and political outcomes.

Economic policy decisions distributing rural public policy goods may be made, initially, without much knowledge of political outcomes. The Green Revolution strategy of the Government of India, for example, advantages those farmers who could produce the most grain in a short period of time without much thought given to the consequences of a widening gap between rich and poor farmers. The long-run political consequences of the Green Revolution strategy are important, but difficult to assess. Once the policy goods have been distributed, however, a political response may occur allowing decision-makers a chance to respond in a second policy decision. Initial policy decisions might be compared with subsequent ones and associated with intervening political or electoral variables to assess whether or not the later policy decisions are made in response to political or electoral factors.

Rural Public Policy Goods Distribution and Agricultural Development

As noted above, panchayati raj funds are disbursed by the Development Department of the Ministry of Agriculture. Funds are earmarked for primary

and middle-school education, community development and animal husbandry, and loans for irrigation and other projects. These funds were intended for the social and economic uplift of the rural countryside during a period when it was felt that rural education and political awareness were critical for local community development. This reason leads to the interpretation of panchayat samiti-level rural development funding as "welfare expenditures." It is expected that levels of agricultural development will be inversely associated with rural development funding rates on the grounds that where "needs" are perceived to be an important part of the economic rationale, those areas with the greatest need will receive funding at a higher rate.

Electrification, on the other hand, may be determined according to economic criteria to maximize agricultural productivity in rural areas established by the Rajasthan State Electricity Board (RSEB). The model utilized by the RSEB includes irrigation based on groundwater availability and/or canals. Priorities for electrification are sometimes set by the District Agricultural Production Committee (DAPC), chaired by the District Collector, and composed of elected officials, non-elected administrators, and members of local governmental organizations. The DAPC is a strong coordinating body in some districts and has less influence in others (Mathur, 1971).

While economic criteria vary in the last decade for electrification, they include the proximity of a village to a high voltage line and an area's irrigation potential. In 1971 these criteria were

1. high agricultural potential with possible industrial utilization;

2. proximity to an eleven kilovolt (11 kv) line;

3. one scheme with wells clustered; and,

4. the ability of the village to contribute seventy-

    five percent (75%) toward the cost.

Hadden (1972, 1974) reports there has not always been strict adherence to

these criteria though potential for irrigation remains of the highest

importance.

If policy decision-makers utilize economic criteria, distributions

intended for economic welfare are likely to be inversely associated with

economic production capacity. Policy goods intended for improvement of

economic productivity may respond positively to levels of agricultural

development potential. The first hypothesis makes these assertions:

<u>Hypothesis 1.1</u>: there will be a negative association between
levels of irrigation and rates of rural
development spending;

<u>Hypothesis 1.2</u>: there will be a positive association between
levels of irrigation and levels of electrifi-
cation.

Rural Public Policy Goods Allocation and Electoral Factors

Electoral factors may also be important in decision-makers' distribution

of policy goods. It is asserted that electoral mobilization rates may

indicate demand for public policy goods. Demands may be expressed by

individuals or by political party organizations which mobilize voters in

constituencies. In either case, turnout rates may be perceived by decision-

makers as statements of preferences for higher rural public policy goods

allocation levels. It is also suggested that party cleavages, expressed as

the variable party fragmentation, impinge on public policy goods allocation.

Party fragmentation may provide information for the regime party on the fluidity of the electoral environment. Higher levels of party fragmentation suggest resource investment may be necessary either in order to win a competitive seat or sustain a Member in electoral trouble. Low levels of party fragmentation suggest that only high levels of resource investment could influence an electoral outcome. The regime party may well discount electoral mobilizations rates according to the level of party fragmentation.

Electoral Mobilization Rates. It has earlier been inferred that the regime political party in Rajasthan since 1967 has been playing an "electoral game." This seems to be a reason for distributing more funds to constituencies where electoral mobilization rates are high. High rates of rural development funding mean that during 1963-64/1964-65 the per capita amount of funding is lower than for 1968-69/1969/70, or the period immediately following the Fourth General Election (1967). One simple hypothesis is that higher electoral mobilization rates are positively associated with rural development funding rates. At the same time, if electoral mobilization is an expression of demand, it can be expected that RSEB administrators who control electrification are less inclined to accede to electoral demands for at least two reasons: first, the economic criteria for electrification are strong and second, RSEB administrators -- engineers and IAS officers -- are more likely to resist overt pressures from political parties and influential voters. Such pressure may be seen as "political interference." These observations lead to the following testable propositions:

Hypothesis 2.1: there is a positive association between electoral mobilization rates and rural development funding rates; and,

Hypothesis 2.2: there is a negative association between electoral mobilization rates and rural electrification.
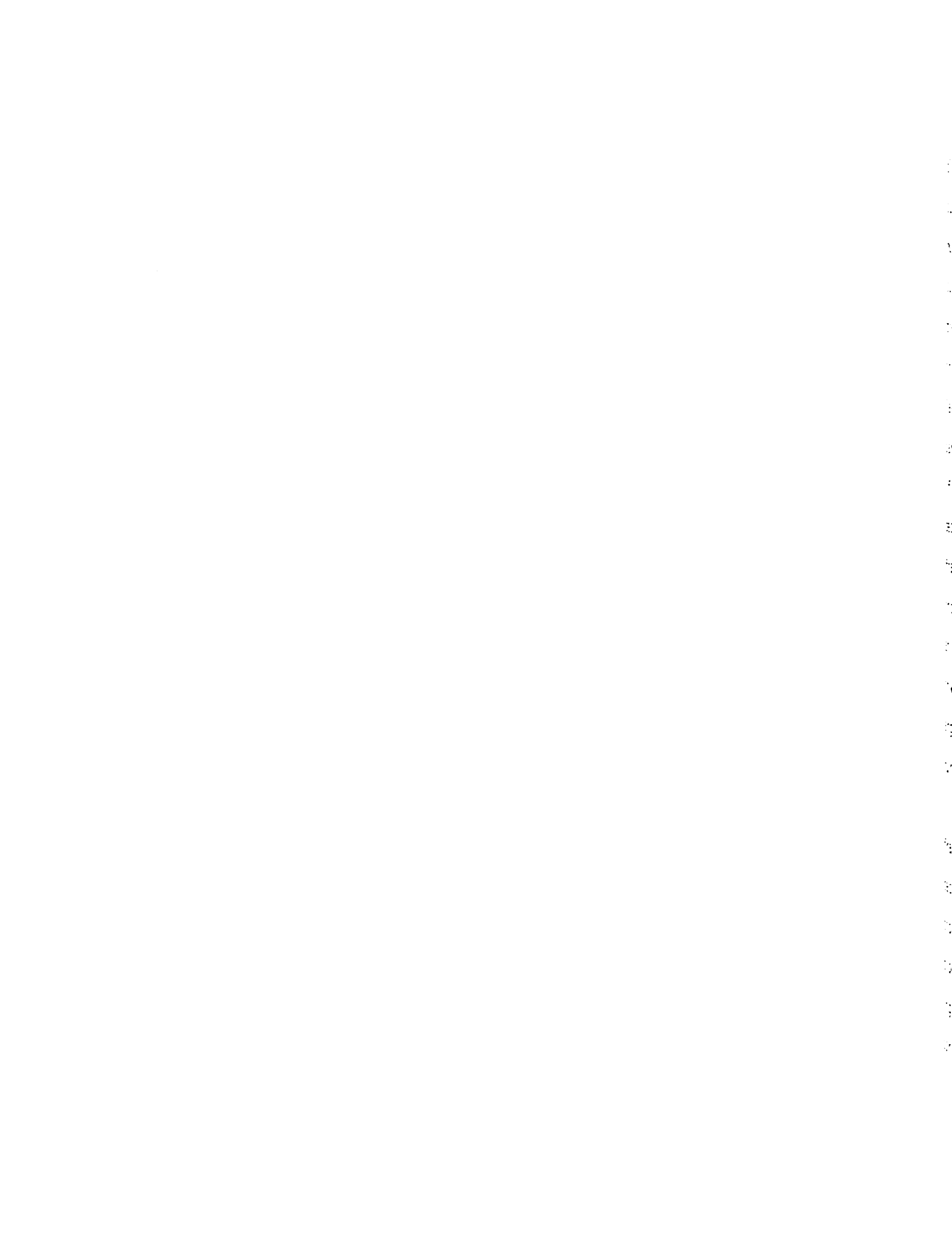
<u>Party Fragmentation</u>. Party fragmentation is an indicator of party cleavages within a constituency. The fragmentation of political party support might be considered by decision-makers who wish to determine how much of a rural public policy good is necessary to effect an electoral outcome. The regime party, if it wishes to win an election, can reduce the risks involved in investing scarce resources by gauging the cost of investing public policy goods to obtain political support. The higher the level of party fragmentation, the smaller the percentage differences between parties with a chance to win an election. The investment by the regime party of resources in high fragmented constituencies is more likely to produce a desired electoral outcome. In constituencies which are low on party fragmentation and already have regime party Members, there is little incentive for rural public policy goods investment. In constituencies where an opposition Member is elected and there is low party fragmentation, high investment of resources would be necessary to unseat the incumbent. This argument assumes, of course, that the regime party has best access to the rural development funding under consideration.

Rural electrification is controlled by administrators, however. Party fragmentation is unlikely to be a major component of the electrification decision. There is only the possibility that in the calculation of implementation cost, the RSEB administrator may perceive high levels of party fragmentation (or a multi-party situation) in a constituency as significantly contributing to increasing the total cost. Party fragmentation within the constituency portends conflict and pressure administrators might be likely to avoid. This

discussion leads to the following tentative hypothesis:

Hypothesis 3.1:   there will be a positive association between party fragmentation and rural development funding rates; and,

Hypothesis 3.2:   there will be a negative association between party fragmentation and rural electrification.

TESTS OF HYPOTHESES

Sixty-four (64) cases, or constituencies, are available for the tests of Hypotheses 1, 2, and 3. Each dependent variable, rates of rural development funding (Y_1) and rural electrification (Y_2), is first included in a regression equation with one independent variable, or

$$Y_i = a + b_1 X_k; \text{ where}$$

i = a subscript for one of two dependent variables; and,

k = a subscript for one of three independent variables.

Then each independent variables is entered into a multiple regression analysis with the independent variable, or

$$Y_i = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + E; \text{ where,}$$

i = one of two dependent variables;

X_1 = agricultural development (irrigation percentages);

X_2 = electoral mobilization rates;

X_3 = party fragmentation, and,

E = and error term.

The testing proceeds by examining each slope of the regression equation for both the bivariate and multivariate cases. Only linear functions are tested here; however, tests for non-linear functions are reported in appropriate footnotes and comments are offered about possible interrelationships between independent variables. An F-test is reported for each parameter of the regression equation. A graphical representation of the findings on each hypothesis is offered also to illustrate findings.

Rural Public Policy Goods and the Environment

Hypothesis 1.1 and Hypothesis 1.2. Does irrigation relate to rates of rural development funding and electrification? The data and regression analysis indicate this is the case. Table 3.1 shows the simple correlation between irrigation and rates of rural development funding is inverse (r = -.26) and the correlation between irrigation and electrification is postive (r = .17). While these are not high correlations, the parameters of the regression equation reflect that Hypothesis 1.1 and Hypothesis 1.2 can be supported. The multivariate regression equation yields a negative and significant slope for irrigation and rural development funding rates (b = -.783, p. = .05) and a positive and significant slope for irrigation and rural electrification (b = .364, p. = .05). These slopes suggest when controlling for electoral mobilization and party fragmentation, irrigation is significantly associated with the

Figure 3.1 illustrates the unit changes in irrigation and rates od development funding and electrification respectively. The slopes of the lines indicate support for Hypothesis One.[3]

TABLE 3.1

PUBLIC POLICY DISTRIBUTION AND IRRIGATION PERCENTAGES

Dependent Variable	Independent Variable	(a)	(b)	(s_b)	(r)	(r^2)[1]	(F)
Y_1	X_1*	0.853	-1.033	0.497	-0.26	0.065	4.323 (p=.05)
	X_1**	-0.682	-0.783	0.472	-0.26	0.065	2.748 (p=.05)
Y_2	X_1*	0.293	0.170	0.260	0.17	0.030	1.489
	X_1**	0.700	0.364	0.221	0.17	0.030	2.714 (p=.05)

*$Y_i = A + bX_k$ (d.f. = 1, 62)

**$Y_i = a + b_1X_1 + b_2X_2 + b_3X_3$ (d.f. = 3, 60)

[1]for multivariate cases equals R^2 change

Y_1 = rural development funding rates

Y_2 = rural electrification percentages

X_1 = percent irrigation in constituency

$$Y_1 = 0.853 - 1.033X_1^*$$

$$Y_2 = 0.293 + 0.17X_1^{**}$$
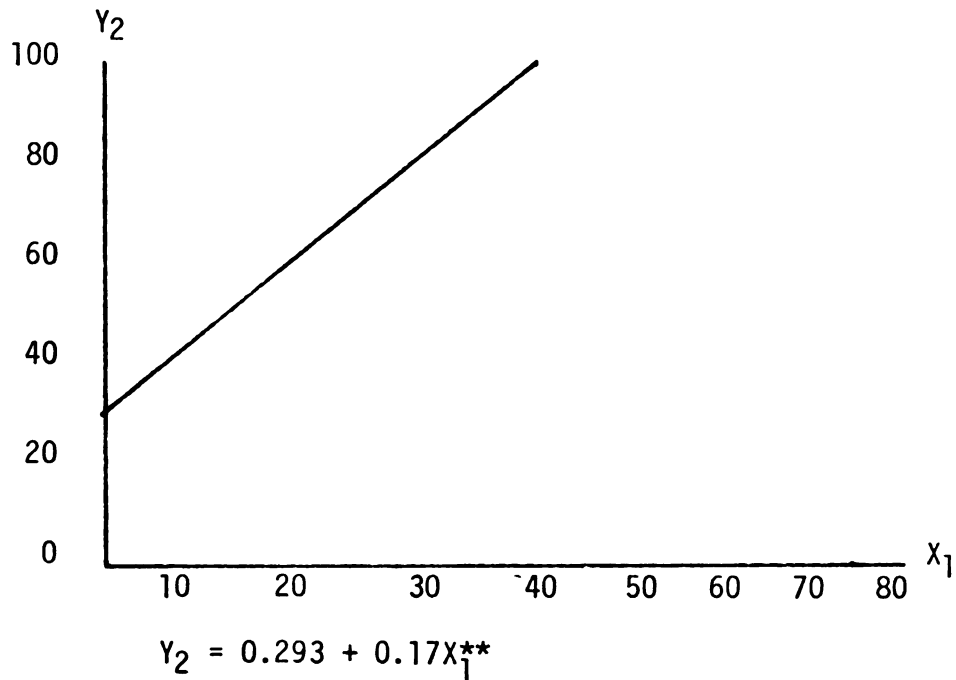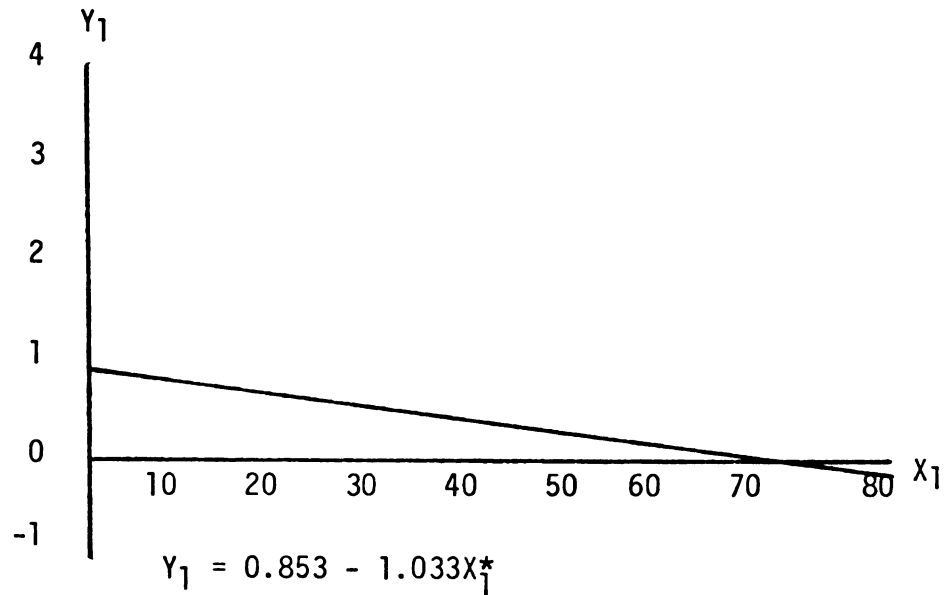
Y_1 = rate of <u>panchayat samiti</u> expenditure

Y_2 = rural electrification percent of total (period 1967-1971 as a percent of the decade, 1961-1971)

X_1 = percent irrigation of total arable land

*   significant at .05 level

**   significant at .10 level

FIGURE 3.1   <u>Rural policy distribution and irrigation percentages, bivariate slopes</u>

Hypothesis 2.1 and Hypothesis 2.2. Electoral mobilization rates and rural public policy allocation appear to be related in a manner which does not entirely support Hypothesis 2.1. Table 3.2 shows a negative, simple correlation between rural development funding and electoral mobilization rates ($r = -0.20$) and the correlation between rural electrification and electoral mobilization is also inverse ($r = -0.32$). An examination of the slopes in the bivariate and multivariate regression equation reveals an interesting change in the relationship between electoral mobilization rates and rural development funding rates, however. In the multivariate case, the partial slope for electoral mobilization rates and rural development funding rates, while remaining negative ($b = -0.203$), is not significant nor can the sign be taken as meaningful. This may mean there is an intervening variable between electoral mobilization rates and reates of rural development funding.

The slopes for rural electrification and electoral mobilization rates in the bivariate and multivariate regression equations are negative ($b = -0.429$ and $b = -0.531$, respectively). In the multivariate case, change in the coefficient of multiple determination (R^2) related to electoral mobilization rates is a large part of the variance in rural electrification.

The predicated positive association between rural development funding rates and electoral mobilization rates did not materialize. In the bivariate case the sign of the slope is the opposite of that predicted; in the multivariate case the partial slope is not significant. Hypothesis 2.2 which negatively associates electoral mobilization rates with levels of rural electrification is supported in both bivariate and multivariate equations.

TABLE 3.2

PUBLIC POLICY DISTRIBUTION AND ELECTORAL MOBILIZATION RATES

Dependent Variable	Independent Variable	(a)	(b)	(s_b)	(r)	(r^2)[1]	(F)
Y_1	X_2*	0.695	-0.580	0.363	-0.20	0.040	2.560 (p=.10)
	X_2**	-0.682	-0.203	0.352	-0.20	0.030	0.332
Y_2	X_2*	0.432	-0.429	0.161	-0.32	0.100	7.112 (p=.01)
	X_2**	0.700	-0.531	0.164	-0.32	0.120	10.435 (p=.01)

Y_1 = rural development funding rates

Y_2 = rural electrification percentages

X_2 = electoral mobilization rates

*$Y_j = a + bX_k$ (d.f. = 1, 62)

**$Y_j = a + b_1X_1 + b_2X_2 + b_3X_3$ (d.f. = 3, 60)

[1]for; multivariate cases equals R^2 change

Figure 3.2 displays the linear relationships between electoral mobilization rates and the rates of rural development funding and rural electrification.

Hypothesis 3.1 and Hypothesis 3.2. The relationships between party fragmentation and rates of rural development funding and rural electrification are presented in Table 3.3. There is a strong positive correlation between rural development funding and party fragmentation ($r = 0.41$) and a weak inverse association between rural electrification and electoral fragmentation ($r = -0.09$). It appears that party fragmentation is only related significantly to rural development funding rates. The relationship between party fragmentation and rural development funding is unchanged in the multivariate case. The slope ($b = 0.023$) is positive and significant. When controlling for irrigation and electoral mobilization rates, the partial slope between rural electrification and electoral fragmentation is negative ($b = -0.005$) and significant at the $p = .10$ level. This approximates the outcome in that party fragmentation appears to be associated negatively with rural electrification.

Figure 3.3 displays the linear relationship between party fragmentation and rural development funding rates and rural electrification.[4]

Summary of the Findings

This chapter tests three two-part hypotheses associating rural public policy distribution in Rajasthan with the level of agricultural development (irrigation), electoral mobilization rates, and party fragmentation. When
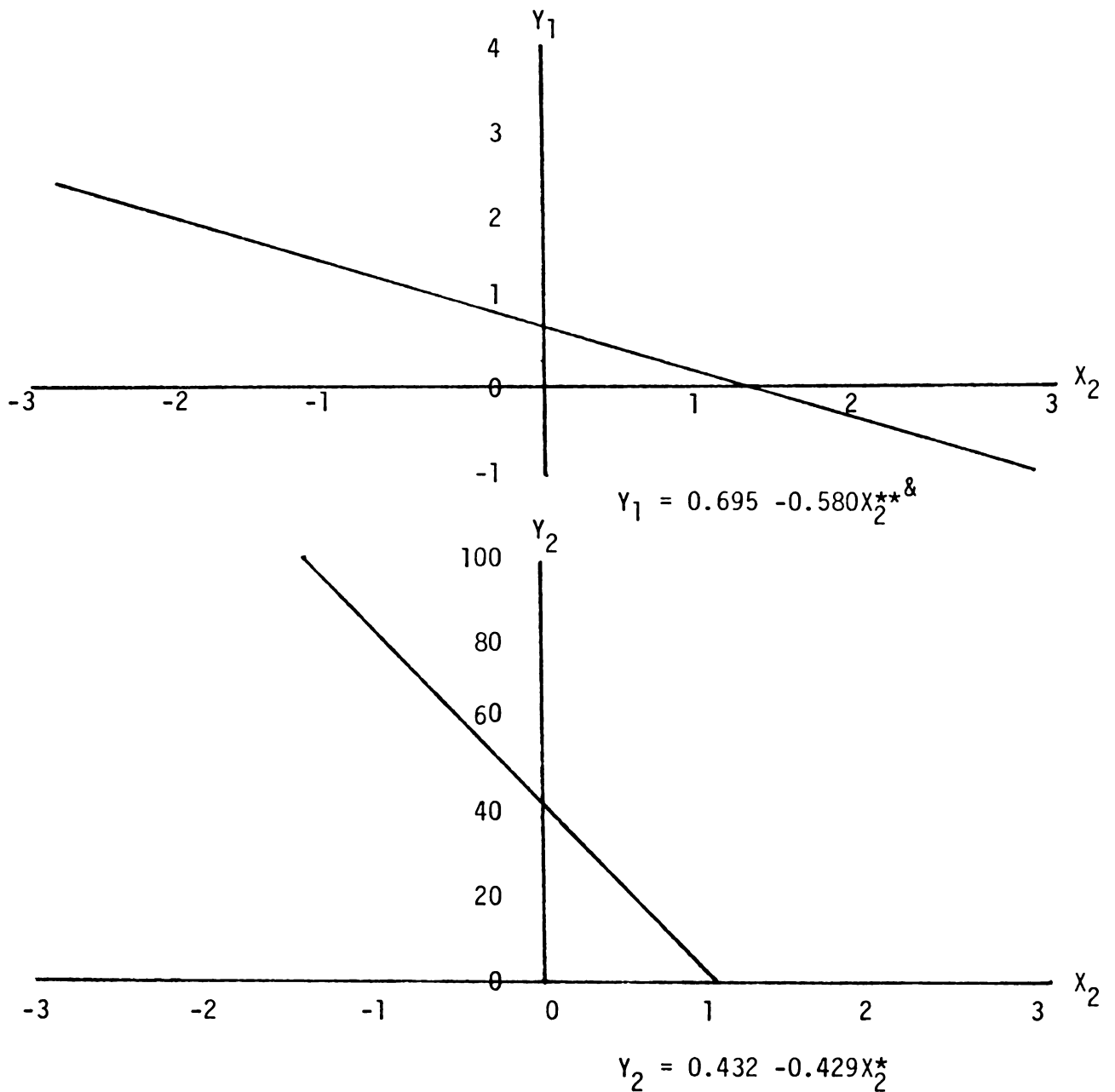
$$Y_1 = 0.695 - 0.580X_2^{**\&}$$

$$Y_2 = 0.432 - 0.429X_2^{*}$$

Y_1 = rate of <u>panchayat samiti</u> expenditure

Y_2 = 1967-1971 rural electrification as a percent of the decade's rural electrification (1961-1971)

X_2 = electoral mobilization rates

*   significant at .01 level

**   significant at .10 level

&   this slope become nonsignificant in the multivariate equation

FIGURE 3.2   <u>Rural policy distribution and electoral mobilization rates, bivariate slopes.</u>

TABLE 3.3

PUBLIC POLICY DISTRIBUTION AND PARTY FRAGMENTATION

Dependent Variable	Independent Variable	(a)	(b)	(s_b)	(r)	(r^2)[1]	(F)
Y_1	X_3*	-1.106	0.026	0.008	0.40	0.164	12.159 (p=.01)
	X_3**	-0.682	0.023	0.008	0.40	0.114	8.641 (p=.01)
	X_3*	0.537	-0.003	0.004	-0.09	0.008	0.474
	X_3**	0.700	-0.005	0.004	-0.09	0.030	2.005 (p=.10)

Y_1 = rural development funding rates

Y_2 = rural electrification percentages

X_3 = party fragmentation for 1967
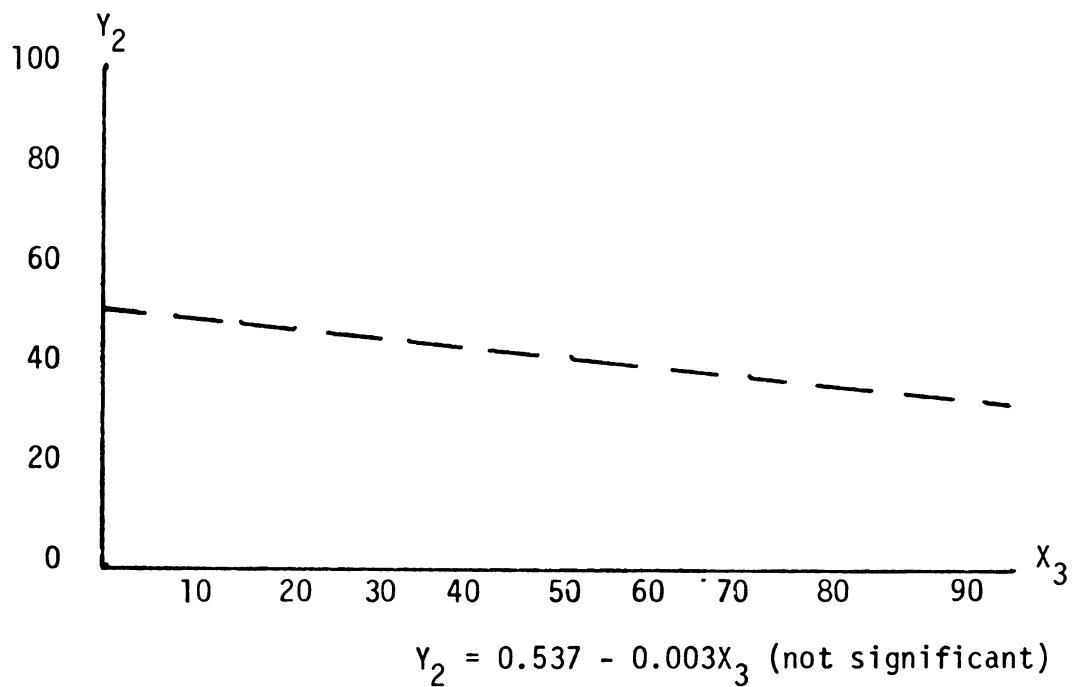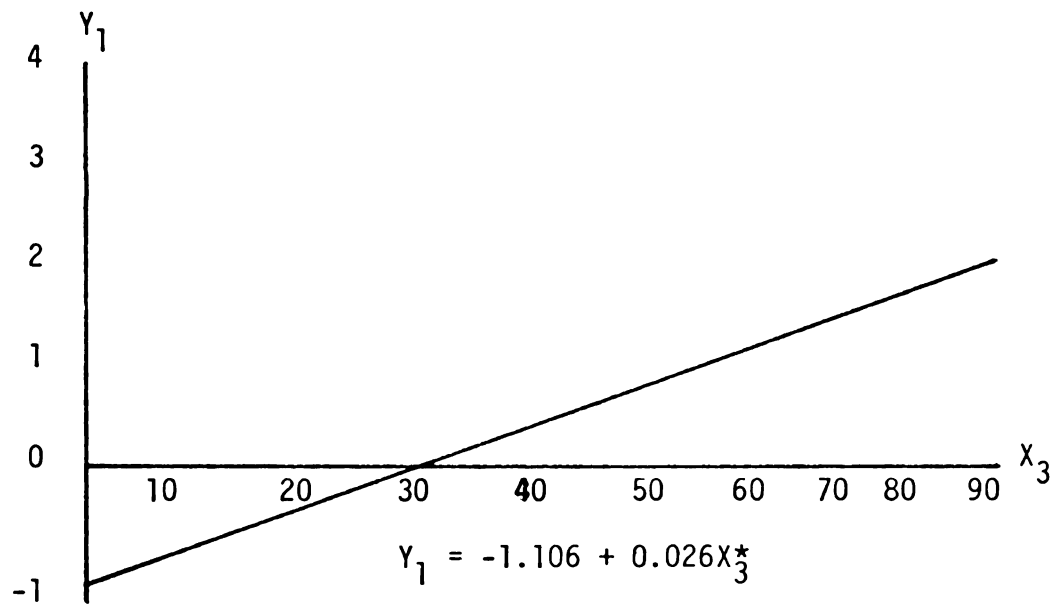
*Y_j = a + bX_k (d.f. = 1, 62)

**Y_j = a + b_1X_1 + b_2X_2 + b_3X_3 (d.f. = 3, 60)

[1] for multivariate case equals R^2 change

$$Y_1 = -1.106 + 0.026X_3^*$$

$$Y_2 = 0.537 - 0.003X_3 \text{ (not significant)}$$

Y_1 = rate of <u>panchayat samiti</u> expenditure

Y_2 = 1967-1971 rural electrification as a percent of the decade's (1961-1971) rural electrification

X_3 = party fragmentation (Rae and Taylor index)

* significant at .01 level

FIGURE 3.3 <u>Rural policy distribution and party fragmentation, bivariate slopes.</u>

these variables are fitted into regression equations, the results lead to the tentative acceptance of several hypothese. Hypothesis 1.1 and Hypothesis 1.2 appear supported. Rural development funding is associated negatively with levels of irrigation while rural electrification is positively associated with levels of irrigation. Hypothesis 2.1 is not supported and it appears there is not a significant relationship between rural development funding rates and electoral mobilization rates. At the same time there is significant evidence for Hypothesis 2.2; rural electrification and electoral mobilization rates are inversely associated. Hypothesis 3.1 and Hypothesis 3.2 which associate party fragmentation with rural development funding rates are, at least partly, valid. There is strong evidence to buttress an assertion about the positive association between rural development funding rates and party fragmentation, but there is only weak evidence to indicate that rural electrification and party fragmention are inversely related.

Table 3.4 summarizes the results of the regression analysis in this chapter. It should be noted that the three independent variables explain slightly more than twenty percent (20%) of the variance in rural development funding rates and nearly eighteen percent (18%) of the variance in rural electrification.

DISCUSSION

Two types of policy goods are associated with three environmental variables. These goods are of different types. Rural development funding rates indicate change in the allocation decisions made for highly divisible funds intended for community welfare. The economic rationale for welfare

TABLE 3.4

RURAL PUBLIC POLICY DISTRIBUTION AND THE
POLICY ENVIRONMENT (SUMMARY)

Dependent Variable	Independent Variable	(a)	(b)	(sb)	(r)	(R² change)	(F)[1]
Y_1	X_1		-0.783	0.472	-0.26	0.065	2.748 (p=.05)
	X_2		-0.203	0.332	-0.20	0.030	0.332
	X_3		0.023	0.008	0.40	0.114	8.641 (p=.01)
		-0.682				R^2=0.207	5.231 (p=.01)
Y_2	X_1		0.364	0.221	0.17	0.030	2.714 (p=.05)
	X_2		-0.531	0.164	-0.32	0.120	10.435 (p=.01)
	X_3		-0.005	0.004	-0.09	0.030	2.005 (p=.10)
		0.700				R^2=0.176	4.275 (p=.01)

[1]d.f. = 3,60

expenditure is, at best, difficult to formalize. It is suggested here that a fundamental economic criterion for welfare goods distribution is "need." Need refers to some measure of deprivation and empirically means that some governmental units have less than others.

The second public policy good, rural electrification, is one for which much is known about its integration into a production algorithm. Given a model of agricultural production which emphasizes irrigation, high yield variety seeds, fertilizer and mechanization, it is not difficult to advocate that electric pumps on tube well increase food-grain yields. In short, there is a significant difference between a model including rural development funding intended for community welfare or development, on the one hand, and a model including electrification for irrigation and increased agricultural productivity, on the other.

The organizations within which policy distribution decisions are made differ for the two types of policy goods, also. Rural development funds are controlled, nominally, by the Department of Development of the Ministry of Agriculture. The Minister of Agriculture is an elected official and are Members of the Assembly Cabinet. The administrative structure which facilitates and implements programs, including the rural development activities of panchayati raj, is relatively ineffective in arguing for an economic conceptualization of how development funds might be distributed. At the same time, the Minister of Agriculture and his colleagues are part of an electoral system, the base of which is the legislative constituency. The constituency is congruent with the panchayat samiti whose leadership is directly or indirectly elected by the same voters who elect Members of the state Assembly. When highly divisible policy resources are available to the Minister of

Agriculture, it is difficult to resist pressures from constituents and local, constituency-level power brokers.

Rural electrification, however, is controlled by an autonomous administrative agency composed of career administrators in India's prestigious civil service, the Indian Administrative Service, and career civil engineers who may be aware of administrative bargaining but are disdainful and fearful of political party involvement in intra-administrative affairs. The character of their policy good -- it is highly technical -- allows administrators in the RSEB to resist most political pressure brought at the state-level for allocations of electrification to any given constituency.

Given the nature of the public policy goods and the shape of the relevant decision-making mechanisms, what have we learned about how environmental variables effect their distribution? It is relatively clear that the economic factors stated as part of the decision-making model belong in the analysis. The partial slope for rural development funding rates and irrigation percentages is positive and significant. It is not altogether surprising, in addition, that the Pearson correlation coefficient associating rural development funding rates and irrigation percentages is weak, though negative as predicted. A strong association would have suggested that electoral factors were not as important as hypothesized. Rural electrification, as predicted is associated positively with irrigation levels. The partial slope is positive and significant. What is surprising in this relationship, however, is that the Pearson correlation coefficient is not of a higher positive value. This indicates other factors, perhaps some not included in the model (state-level administrative factors), may have an important impact on rural electrification

decisions. In any event, a small portion of the variance in rural public policy goods allocation is explained, in this study, by an indicator of agricultural development.

Rural public policy goods distributions are associated with electoral factors, as predicted in the introduction to this Chapter (and in Chapter One). The question is how can we explain the findings presented earlier? Our first assertion was that electoral mobilization rates are perceived by state-level decision-makers as political demands for higher levels of rural public policy goods. The results on this point are mixed. The bivariate results for electoral mobilization rates and rural development fund rates indicate a negative slope; and, for the multivariate case where all three independent variables are included, the partial slope is not significant. We shall return to this point when considering the association between rural development funding rates and party fragmentation. Electoral mobilization rates and rural electrification are associated by a negative partial slope at a high level of significance (F = 10.435, p = .001). It was argued earlier that state-level administers who control electrification decisions might perceive electoral mobilization as an expression of demands to be rejected as political interference. This argument is plausible and is given some weight by the strength of the relationship. In the multi-variate regression equation, electoral mobilization rates "exlain" twelve percent (12%) of the variance in rural electrification. Electoral mobilization rates appear to be important for rural electrification but are relatively unimportant for rural development funding decisions.

Party fragmentation is a factor which might be expected to be part of decisions made on public policy goods effecting the character of constituency-

level political party organization. On the other hand, for decision-makers who control resources within an autonomous agency, party fragmentation may not be as compelling a factor. If relevant at all, it is a means by which decision-makers might assess costs of implementing policies. The data and analysis suggest these conclusions are at least partly valid. The significant and positive partial slope for rural development funding rates and party fragmentation lend credence to the idea that the regime party does consider the character of party cleavages in decision-making. The strength of the Pearson correlation coefficient (r = .41) lends even more support to this argument. There is only limited evidence to claim that rural electrification distributions are associated with party fragmentation. There is only a weak partial slope between rural electrification and party fragmentation. That the partial slope is negative and that the standard error of the slope (s_b) is less than its absolute value do give tentative support to the hypothesis that administrators consider electoral factors in policy implementation costs. Party fragmentation emerges from this analysis as a critical factor for rural development funding rates and as not very central to rural electrification decisions.

Have we learned anything, in general, about the allocation of these two types of rural public policy goods? It can be stated with more authority that electoral factors matter in the distribution of rural development funds. Political decision-makers -- Members of the regime party -- are less concerned with the rate of turnout than with assessing the chances of victory in a constituency. Their objective is to discount electoral mobilization rates as a function of party cleavages. This points to a further analysis of the factors which underlie constituency-level party cleavages rather than to

factors which promote voting participation, per se. Party leadership is more concerned with the organizational and institutional character of voting patterns than with the number of persons who turnout for elections over time. Chapters Four and Five investigate the institutional antecedents of party organization at the constituency level and the difference which party control makes in policy goods allocation decisions.

What about rural electrification? We might be led to conclude that rural electrification decisions are less imbedded in considerations of electoral factors. The evidence available indicates a positive partial slope for rural electrification and irrigation. This is a predicted, but the strength of that association is weak. Among the electoral factors introduced into this model, electoral mobilization rates are negatively associated with rural electrification. The likelihood here is that administrators are not responding to individual voters' preferences but are rather responding to important and powerful local-level political figures who are both capable of mobilizing voters and bringing demands upon the RSEB for special consideration. There is corraborative evidence for this assertion in Hadden (1972). Unfortunately, this analysis and the data presented here make reference only to the electoral environment and not directly to state-level administrative processes. Somewhere in the linages within administrative agencies at the state-level, between state- and district-level administrative bodies, and across districts the answers to the unexplained variation might be found. Chapter Four and Five attempt to test hypotheses for institutional variables and rural electrification; these variables, again, refer to the sub-district or constituency level.

FOOTNOTES

[1]The view that <u>panchayat raj</u> funding is welfare spending is unique
to this analysis. An examination of the magnitude of the funding suggests,
however, that only remedial benefits can emerge from efforts given the level
of over-all economic development in Rajasthan. The Government of Rajasthan
committed itself to political awareness and economic uplift in its
decentralization schemes of the late 1950's and early 1960's and were less
committed to economic growth. To classify all <u>panchayat funds</u> as "welfare"
is not completely accurate because some funds were given to farmers on
the basis of their potential rather than their need, but, in general, the
categorization is appropriate.

[2]There is no one definition of the "environment" which is adequate.
Many public policy studies have assumed environmental factors are important.
This study specifies which environmental factors impinge upon policy
allocations and attempts to give a logic of their applicability to a policy
decision model.

[3]A semi-logarithmic function is applied to the data for irrigation
and rural development funding rates, also. The results of the analysis,
for the bivariate case, show the function to be a fair approximization of
the data:

$$\text{semi-logarithmic:} \quad \log_{10}Y_1 = a - bX_1$$

$$a = -0.108 \qquad F = 6.521 \ (p = .05)$$

$$b = -0.891 \qquad s_b = 0.349$$

$$\text{semi-logarithmic:} \quad \log_{10}Y_2 = a + bX_1$$

$$a = -0.634 \qquad F = 3.010 \ (p = .05)$$

$$b = 0.544 \qquad s_b = 0.309$$

[4]A quadratic equation was approximated for the data on rural development
funding rates (Y_1) and party fragmentation (X_3) on the premise that in low
levels of party fragmentation, there would be an inverse association between
party fragmentation and rural development rates which would become positive
at subsequent levels of fragmentation. The results are significant for the
bivariate case:

A graph of the equation shows the curve approximated. It is compared to the linear relationship found in Chapter Three also.

quadratic solution: $Y_1 = a - b_1 X_3 + b_2 X_3^2$

$a = 6.690$ $\qquad$ $F = 7.473$ $(p = .01)$

$b_1 = -0.211$ $(p = .05)s_b = 0.113$

$b_2 = 0.002$ $(p = .05)s_{b_2} = 0.001$
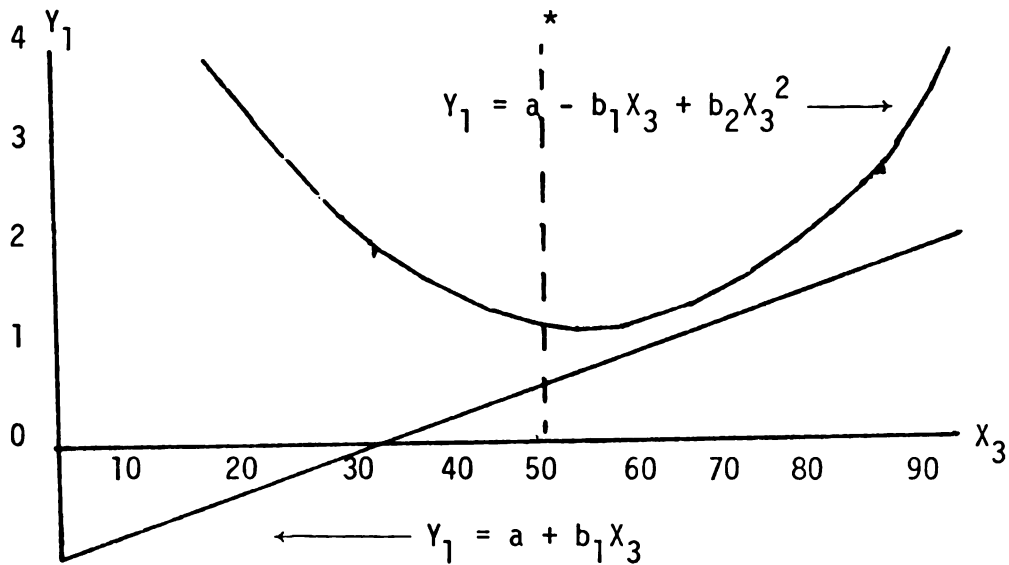
* this line represents the data minimum for party fragmentation (48.8).

CHAPTER FOUR

THE DISTRIBUTION OF RURAL PUBLIC POLICY GOODS
AND SOCIO-ECONOMIC DOMINANCE

INTRODUCTION

The previous chapter tested hypotheses associating economic and electoral factors with the distribution of rural public policy goods. Here a new factor, socio-economic dominance, is introduced into the model. It is asked whether socio-economic dominance affects average levels of rural public policy goods distribution and whether socio-economic dominance influences the relationships between economic and electoral factors and rural public policy goods distribution.

Rural Public Policy Goods Distribution and Socio-Economic Dominance

"Politics," we are reminded by Gordon Tullock, "describes social situations in which the . . . primary relationships are those between superior and subordinate." (1965: 11). In agrarian societies, these primary relationships are classified generally as patron-client associations. John Duncan Powell (1970) states two defining characteristics of patron-client associations:

> First, the patron-client tie develops between two
> parties unequal in status, wealth, and influence
> . . . (and) second, the formation and maintenance
> of the relationship depends on reciprocity in the
> exchange of goods and services. . . . (1970:412).[1]

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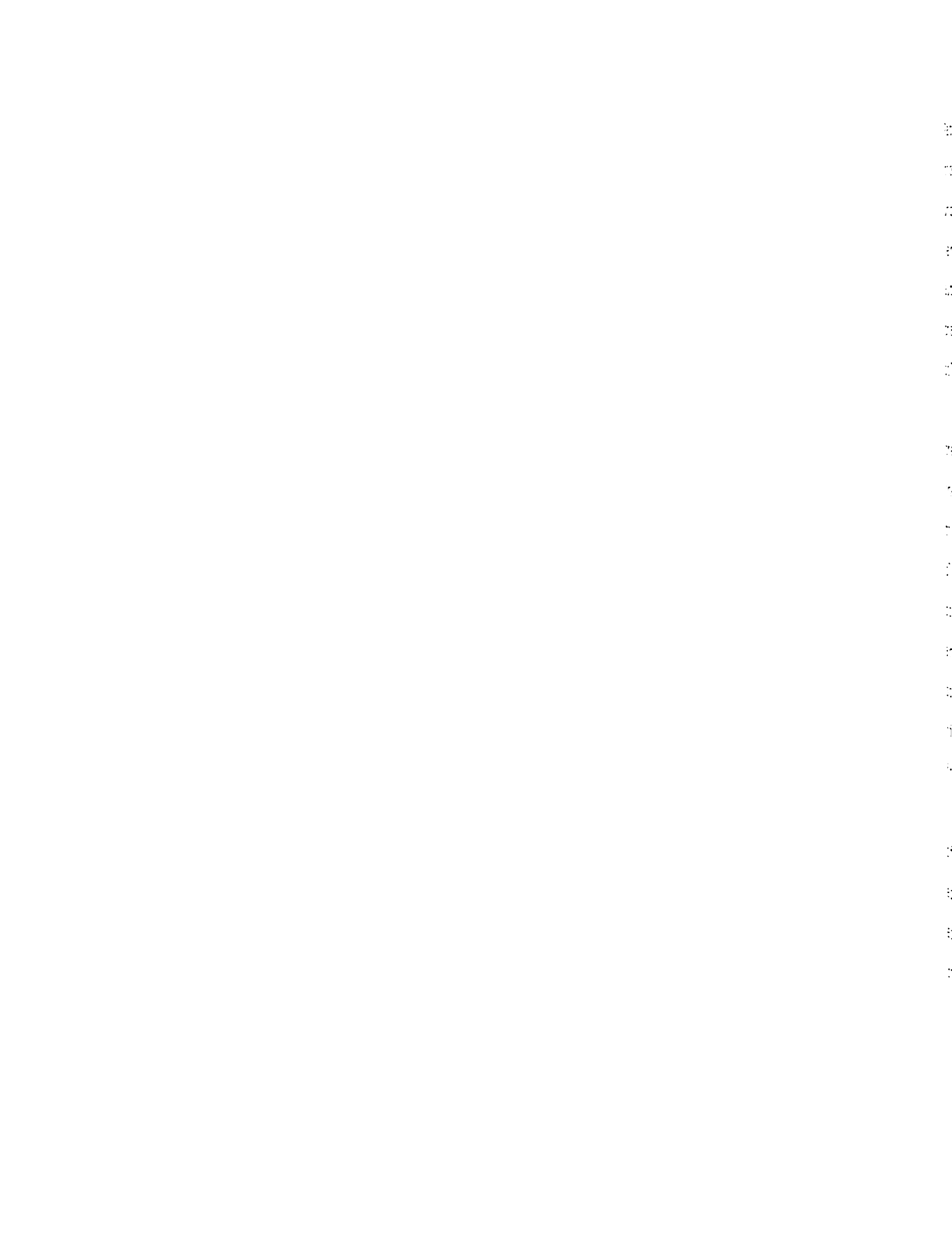
Patron-client relationships permeate several strata of political organiza-
tion and participation in rural societies. Scott (1972) finds these ties
underlying political party organization and for the Rudolphs (1967),
vertical mobilization patterns in agrarian societies rest upon traditional
authority and mutual dependence. Richard Taub's fieldwork (1970) suggest
that patron-client ties trouble administrators who wish to remain free of
political "interference."

This chapter introduces an analysis of socio-economic dominance into
the model of rural public policy goods distribution. Land distribution
inequality and the distribution of status are basic to political organiza-
tion in rural areas. Where economic resources are concentrated, patron-
client associations are likely to be a model institutional arrangement for
political and electoral mobilization. Where economic resources and status
are more equally distributed, the tendency may be toward less dependency in
social and political exchange. Both levels of socio-economic dominance,
high and low, describe contexts of rule-ordered behavior which may intervene
in the allocation of rural public policy goods.

Patron-client associations rest upon inequalities in the distribution
of economic resources and in the distribution of status. Patrons control
economic wealth upon which subservient peasant populations depend for marginal
economic subsistency. Carl Gotsch (1972) describes the relationship of land
distribution to local-level politics in rural areas:

> Those with a command over land assets are fortunate.
> For two other groups, tenants and landless laborers,
> opportunities to exercise a claim to a portion of the
> benefits of technical change of any sort are at best
> tenous. . . . The effect, however, transcends the
> mere fact that one group is made better off relative

> to another in terms of material benefits -- the
> income distribution question. It alters the
> distribution of power, as well. (1972: 328-
> 329).

Land distribution is an important parameter of political power and influence in rural areas.

In India, large landholders have acquired and maintained status and authority, often by force.[2] Influence and power based upon land were legitimized by British colonial administration. The British interferred infrequently with local administration in princely states while non-princely India was governed by the Indian Civil Service (I.C.S.), a British institution served by Englishmen and later a few Indian recruits. British administrators interferred little with patterns of social interaction, and this stance reinforced an existing social order.[3] This social policy order has been partly described as a "caste" system which is structured by ritual status and wealth distribution. Person's behaviorial expectations, both in their individual and group situations, are codified into a system of rules. These social rules are not entirely unchanging, but they evolve across generations, in most cases; and while there is regional variation in caste systems' rules, the major division between "twice-born" castes -- Brahmin, Bania, and Rajputs and other clean castes is consistent for Rajasthan.[4]

At the bottom of the system are untouchable castes and economically depressed tribals. "Untouchables" were termed harijans (children of God) by Mohandas K. Gandhi and harijan remains synonymous with low status and economic deprivation. Following Independence, the new Government of India retained a British Census category for harijans. These are designated as "scheduled" in the Census of India and the particular castes vary from state

to state. Economically deprived tribal groups are also designated as "scheduled tribes" and receive numerous, but small, governmental benefits, as well.[5]

Walter Neale's insights about harijans in economic terms are useful for this analysis:

> Two assumptions about Indian reality appear to be supported by the literature, by observation and by landholding census: (1) that most harijans do not own land, or enjoy the benefits of 'protected tenancy;' and (2) that most harijans 'earn' an important part of their incomes by working on the land of others and/or attaching themselves to landholding cultivators. These assumptions allow harijans to be regarded as 'labor' for the purposes of economic analysis. (1972: 57-66).

One might add these assumptions allow scheduled castes to be regarded as "clients" who are mobilized depending upon the distribution of economic and political resources in a local context. Where land distribution is unequal and there are high percentages of scheduled castes, there is a greater possibility of a patron-client context. At the same time, where land distribution is less unequal and there are low percentages of scheduled caste populations, patron-client contexts are less viable. Variation in land and status distribution within agrarian societies is not often mentioned in the development literature. Where references appear, empirical indicators are seldom suggested.

Where Chapter Three examined the impact of economic and electoral environmental factors upon the distribution rural public policy goods, this chapter accounts for the interaction of governmental policy-actors with an important institutional factor, the degree of concentration of socio-economic resources in the environment. In Curry and Wade's terms, we are concerned

here with the "level and distribution of political resources among members of the polity." (1968: 97).

Socio-economic dominance may affect rural public policy distributions. Gartrell believes that patron-client associations (or elite dominance) are associated with higher levels of the distribution of rural public policy goods. His argument is that large landowners are better able to make demands upon state government for agricultural policy resources. Another point raised by Gartrell is that state-level administrators may favor large landowners because they bring more ready capital to bear on agricultural production. The chances for immediate success are high and the state government reduces its risk in investing scarce resources. Socio-economic dominance patterns reflect the presence of large land-owners at the constituency-level and a first prediction might be that constituencies with high concentration of socio-economic resources will receive higher levels of rural public policy goods.

The distribution of all rural public policy goods at the constituency-level may not be entirely a direct function of the concentration of socio-economic resources, however. The nature of the public policy good and the structure of the decision-making mechanisms in the state may have an impact on allocations. Those public policy goods which are highly divisible and, in this case, intended for community welfare might be perceived as useful for local-level political organization maintenance. In short, rural development funding through the panchayati raj structure may be most sensitive to patron and, therefore, party influence. These funds are likely to be utilized for patronage by members of both the regime party and opposition parties. At

the same time, more "lumpy" policy goods, such as rural electrification, are less sensitive to patron influence. Decisions for the electrification of several villages in a constituency are less likely to be influenced by large landlords. The autonomy of the decision-making apparatus and the resistance of decision-makers to political pressure might also make a difference in distribution. If anything, rural electrification patterns might reflect an avoidance of the political consequences of the concentration of socio-economic resources -- even when such a concentration might be an important economic reason for making an allocation.

Chapter One presents evidence that state-level governmental decision-makers account for economic and electoral factors in public policy distribution. We might ask now whether patterns of socio-economic dominance might change the manner in which environmental factors are associated with rural public policy allocations. For rural development funding rates, it is expected that in constituencies with a high concentration of socio-economic resources, the economic criterion of "need" might be less diligently applied. Local level patrons are better able to intervene through party organizations and influence the distribution of these funds. In constituencies with a low concentration of socio-economic resources, there might be less pressure from landed elites and the "need" criterion might be more strictly applied. Party fragmentation is seen, also, as an important electoral factor for rural development funding. The pressure of landed elite may make party fragmentation a more important consideration for state-level policy distribution. In areas where socio-economic resources are highly concentrated, the party fragmentation criterion for allocating rural development funds might be stronger than in constituencies where there is less concentration of socio-economic resources.

In this same vein, can socio-economic dominance patterns be expected to have an impact upon rural electrification? Irrigation and rural electrification are positively associated. State-level administrators may wish to avoid and guard against political interference from landed patrons and it may be expected that the irrigation criterion would be applied more strictly in constituencies with a higher potential for landed elite interference. Electoral mobilization rates are associated negatively with rural electrification and party fragmentation is not associated with rural electrification. Because the political party apparatus is only indirectly involved in rural electrification decisions at the constituency- and state-levels, it is unlikely that patterns of socio-economic dominance would change the functional relationship between electoral mobilization rates and rural electrification. The RSEB is more likely to deal with large farmers in a non-party context and, hence, economic criteria (such as irrigation), if any, are more likely to have an interactive effect with socio-economic dominance. Before returning to this theoretical discussion, it is helpful to become better acquainted with patterns of socio-economic dominance in Rajasthan related to land and status distribution.

Socio-Economic Dominance and the Rajasthan Case

Rajasthan's pre-independence political infrastructure is one example of the quasi-feudal society from which may new states have emerged. Rajasthan, formerly called Rajputana, was constituted of twenty-two (22) princely states witnin which there were several forms of revenue intermediaries. The most extensive was the jagirdari system in which local rulers, Rajahs and Maharajahs (Chiefs and Kings) assigned rights to others to collect revenue from farmers.

The Rajasthan Jagir Enquiry Committee (1952) estimated this system covered 16,780 villages and 77,110 square miles in Rajasthan in 1949.[6] These figures do not include holdings in villages where Rajahs and Maharajahs themselves performed revenue functions. Such settlements were termed khalsa villages. Another system, variously termed a zamindari or biswedari arrangement, operated in several regions of the state. The zamindari system, prevalent in what are now Alwar and Bharatpur districts, gave revenue collectors the districts, gave revenue collectors the right to rent, at will, to farmers. Jagirdari grants did not give this prerogative to intermediaries, rather tenants usually accumulated rights to the land and passed them on to subsequent generations.

While jagirdari resumption was accomplished in Rajasthan during the early 1950's, some political and economic vestiges of these feudal arrangements remain. Acts of the Rajasthan state legislature removed most of the insecurity of tenancy and rack-renting inherent in the zamindari and biswedari arrangements, but traditional landholding interests have been inserted indirectly into the state's new political institutions. In 1952, Rajasthan's first universal suffrage election, princely interests, loosely allied, succeeded in winning seats in the state legislative assembly. The Rajput political associations, the Bhuswami Sangh and the Ksyatriya Mahasabha protested jagirdari resumption.[7] The Ksyatriya Mahasabha, an electoral organization, endorsed 140 legislative candidates including those of the Raj Rajya Parishad, an outgrowth of the Bhuswami Sangh, in the 1952 elections. Of the 140 candidates, seventy-nine (79) were former jagirdars.[8]

Prior to the Third General Elections, in 1962, a new political party, the Swatantra Party,[9] was formed which included business and Rajput landed

interests. In 1962, the Swatantra contested nearly fifty percent (50%) of the legislative seats and won a sizeable number of seats and a large percentage of the electorate to become the second largest party in the state. While most Rajput leaders chose to run as candidates of opposition parties and as independents, others were coopted into the ruling Indian National Congress (INC) party by the Chief Minister, Mohan Lal Sukhadia, who ruled Rajasthan from 1954 through 1971. Sisson (1972) reports that a major factional struggle erupted in the INC with the eventual withdrawal of Jat (an ambitious agricultural caste) factions over the inclusion of Rajputs in the Cabinet.

Active participation in Rajasthan's political arena by former rulers and revenue intermediaries is based upon the mobilization of support through what the Rudolphs call "vertical mobilization." Elkins' (1972) analysis of electoral mobilization in South India reflects a vertical pattern of political support mobilization. This model is appropriate for Rajasthan. At the bottom of the ritual and economic ladders in Rajasthan are scheduled caste groups. These vary from district to district but the essential relationship between scheduled castes and twice-borns landlord groups remains constant. Scheduled castes are dependent to one degree or another upon the patronage of those who own land. These scheduled caste groups serve as tenants, at best, or agricultural laborers with no rights to land, at worse. Their survival depends upon assistance from land owners willing to give land or hire them. It is not unlikely that where patrons have more control over land, scheduled caste groups will yield to patrons' wills on electoral decisions.

Political participation is not limited to the electoral arena, however.
When Rajasthan was formed from the princely states of Rajputana, it was
without a state administrative service. The first state-employed adminis-
trators in Rajasthan were recruited from the princely state service.[10]
Though many of these administrators were not of Rajput caste, ties and
loyalties may have remained with the traditional order. Over time, recruit-
ment for state administrative services reflected performance criteria
rather than ascription. Yet, bargains are often sought between large
landholders and state-level bureaucrats.[11] These bargains included
privileged treatment or lucrative contracts. Such intrusion or "inter-
ference" in administrative decision-making is more strongly resisted by
members of the Indian Administrative Service (IAS), an all India, high
educated corp of bureaucrats, than by state service administrators.

Rajasthan's state-level rural development agencies' personnel include
members of the Rajasthan Administrative Service (RAS) and the IAS. Important
policy-actors at the state and district levels are from the IAS while policy-
implementors are usually members of the RAS or specialized development
services. There is an active movement among IAS officers to maintain central
authority for important rural public policy goods. A widely held view among
IAS officers is that local administrators are under the influence of
entrenched local elite, who include members of a landed aristocracy.

The administration of rural development funding and electrification may
reflect these characteristics in Rajasthan. The administration of panchayati
raj programs has been assigned, in the past, to RAS officers and others from
specialized services, viewed by IAS administrators (and some students of
Indian bureaucracy) to be at best, politically naive and inept and, at worst,

corrupt. Some research conducted on <u>panchayati raj</u> systems in Rajasthan reflects this concern. The administration of rural electrification, on the other hand, remains a more centralized functions. In some instances, District Agricultural Production Committees make strong recommendations on the allocation of electricity, but these are expected to adhere to rational guidelines explicated by the RSEB.[12] A number of hypotheses might by generated how associating rural public goods distribution rates and levels of socio-economic dominance.

HYPOTHESES

A three-part hypothesis is based on the discussion above. The hypothesis deals with rural development funding rate averages and socio-economic dominance, then with rural electrification averages and socio-economic dominance, and, finally, with the functional relationships between economic and electoral factors and rural public policy distribution as they may be dependent upon socio-economic dominance.

<u>Hypothesis 4.1</u>: high socio-economic dominance is associated with higher average rural development funding rates;

<u>Hypothesis 4.2</u>: high socio-economic dominance is associated with lower average levels of rural electrifications; and,

<u>Hypothesis 4.3</u>: (i) in high socio-economic dominance contexts, the association between rural development funding rates and irrigation become less negative,

(ii) in high socio-economic dominance contexts, the association between rural development funding rates and party fragmentation becomes more negative,

(iii) in high socio-economic dominance
contexts, the association between rural
electrification and irrigation become
more positive.

Hypothesis 4.1 and 42. are qualifications of the simple prediction

made by Gartrell (1972) and Gotsch (1972) that elites get more of everything

regardless of who controls or what is the character of the policy good. The

intervening factors in this hypothesis is the level of concentration of

socio-economic resources at the constituency level. Hypothesis 4.3 predicts

that in some cases, socio-economic dominance contexts modify the relationship

between other environmental factors and rural public policy goods allocation.

Hypothesis 4.3 predicts that economic criteria are applied more stringently

in rural electrification decisions and less strigently in rural development

funding decisions where socio-economic dominance is high. There is also the

possibility that the regime party will be more cognizant of party cleavages

where socio-economic dominance is high. Party organizations are likely to

be composed of landed patrons who perceive the electoral system as means to

maintain or gain control over policy resources.

TESTS OF HYPOTHESES

Hypothesis 4 introduces an additional variable into the model or rural

public policy goods distribution. Socio-economic dominance is conceived to

be a contextual variable at the level of the Assembly constituency. It has

been defined theoretically in terms more familiar as patron-client associa-

tions. The other side of the patron-client variable is a situation in which

there is less concentration of socio-economic resources. Socio-economic

dominance is treated here as a nominal scale with two-categories: high, with

TABLE 4.1

SAMPLE CONSTITUENCIES GROUPED BY SOCIO-ECONOMIC
DOMINANCE TYPE

HIGH SOCIO-ECONOMIC DOMINANCE	LOW SOCIO-ECONOMIC DOMINANCE
District/Constituency	District/Constituency
Jhunjhunu:	**Jhunjhunu:**
	Jhunjhunu Mandawa Surajgarh
Sikar:	**Sikar:**
Neem-ka-thana	Singrawat Danta-Ramgarh
Jaipur:	**Jaipur:**
Sikrai Chomu Bassi	Amber Phulera Dudu Phagi Jamwa-Ramgarh
Alwar:	**Alwar:**
Mandawar Ramgarh Rajgarh Kathuman Tijara	Behror Bansur
Bharatpur:	**Bharatpur:**
Kaman Deeg Bharatpur Weir Bayana Rajakhera Dholpur Nadbai Bari	

TABLE 4.1
(Continued)

SAMPLE CONSTITUENCIES GROUPED BY SOCIO-ECONOMIC
DOMINANCE TYPE

HIGH SOCIO-ECONOMIC DOMINANCE   LOW SOCIO-ECONOMIC DOMINANCE

District/Constituency   District/Constituency

Sawai Madhopur: Sawai Madhopur:

   Mahuwa
   Sawai Madhopur
   Khandar

Ajmer: Ajmer:

                                                     Kishangarh
       Nsirabad
       Pushkar
       Bhinai

Bundi: Bundi:

       Bundi
       Hindoli

Kota: Kota:

       Digod
       Chabbra
       Pipalda

Udaipur: Udaipur:

   Sarada   Mavli
       Nathdwara
       Kumbhalgarh
       Bhim
       Gogunda
       Phalasia
       Lasadi
       Salumber

Bhilwara: Bhilwara:

       Bhilwara
       Asind

TABLE 4.1

SAMPLE CONSTITUENCIES GROUPED BY SOCIO-ECONOMIC
DOMINANCE TYPE

HIGH SOCIO-ECONOMIC DOMINANCE	LOW SOCIO-ECONOMIC DOMINANCE
District/Constituency	District/Constituency
Ganganagar:	Ganganagar:

Karanpur
   Ganganagar
   Suratgarh
   Hanumangarh
   Nohar	

Nagaur:	Nagaur:

Nagaur
   Jayal
   Ladnu
   Deedwana
   Merta
	Nawan

greater inequality of wealth and social dependency; and low, with less inequality of wealth and less social dependency. An index of socio-economic dominance has been developed (see Chapter Two) which places the sixty-four (64) sample constituencies into two groups, one high on socio-economic dominance and the other, low. The index of socio-economic dominance combines land distribution inequality measured by a Gini coefficient with the percentage of scheduled caste population in a constituency. Where land distribution is more unequal and the percentage of scheduled caste population is high, a constituency is high on socio-economic dominance; where there is less inequality in land distribution and the percentage of scheduled caste persons is relatively low, the constituency may be termed a low socio-economic dominance. There are thrity-two (32) high socio-economic dominance constituencies and thirty-two (32) low socio-economic dominance contexts. These constituencies are named according to their socio-economic dominance category in Table 4.1.

Socio-economic dominance categories are treated as dummy variables in the least squares regression equations. These dummy variables are

X_4 = 1, where socio-economic dominance is high,

0 otherwise; and,

X_5 = 1, where socio-economic dominance is low, 0

otherwise.

Hypothesis 4.1 and Hypothesis 4.2 predict the averages of rates of rural development funding and rural electrification vary according to socio-economic dominance contexts. The tests of the hypothesis proceeds by estimating the following equations:

Y_1 = a + $b_1 X_5$; and,

Y_2 = a + $b_1 X_5$; where,

Y_1 = rates of development funding; Y_2 = rural

electrification; and,

X_5 = 1, where socio-economic dominance is low, 0

otherwise.

Because the hypotheses specify the average of rates of rural development spending and rural electrification, the <u>intercepts</u> of the equations are of interest. For high socio-economic dominance constitutencies, the intercept is (a); for low socio-economic dominance constituencies, the intercept is $(a + b_1)$. An F-test is used to determine the significance of the equations and parameters.

Hypothesis 4.3 expresses predictions about the associations between rural development spending, rural electrification, and economic and electoral factors. The tests of this hypothesis depends upon the significance of partial slopes for economic and electoral factors regressed on rural development funding rates and rural electrification. The tests of these hypotheses are most appropriately made by analysis of covariance techniques. These techniques are outlined in Chapter Two.

Hypothesis 4.3 is tested by estimating the following equations:

Y_1 = $a + b_1X_k + b_2X_5 + b_3(X_k*X_5)$; where

i = a subscript for one of the two dependent

variables;

k = a subscript for one of the three independent

variables;

X_5 = 1, where socio-economic dominance is low, 0

otherwise; and,

$(X_k {*} X_5)$ = an interaction term for an independent

variable and the dummy variable (X_5).

Both intercepts and slopes may be examined using the equations above. For high socio-economic dominance contexts, the intercepts are the set of (a); for low socio-economic dominance constituencies, the intercepts are the set of $(a + b_2)$. Partial slopes for the high socio-economic dominance context are the set of (b_1) and for the low socio-economic dominance context are the set of $(b_1 + b_3)$. Each parameter and equation are tested for significance using an F-statistic. This procedure is outlined in Suits (1957), Blalock (1972), and Namboodiri (1975).

Finally, it is also of interest to determine whether or not the addition of socio-economic dominance contributes to a statistical resolution of the variance in rural development funding rates and rural electrification. Two least squares equations are estimated to determine the level of the coefficient of multiple determination (R^2) for development funding and electrification including socio-economic dominance. These equations take the form:

$$Y_i = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_5 + b_5 (X_1 {*} X_5) +$$

$$b_6 (X_2 {*} X_5) + b_7 (X_3 {*} X_5).$$

If interaction terms are not significant in the tests of Hypothesis 4.3. those interaction terms are excluded.

Hypothesis 4.1 and Hypothesis 4.2. Table 4.2 shows the results of tests of Hypothesis 4.1 and Hypothesis 4.2 which predict that average rural development funding rates are higher in high socio-economic dominance contexts and

TABLE 4.2

SOCIO-ECONOMIC DOMINANCE AND RURAL PUBLIC POLICY DISTRIBUTION

SOCIO-ECONOMIC DOMINANCE

	High (X_4)	Low (X_5)	
Rural Development Funding Rates (Y_1)	a = 0.793	a = 0.422	F = 6.087* p = .01
Rural Electrification Percentages (Y_2)	a = 0.331	a = 0.404	F = 1.036** p = .10

*$Y_1 = a + b_1X_5$; d.f. = 1, 62
**$Y_2 = a + b_1X_5$; d.f. = 1, 62

rural electrification averages are lower in high socio-economic dominance contexts. The data indicate a significant difference between socio-economic dominance contexts on rural development funding. In high socio-economic dominance contexts the average rate (a = 0.793) is higher than in low socio-economic dominance contexts ((a + b_1) = 0.422). The results are significant (F = 6.087; d.f. = 1,62; p. = .01).

The results for rural electrification are unclear. The direction of the hypothesis is supported, but weakly. Average distributions of electricity are higher in low socio-economic dominance contexts and lower in high socio-economic contexts. The equation is not significant at a high enough level to rule out chance in the findings, however (r = 1.036; d.f. = 1,62; p. = .10). The standard error of the coeeficient (s_{b_1}) is less than the coefficient, however, suggesting the sign is valid. This may be interpreted cautiously as saying that low socio-economic dominance constituencies average more rural electrification allocations.

Hypothesis 4.3. Hypothesis 4.3 (i) predicts that the negative association between rural development funding rates and irrigation will be reduced in high socio-economic dominance contexts. A significant partial slope allows the rejection of the null hypothesis of no difference. Hypothesis 4.3 (ii) predicts an increase in the negative partial slope for rural development funding rates and party fragmentation for high socio-economic dominance contexts. And, Hypothesis 4.3 (iii) predicts a more positive partial slope for rural electrification and irrigation in high socio-economic dominance contexts. Table 4.3 presents the results of regression analysis using a dummy variable for socio-economic dominance. The equation estimated in Table 4.3 is

TABLE 4.3

TABLE 4.3

Dependent Variable	Independent Variable	(a)	High (b₁)	Low (a+b₂)[1]	(b₁+b₃)[2]	(R²)	(F)[3]
Y_1	X_1	0.921*	-0.580	0.783	-1.412	0.149	3.502 (p=.05)
	X_2	0.831*	-0.442	0.483*	-0.279	0.103	2.306 (p=.05)
	X_3	-0.876*	0.025*	-0.575	0.017	0.196	4.873 (p=.05)
Y_2	X_1	0.237**	0.429*	0.383**	0.084	0.049	1.033 (p=.10)
	X_2	0.374*	-0.496*	0.521*	-0.551	0.158	3.763 (p=.05)
	X_3	0.458	-0.002	0.326	0.000	0.019	0.387

[1]The significance test for $(a+b_2)$ is equivalent to $(a - (a+b_2)) = 0$, or $b_2 = 0$; (see Johnston, 1972: 179), (Namboodiri, et al., 1975: 203-204), and (Blalock, 1972: 496).

[2]The significance test is for $b_1 = (b_1+b_3)$ or $(b_1 - (b_1+b_3)) = 0$, or $b_3 = 0$. See sources in note 1 above.

[3]The regression equation estimated is $Y_i = a + b_1X_k + b_2X_5 + b_3(X_k*X_5)$, where it is a subscript for a dependent variable; k is a subscript for an independent variable; $X_5 = 1$, where socio-economic dominance is low, 0, otherwise; and (X_k*X_5) are interaction terms (R^2) and (F) are for these equations (d.f. = 3, 60).

*p = .05
**p = .10

$$Y_i = a + b_1 X_k + b_2 X_5 + b_3 (X_k * X_5).$$

This regression equation allows estimation of both intercepts and slopes for each independent variable on each dependent variable by socio-economic dominance contexts. With one exception, the equations are significant.

The evidence indicates the change in the partial slope for rural development funding rates and irrigation occurs in the predicted direction (Hypothesis 4.3 (i)); however, it appears to be insignificant. Findings are similar for Hypothesis 4.3 (ii) which predicts a positive shift in the partial slope for rural development funding rates and party fragmentation. The partial slope is significant for high dominance contexts, but is not significant for low socio-economic dominance contexts. And, there is some limited evidence for Hypothesis 4.3 (iii) which predicts that rural electrification will follow irrigation percentages more closely in high socio-economic dominance contexts. Again, however, the partial slope is not significant for low socio-economic dominance contexts.

None of the interaction terms are significant and in the goodness-of-fit exercise none are included. Only the dummy variable for socio-economic is included in the equation. Table 4.4 provides a summary of the goodness-of-fit for the model with the addition of socio-economic dominance. The partial slopes for the dummy variables are significant. The coefficient of multiple determination (R^2) for rural development funding rates (Y_1) is increased by the addition of socio-economic dominance from $R^2 = 0.207$ to $R^2 = .229$. The addition of socio-economic dominance produces an increase in R^2 for rural electrification from 0.176 to 0.207, but the increment is not significant.

TABLE 4.4

RURAL PUBLIC POLICY DISTRIBUTION, THE POLICY ENVIRONMENT, AND SOCIO-ECONOMIC DOMINANCE

Dependent Variable	Independent Variable	(a)	(b)	(s_b)	(r)	$(R^2$ change)	(F)[1]
Y_1	X_1		-0.754	0.470	-0.26	0.065	2.567 (p=.05)
	X_2		-0.103	0.358	-0.20	0.009	0.083
	X_3		-0.020	0.008	0.40	0.081	6.220 (p=.01)
	X_4		-0.199	0.154	-0.30	0.074	1.658 (p=.10)
		-0.419			$R^2 = 0.229$		F = 4.381 (p=.10)
Y_2	X_1		0.347	0.219	0.17	0.028	2.525 (p=.05)
	X_2		-0.587	0.166	-0.32	0.155	12.440 (p=.01)
	X_3		-0.004	0.004	-0.09	0.012	0.913
	X_4		0.112	0.072	0.13	0.012	2.421 (p=.10)
		0.552			$R^2 = 0.209$		F = 3.888 (p=.01)

[1]The equation estimated is $Y_i = a + b_1X_1 + b_2X_4$, where i is a subscript for a dependent variable; X_1, X_2, X_3 are irrigation, electoral mobilization rates and party fragmentation, respectively; and $X_4 = 1$, where socio-economic dominance is high, 0, otherwise; see (Suits, 1957) for a discussion of why only one category of the dummy variable (X_4, X_5) is included in the equation. d.f. = 4, 59.

Summary of Findings. As predicted socio-economic dominance patterns
have an impact on rural development funding rates. These rates are higher
where socio-economic dominance is high. There is only mixed evidence for
socio-economic dominance patterns and rural electrification. High socio-
economic dominance contexts received less electrification, on the average,
than did low socio-economic dominance contexts for the period of 1967
through 1971, but the results are only marginally significant. There is
only weak support for hypotheses which predict changes in the functional
relationships between rural public policy goods allocation and electoral
and economic factors. Though some changes are in predicted directions, the
changes are not significant.

DISCUSSION

The findings for this chapter are important for at least two reasons:
first, they allow inferences about the distinctions between the nature and
control of public policy goods when controlling for a much discussed (but
little measured) variable, socio-economic dominance; and second, the
techniques and design used to test propositions generated by the discussion
are developed so as to be generizable to many policy situations.

It can be inferred divisible public policy goods controlled by an
organization interlocked with the electoral machinery of the political party
system are utilized to provide patronage resources in local level land elite.
High socio-economic dominance contexts receive rural development funds at a
higher rate than do low socio-economic dominance contexts. While political
parties have not yet been introduced into the set of institutional variables
(see Chapter Five), if patrons and landed elite are the focal point for

party organization, we can infer that they use whatever influence available to receive more rural development funds through the panchayati raj organizations of Rajasthan. This is not a new assertion, but it is a new finding. While many have stated that this occurs, there have been few empirical investigations of this hypothesis.

Further, those who assert the association between rural elites and higher levels agricultural policy distribution (i.e. Gotsch (1972)) and those who have tested this proposition (Gartrell, 1972), have not attempted to indicate empirically how socio-economic dominance affects distribution decisions. While the evidence given here does not suggest an end to further investigations, it does support the proposition that in high socio-economic dominance contexts the apparent rule for distribution ("need") can be adjusted considerably. There is limited evidence that state-level deliberation on party cleavages interacting with socio-economic dominance encourages rural development funding distributions, as well. There is the likelihood that high socio-economic dominance and high party fragmentation receive significantly higher rates of rural development funds. However, the evidence is not strong enough to make this assertion without qualification.

It is inferred that "lumpy," production-oriented public goods controlled by an autonomous governmental agency can remain relatively immune tp pressure from landed elite. There is some data to suggest that high socio-economic dominance contexts receive less rural electrification than do low socio-economic dominance contexts at the constituency level. There is limited support, also, for a decision-rule bringing together the effects of socio-economic dominance and irrigation percentages for rural electrification. While the assertion must be tentative, in high socio-economic dominance contexts,

there is a more careful application of an economic criterion for rural electrification than in low socio-economic dominance constituencies. While this may be a function of sampling or some other undefined or uncontrolled variable, it might imply that RSEB administrators and engineers are more likely to apply the letter of the law to those who might be in a position to interfere in the distribution process.

Generalizing about rural public policy decision-making rules applied by state-level decision-makers from constituency-level data without direct recourse to direct statements from the decision-makers themselves is tricky. It brings to bear all of the warnings about "ecological fallacies." However, this chapter introduces the application of the analysis of covariance at the lowest level of aggregation relevant to the decision-making process in Rajasthan. Short of asking administrators and regime party policy-makers about why they make specific allocations, this method appears to be appropriate. There are many situations in which the same or similar hypotheses might be tested for Indian and other national or sub-national contexts.

To this point the discussion and hypothesis testing has included only one institution variable. Chapter Five, to follow, tests the impact of political party dominance upon rural public policy allocations and attempts to determine whether or not consideration of political party control by the regime party and RSEB administrators changes the associations between rural public policy distribution and economic and electoral factors.

FOOTNOTES

[1] Powell (1970) includes "face-to-face" interaction as a third aspect of patron-client associations. The literature on patron-client relationships is extensive. See Scott (1970, 1972), Lemarchand (1972), Silverman (1965), and Weingrod (1968).

[2] Patron-client ties have been institutionalized by the administrative arrangements inherent in colonial domination. See Blau (1963) for a discussion of institutionalization and Fox (1971) for an analysis of the establishment of "feudalism" in princely India. Thorner's (1961) treatment of feudal systems describes princely India and Todd's (1847) Annals and Antiquities of Rajasthan is a narrative recording a British officer's first hand acquaintance with 19th Century Rajasthan as well as complete descriptions of important princely families.

[3] V. P. Menon's (1956) recollections of the diplomacy linking the former princely states include descriptions of treaty relationships between the British raj and Rajputana's princely states. Malgonkar's The Prince (1965) portrays vividly the transition from the old princely order to the new following World War Two by focussing upon an older, more traditional prince and his son.

[4] See Marriott (1965) for an excellent discussion of regional variations in India's caste systems.

[5] The last Census of India including caste was taken in 1931. The Census was taken for the princely states using Rajputana's thikana or pargana (substate units) as the lowest recording unit. Depending upon the size of the princely state the thikana or pargana are equivalent to a revenue area about the size of the current tehsil. Tehsil boundaries after reorganization of Rajputana into Rajasthan were redrawn purposely to blur pargana, thikana, and, of course, princely state boundaries.

[6] This discussion is supported by an important survey of land tenure systems in Rajasthan written by Dool Singh (1964).

[7] See Rudolph and Rudolph (1968).

[8] This is taken from Shrader (1968).

[9] See Erdman (1967) and Coyer (1965) for descriptions of the Swatantra Party.

[10]See Singh and Rudolph (1973) for an edited version of Colonel Amar Singh's diary which recounts the character of decision-making in several of Rajputana's princely states during the 19th century.

[11]While allegations of corruption are made often, many of the "bargains" are struck between government officials and larger farmers or landholders who are in a position to perform a service to the Government without the latter's investment of capital. The contracts also, clearly, benefit the farmers and landholders.

[12]See Chapter One for a brief description of the District Agricultural Production Committee; see also Mathur (1971).

CHAPTER FIVE

POLITICAL PARTY DOMINANCE AND DISTRIBUTION

INTRODUCTION

A second institutional factor may not be introduced into the model of rural public policy goods distribution. Control of an Assembly seat by either the regime political party or by a Member of an opposition party may influence regime party policy decisions. Political party dominance is defined as a qualitative factor wherein the regime party may control the Assembly seat for a constituency or an opposition party may send a Member to the Assembly. The simplest hypothesis is that the regime party aids its own Members and withholds scarce resources from Members of opposition groups or parties. This hypothesis might be modified, however, if the types of public policy goods and the structures of the distribution systems for these policy goods are taken into account. There may also be interaction effects for the combination of some economic and electoral factors and political party dominance which will have an impact on the distribution of scarce policy goods. Hypotheses about political party dominance and rural public policy goods distribution are formulated and tested in this chapter.

Public Policy Allocation and Political Party Dominance

Curry and Wade (1968) propose that the manner in which the political marketplace is structured has a bearing on the distribution of public policy

goods. In democratic political systems, the electoral process may give
clues to elected representatives on how to invest society's scarce resources
to achieve desired political outcomes. The electoral system consists of
several components. First, the system provides rules for structuring
relationships between electoral units and legislative assemblies.
Schlesinger's work (1965, 1966) draws attention to the manner in which
electoral constituencies are grouped and to the ways candidates build party
organizations. In some places, where candidates run without party designation,
an "independent" legislator may be sent to the Assembly. Regime parties are
those which send Members to the Assembly and constitute the ruling majority.
Opposition parties send Members to the Assembly who are not part of the
ruling party or coalition. Independents returned to the Assembly are included
here with the opposition.

A second feature of democratic political systems is the set of motiva-
tions which shape political party organizations and can be related to party
activities. In general terms, according to Ilchman and Uphoff, political
parties are

> created for the purpose of mobilizing sufficient resources
> to acquire authority and/or exercise it once it is achieved.
> (1969).

Political parties need electoral support in order to function in the distribu-
tion of policy goods or exercise political power.[1] Both Schlesinger and
Downs (1957) maintain that a strong motivation for elected officials is the
maintenance of their own offices and the electoral success of their parties'
strength. Downs hypothesizes that

> party members have as their chief motivation the desire
> to obtain the intrinsic rewards of holding office; there-
> fore, they formulate policies as means to holding office

>   rather than seeking office in order to carry out
>   preconceived policies. (1957: 296).

It is assumed that political parties and their elected Members to the Assembly

work within rules of the system in order to win elections.

An additional factor is how Members achieve that goal. Members of the

regime party assess information received from the electoral environment.

Regime party leadership may dismiss much information if they have a large

majority in the Assembly. As the Assembly becomes more competitive -- as

more Members of opposition parties are returned -- the regime party may re-

direct its attention to the electoral arena.[2]

At some point in the decline of regime party strength in the Assembly,

greater attention might be given to cleavages between parties within

constituencies. Party cleavages (summarized empirically here as party

fragmentation) give an estimate of the fluidity of the electoral environ-

ment. Przeworski and Sprague (1971) have utilized the idea of "fluidity"

in their discussion of how party leaders calculate the chances of victory

in a constituency. They argue that the electoral environment is important

to regime party decision-making:

>   The chances for victory must be evaluated in terms of
>   the fluidity of the system . . . (T)he expected propor-
>   tion of shifters constitutes the standard unit in which
>   the distance dividing a particular party from victory
>   should be measured. (1971: 202).[3]

It is reported in Chapter Three that party fragmentation, controlling for

electoral mobilization rates, is associated positively with the distribution

of public policy goods. The more fragmented the party system in a constitu-

ency, the greater the chance that a smaller percentage of the electorate may

affect the electoral outcome. Public policy goods decisions may be based

on which party is in power or controls a constituency and the fragmentation

of the party system. One hypothesis emerging from the discussion to this point is that regime party constituencies might be expected to benefit from their Members' ability to influence the distribution of public policy goods. Opposition parties' constituencies may receive less of whatever policy goods are to be distributed. This simple hypothesis does not account, however, for the types of public policy goods distributed and who controls them (in what kind of organizational framework). The preliminary assertion which relates political party dominance to rural public policy goods distribution can be modified to include an analysis of the type of public policy good and the administrative framework within which distributions are made.

Throughout this work it is emphasized that different types of public policy goods are distributed through governmental policy machinery. The analysis includes, first, those policy goods which are useful for patronage within constituencies and are controlled by a direct influence from the regime political party and, second, more "lumpy" policy goods allocated by an autonomous governmental agency insolated from direct political party influence.[4] Political parties, especially the regime party, should be in an advantageous position to influence the allocation of public policy goods which are distributed through agencies dependent upon elected officials at several levels for critical decision input. Other policy goods intended for economic productivity and controlled by an autonomous agency might be less subject to political party pressures. An earlier proposition that there was a direct and unaltered association between the regime party in power can be modified to account for the differences in types of policy goods and the mechanisms through which they are allocated.

There might be a further refinement of the political party dominance hypothesis. Policy decision-makers in either the regime political party or

in administrative agencies may perceive political party dominance in combination with some economic or electoral factor as more important than either political party dominance or the environmental factor alone. Certain levels of an environmental factor with political party dominance may have greater impact on rural policy distribution decisions than either party dominance or the environmental factor separately. For example, if "need" (low on irrigation percentages, let's say) is a criterion for the distribution of regime party controlled policy goods, the criterion may be applied less consistently in regime party Members' constituencies than in those controlled by opposition parties. Also, if party fragmentation is associated positively with policy goods allocation, the association may be more positive in opposition party constituencies than in regime constituencies, if the regime party rewards its own Members and seeks to win elections in those of opposition parties' Members.

Because political parties have little access to public policy goods controlled by autonomous governmental agencies, there is small chance that political party dominance will have much to do with the distribution of those policy goods. It is difficult to hypothesize any interaction effects for political party dominance and environmental variables as they may have an independent impact on rural electrification. Before formally stating hypotheses linking political party dominance and rural public policy goods distribution, attention is directed to relationships between political party organization and decision-making on policy in Rajasthan.

Political Parties and Rural Policy Distribution in Rajasthan[5]

Since 1952 Rajasthan has chosen its decision-makers through direct election, the most important of whom are those with ministerial status and

Members of the regime party. In the prevailing parliamentary system,
development priorities are theoretically determined by state Cabinet
Ministers. However, the demands and recommendations made by district-
and local-level political actors are especially critical where support
for elected Members is hierarchial. Ministers depend upon backbencher
support in the formation and maintenance of a government; but this
support must be reciprocated in order that the Members can maintain their
own electoral strength. In order to do so, each Member must command
sufficient resources to fulfill development obligations in his own con-
stituency. Recent studies of electoral behavior in India indicate the
average voter's perception of the "public interest" is becoming oriented
to material well-being and that candidate affiliation for voters is no
longer entirely determined by caste or kinship, but rather by perceptions
of the Member's effectiveness in the state capital.[6] The voter is beginning
to appraise his Member on the ability to provide critical material resources.

Paralleling the elected officials' hierarchy is an administrative frame-
work active in the implementation and formation of public policy. Depart-
ments of Land Revenue, Agriculture and Food, Cooperation, Home and Develop-
ment operate in the rural sectors. In addition, there are specialized
agencies for electrification and irrigation in coordination with and some-
times in conflict with other administrative departments. Provisional policy
is framed in the various departments by Ministers in consultation with their
secretaries and staff who are non-elected administrative personnel of the
Indian Administrative Service and the Rajasthan State Administrative Service.
Usually policies are approved by the assembled Cabinet unless they require

major appropriations; if so, they must be passed by the legislative Assembly. Policies are enacted through the directives of the government to secretaries whose orders are transmitted downwards through departmental channels. Each administrative department has personnel at district-level who, endowed with substantial discretionary powers, execute department orders.

In the Rajasthan and Indian contexts, the critical levels relating to agricultural policy are the tehsil/constituency, the district and the state. In Rajasthan, both elected leaders and appointed officials have vital roles to play in development policy at all levels. Constitutionally these rules are distinct but in practice, there is considerable informal interplay between administrative and political actors at the same level and between levels.

Rural Development Funding and Political Party Organization.[7] While partisan politics is outwardly eschewed in the panchayati raj system, some panchayat samiti activity involves the state's political party system. Rural people condemn unequivocally anything resembling "party politics" (which can mean village factional disputes); however, there is a fundamental relationship. The panchayat samiti organization functions in an arena congruent geographically with the Assembly constituency. Prior to panchayati raj, candidates for Assembly seats were nominated largely without regard to local considerations and chosen because of loyalty to the party or in payment for party service outside the constituency or, perhaps, in another state. But the advent or local self-government has changed this nominating procedure. Local panchayat samiti organizations are critical for the maintenance of political support for candidates to the Assembly. Where panchayat samiti

leaders themselves have not challenged a Member in a direct contest, they have often acted as "king-makers" by giving or withholding support.

Iqbal Narain's study of Panchayati Raj in Rajasthan (1966) focuses upon three panchayat samitis where links between pradhans (panchayat samiti chairmen) and Members are clearly traced. My own data indicate that many Members either have had panchayat samiti service backgrounds or have received support from panchayat samiti influentials.

Narain arrives at three important conclusions in his study of panchayati raj in Rajasthan:

> The pradhans have emerged as key political figures and political parties and state level leaders try to woo them;
>
> (T)he pradhans can overshadow the M.L.A. (Member) and, in fact, sometimes even act as M.L.A. (Member) makers; and,
>
> (T)he political bearings of panchayati raj have a close impact on the pattern of emerging administrative relationships and the problem of supervision. (Narain, 1966: 240).

The increasing importance of panchayat samiti organization has brought younger, locally-oriented political leadership into the regime political party, the Indian National Congress. These new leaders, whose electoral and political successes are grounded in panchayat samiti and constituency activities, attempt to utilize one of the policy resources most familiar and accessible to them: rural development funds available to them in the panchayati raj system. Narain, et al. (1969) report incidents of manipulation of panchayati raj funds within constituencies as political resources though their analyses tend to emphasize the dilatory aspects of political

interference. It is clear <u>panchayati raj</u> funding, though relatively small in magnitude (and diminishing) has been a resource in the maintenance of local political organization by <u>pradhans</u> and Members.

<u>Rural Electrification and Political Party Organization</u>. Control of rural electrification rests with the Rajasthan State Electricity Board (RSEB). Under the 1948 Act, state electricity boards are established as autonomous commercial bodies under the control of states. This is done to keep them clear of political interference and to "rationalize" the allocation of electrification. The RSEB's authority to allocate electrification to villages in Rajasthan is final but decisions made according to explicit economic criteria are often modified by a number of political factors. Hadden (1972) reports several of these to be intra-agency conflict, conflict between levels of government, and conflicts between sectors. Of central importance for this analysis is Hadden's description of the other "political" factors which cause deviation from economic criteria in the allocation of rural electrification.

The regime political party, under the Electricity (Supply) Act of 1949, appoints members of the RSEB. The Chief Minister, as the head of the Assembly majority, appoints these officials. Formally, there is potential for the inclusion of political performance criteria in electrification decisions. The RSEB itself has tended to support the interests of large farmers rather than those of small farmers. The RSEB's ruling that potential customers could hasten the installation of electricity by payment of seventy-five percent (75%) of the cost provides an incentive for large farmers, though we have seen that socio-economic dominance is inversely associated with the overall allocation of electrification in constituencies.

There is little evidence, however, that political party considerations loom large in the allocation of electrification in Rajasthan at anything but the individual village level. While there are constant charges of "corruption," a loosely defined and easily bandied term in Rajasthan's political lexicon, collusion between RSEB administrators, district administrators, and political party officials is rarely proved. Some political considerations are relevant to village-level electrification in Rajasthan, however. Hadden reports the Chief Engineer of the RSEB and the Deputy Director of Agriculture as stating:

> Rural electrification affects such a tiny portion of the villages, what matter if it is determined scientifically or politically?

> We will electrify all the villages eventually, so what difference if they get it earlier or later. (Quoted from Hadden, 1972: 313).

While such nonchalance may appear unusual, it bears remembering that both the Chief Engineer and the Deputy Director of Agriculture are administrators and insolated from the accountability of a political party organization and an electorate. The administrative boundaries established by statute provide a cushion against forceful political pressure. Political party factors may be confined mainly to intraconstituency matters. A particularly astute legislator may be able to influence a decision on electricity for a specific village within an Assembly seat. There may be a village which will receive electrification before others with equal economic qualifications. Interconstituency allocation of electrification is unlikely to be affected by state-level political party factors.

Hadden's analysis of electrification in Rajasthan further shows that regime party constituencies, perhaps because there are more of them, receive

more electrification on strictly an economic criteria. Her data on panchayat samiti leadership and party affiliations indicate that regime party panchayat samitis, in fact, receive less than their share of electrification while "mixed" panchayat samitis (perhaps more competitive ones) receive slightly more (Hadden, 1972: 332). In general, the constituency levels on electrifi- cation may be expected to be unaffected by political party organizations.

Rajasthan's regime political party may pay special attention to at least two environmental factors in conjunction with political party dominance at the constituency level. A need criterion for the allocation of rural development funding may be expected to be applied more judiciously in opposition Members' constituencies than in regime party Members' constitu- encies. In addition, if the regime party wishes to win opposition Members' constituencies, party fragmentation can be expected to be more positively associated with rural development funding rates in opposition constituencies than in regime party constituencies. There is no apriori reason to hypothesize on rural electrification and the interaction of political party dominance and any environmental factor.

HYPOTHESES

The theoretical discussion and description of the involvement of political party organization in rural development funding through panchayati raj struc- tures and rural electrification through the Rajasthan State Electricity Board lead to a multiparty hypothesis. First, there is a prediction about political party dominance at the constituency-level and average rural development fund- ing rates. A second part associated rural electrification percentages and political party dominance. The last part of the hypothesis predicts the

significance of interaction terms as they affect the relationships between environmental variables and rural public policy allocations.

Hypothesis 5.1: regime political party constituencies receive higher average rates of rural development funding than do opposition parties' constituencies;

Hypothesis 5.2: there is no difference between regime political party constituencies and opposition party constituencies on the distribution of rural electrification; and,

Hypothesis 5.3: (i) in opposition party constituencies, the negative association between rural development funding rates and irrigation will be stronger than in regime party constituencies,

(ii) in opposition party constituencies, the positive association between rural development funding rates and party fragmentation will be stronger than in regime party constituencies.

Hypothesis 5.1 reflects the earlier observation that panchati raj organizations are intertwined with political party organizations. My own data on Members' backgrounds indicate they are now more likely to be former pradhans and/or pramukhs (chairmen of the zila parishad) that would have been the case in the early 1960's. While the amounts of funding are never high, they may be sufficient to provide brokerage fees for key political actors at the constituency-level who, in turn, may mobilize voter support. Decision-making for rural development funding though panchayati raj institutions is performed by the regime political party and where Members are of the regime party, they may be expected to reap some small reward, at least.

Hypothesis 5.2 covers rural electrification. It has been noted that electrification decisions are made by the autonomous Rajasthan State Electricity Board (sometimes taking the recommendations of the District Agriculture

Production Committee) whose members are appointed for their knowledge of the technical components of agricultural development and electrification. Though initial appointments to the Board are made by the Chief Minister, the actions of the Board are subject rarely to Assembly review. It would be unlikely that electrification decisions are made with an eye to whose party controls a given constituency. While RSEB administrators will be cognizant of the Member from a constituency and may even award electrification to villages of the Member's choosing within the constituency, there is little indication that cross-constituency allocations are affected by political party considerations.

Hypothesis 5.3 states the expected functional relationships between rural development funding rates and interaction terms for environmental factors and political party dominance. Hypothesis 5.3 (i) asserts that the regime party will hold to an economic criterion, earlier stated to be "need," more strictly for opposition constituencies and bend that same criterion for their own Members' constituencies. Hypothesis 5.3 (ii) predicts that the regime party will reward opposition constituencies which are high on party fragmentation at a rate of development funding near that of regime party constituencies while giving less to opposition constituencies which show much less party fragmentation. It will be recalled that Hypothesis 5.1 predicts a lower average rate for opposition constituencies than for regime party constituencies. Party fragmentation and rural development funding rates will be more positively associated in opposition party constituencies than in regime party constituencies.

TESTS OF HYPOTHESES

Hypothesis 5 adds another variable, political party dominance, to the model stated in Chapters One and Three. Political party dominance is a qualitative factor which means that either the regime political party, the Indian National Congress in Rajasthan, controls a constituency or that a Member of an opposition party or an independent is send to the Assembly from the constituency. Each dependent variable, rates of rural development funding (Y_1) and rural electrification percentages for 1967-1971 (Y_2), is analyzed individually in a bivariate regression equation with the nominal scale, political party dominance. The equation(s) to be estimated is (are)

$$Y_i = a + bX_7, \text{ where}$$

    i is a subscript for a dependent variable; and

    X_7 = 1, when the opposition party sends a Member to the Assembly, and 0, otherwise.

For Hypothesis 5.1 and Hypothesis 5.2, regime party constituencies' intercepts are the set of (a); for opposition constituencies, the intercepts are the set of (a+b). An F-test is applied to the significance of the difference between intercepts.

The tests of Hypothesis 5.3 are conducted through analysis of covariance techniques. Chapters Two and parts of Chapter Four review covariance techniques, and a complete discussion here is unnecessary. Both nominal and interval scales are combined in a regression equation. Tests of significance for intercepts may be applied. Political party dominance, as a nominal scale,

one independent variable, and an interaction term are included in each equation. Hypothesis 5.3 is tested by estimating

$$Y_i = a + b_1 X_k + b_2 X_7 + b_3 (X_k * X_7) + E; \text{ where,}$$

i   is a subscript for one of the dependent variables;

k   is a subscript for one of the independent variables;

X_7 = 1, where an opposition Member is sent to the Assembly, 0 otherwise;

$(X_k * X_7)$ are interaction terms; and,

E =   an error term.

The intercepts for regime constituencies are part of the set of (a) and those for opposition constituencies are part of the set of $(a+b_2)$. The partial slopes in the regression equation are of fundamental interest for Hypothesis 5.3 and are represented for regime constituencies as (b_1) and for opposition constituencies as (b_1+b_3).

An approximation of goodness-of-fit is made by estimating an equation which includes political party dominance as a nominal scale. If there are significant interaction terms, these may be included in the regression equation. The complete form of the equation is

$$Y_i = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_7 + b_j (X_k * X_7);$$

where,

i   is a subscript for the dependent variables;

X_1 = irrigation percentages;

X_2 = electoral mobilization rates;

X_3 = party fragmentation;

X_7 = 1, if the opposition party sends a
Member to the Assembly, 0, otherwise;

k   is a subscript for independent variables,
X_1, X_2, and X_3;

$(X_k * X_7)$ are interaction terms for political party
dominance; and,

j   is a subscript for the partial slopes
on the interaction terms.

Hypothesis 5.1 and Hypothesis 5.2. Regime party constituencies, or those which return Members of the Indian National Congress to the Assembly are expected to have higher average rates of rural development funding than are opposition constituencies. Regime constituencies on the average are expected to be no different than opposition constituencies on the distribution of electrification in Rajasthan. Table 5.1 displays the results of a test of Hypothesis 5.1 and a test of Hypothesis 5.2. There is week support for Hypothesis 5.1. For regime party Members' constituencies, the average rate of rural development funding is a = 0.710. For opposition Members' constituencies, the average rate is $(a+b_1)$ = 0.518. These results are significant at the p = .10 level which is marginal. Hypothesis 5.2 is supported. There is no significant different between regime and opposition Members' constituencies on the average level of rural electrification.

Hypothesis 5.3. The functional relationships between economic and electoral factors and the dependent policy variables are predicted in Hypothesis 5.3. Table 5.2 displays the results of data analysis for this prediction. Regime party constituencies (Indian National Congress, in the table) receive higher averages of rural development funding rates for each

TABLE 5.1

POLITICAL PARTY DOMINANCE AND RURAL PUBLIC POLICY DISTRIBUTION

POLITICAL PARTY
DOMINANCE

	Regime Party ($X_6=1$)	Opposition Party ($X_7=1$)	
Rural Development Funding Rates (Y_1)	a = 0.710	a = .518	F = 1.52* p = .10
Rural Electrification Percentages (Y_2)	a = 0.380	a = 0.357	F = 0.099

*Y_1 = a + bX_7 (d.f. = 1, 62)

**Y_2 = a + bX_7 (d.f. = 1, 62)

TABLE 5.2

POLITICAL PARTY DOMINANCE, THE POLICY ENVIRONMENT, AND RURAL PUBLIC POLICY DISTRIBUTION

POLITICAL PARTY DOMINANCE

Dependent Variable	Independent Variable	Regime		Opposition		(R^2)	(F)[3]
		(a)	(b_1)	$(a+b_2)$[1]	(b_1+b_3)[2]		
Y_1	X_1	0.963	-0.969**	0.801	-1.300	0.104	2.325 (p=.10)
	X_2	0.835**	-0.807	0.581**	-0.430	0.069	1.487
	X_3	-0.364*	0.016**	-1.902**	0.037**	0.208	5.253 (p=.05)
Y_2	X_1	0.315	0.250	0.278	0.365	0.030	0.621
	X_2	0.431	-0.331**	0.430	-0.504	0.109	2.453 (p=.10)
	X_3	0.348	0.004	0.777	0.007	0.023	0.472

[1]The significance test for $(a+b_2)$ is equivalent to $(a - (a+b_2)) = 0$, or $b_2 = 0$; see (Johnston, 1972: 179), (Namboodiri, et al., 1975: 203-204), and (Blalock, 1972: 496).

[2]The significance test is for $b_1 = (b_1+b_3)$ or $(b_1 - (b_1+b_3)) = 0$, or $b_3 = 0$. See sources in note 1 above.

[3]The regression equation estimated is $Y_i = a + b_1X_k + b_2X_7 + b_3(X_k*X_7)$, where i is a subscript for a dependent variable; k is a subscript for an independent variable; $X_7 = 1$, where political party dominance means the regime party controls a constituency, 0, otherwise; and (X_k*X_7) are interaction terms. (R^2) and (F) are for these equations (d.f. = 3, 60).

*p = .05
**p = .10

equation. The intercepts for regime party constituencies are significant while all but one of the intercepts for the opposition party constituencies are significant. For rural electrification only the intercept for an electoral mobilization rates under the regime party is significant.

The partial slopes for the interaction terms -- economic and electoral factors with political party dominance, the independent variables and rural public policy goods -- are given in Table 5.2. We found in Chapter Three that there is a negative slope for irrigation percentage and rural development funding and a positive partial slope for party fragmentation and rural development funding. These are unchanged. Hypothesis 5.3 (i) predicts that irrigation as an indicator of economic "need" will be associated more negatively in opposition party Members' constituencies than in regime constituencies. The results indicate that while the partial slope for rural development funding rates is indeed more negative for opposition constituencies than for regime constituencies, the partial slope is not significantly different from zero. Hypothesis 5.3 (ii) which predicts a more positive association between party fragmentation and rural development funding in opposition party Members' constituencies than in regime party constituencies is supported by the evidence. The partial slope for rural development funding rates and party fragmentation for opposition party constituencies increases dramatically and is significant at the p = .05 level.[8] Regime party Members' constituencies begin with higher average rates of funding, but funding increases at a slower rate with party fragmentation than for opposition parties' constituencies which start at a lower average rate. At the highest level of party fragmentation, rates of rural development funding are almost equal to regime constituencies.

There is no significant change in the partial slopes for rural electrification and economic and electoral factors controlling for political party dominance. Only electoral mobilization rates are significantly associated with rural electrification controlling for political party dominance when the equations are defined as in Table 5.2.

Summary of Findings. Political party dominance is a relatively powerful predictor of rural development funding when combined with electoral fragmentation. These two variables, alone, explain twenty-one percent (21%) of the variation in rural development funding rates (see Table 5.3). In general, rural development funds are distributed in larger average amounts to regime party constituencies than to opposition party Members' constituencies. Rural electrification is uneffected by political party dominance in an interconstituency way though there may be intraconstituency variations in distribution which are not examined in this work.

The addition of political party dominance to the model tested in Chapter Three increases only slightly the variance explained in rural electrification. Table 5.3 above displays the full resolution of the equation including R^2 when political party dominance, economic and electoral factors are included with significant interaction terms in the regression equation. Political party dominance appears to be important in the distribution of rural development funding. Where the original model including only economic and electoral factors explained twenty-one percent (21%) of the variance, the full model with political party dominance explains nearly thirty percent (30%).

TABLE 5.3

POLITICAL PARTY DOMINANCE, THE POLICY ENVIRONMENT, AND RURAL PUBLIC POLICY DISTRIBUTION

(Summary)

Dependent Variable	Independent Variable	(a)	(b)	(s_b)	(r)	$(R^2$ change)	(F)
Y_1	X_1		-0.871	0.467	-0.26	0.074	3.485 (p=.01)
	X_2		-0.353	0.353	-0.20	0.028	0.994
	X_3		0.010	0.010	0.40	0.119	0.923
	X_7		-1.817	0.995	-0.15	0.042	3.336 (p=.01)
	(X_3*X_7)	0.320	0.025	0.015	-0.08	0.006	2.659 (p=.05)
						$R^2 = 0.269$	F= 4.272 (p=.01)[1]
Y_2	X_1		0.355	0.225	0.17	0.029	2.490 (p=.05)
	X_2		-0.532	0.166	-0.32	0.120	10.308 (p=.001)
	X_3		-0.005	0.004	-0.09	0.028	2.018 (p=.10)
	X_7	0.716	-0.017	0.068	-0.04	0.001	0.066
						$R^2 = 0.177$	F= 3.173 (p=.05)[2]

[1] The equation estimated is $Y_1 = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_7 + b_5(X_3*X_7)$, where X_1, X_2, X_3, X_7 are irrigation, electoral mobilization rates, party fragmentation, and an interaction term for party fragmentation and political party dominance, where $X_7 = 1$, when an opposition party is in power, 0, otherwise; see (Suits, 1957) for a discussion of dummy variables; d.f. = 5, 58.

[2] The equation estimated is $Y_2 = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_7$; see note 1 above for an explanation of the variables; d.f. = 4, 59.

DISCUSSION

Downs' (1957) analysis leads to the examination of the association between political party dominance and the distribution of public policy goods. Several other analyses suggest that where political parties control public policy goods, they will be used to produce desired electoral outcomes. Where administrative control of public goods occurs, however, these goods are expected to be distributed with other outcomes in mind. In Rajasthan, the regime political party, the Indian National Congress, by virtue of its organizational structures, relies upon rural development funding through panchayati raj institutions to influence electoral outcomes. In the case of rural electrification, controlled by the Rajasthan State Electricity Board (RSEB), there is little or no influence by the regime political party organization upon interconstituency distribution of rural electrification though Hadden (1972) finds intraconstituency distribution may be influenced by regime political party Members.

Panchayati raj funding, here called rural development funding, is strongly associated with party fragmentation. The more fragmented the party system in a constituency (the more parties receiving some percentage of the vote), the higher the rate of funding. This relationship is established in Chapter Three and indirectly verified here. This functional relationship is modified in a predicted direction when constituencies are controlled by either the regime political party or by one of the opposition parties. The regime party, controlling decisons on panchayat raj expenditures is inclined to respond to party fragmentation more vigorously in opposition parties' constituencies than in those in which its own Members are sent to the

Assembly. For opposition constituencies, the expected value of a policy good investment appears to be greater with higher levels of party fragmentation.

Political parties appear to be neutralized in their impact upon interconstituency electrification decisions. Political party dominance makes no difference in the statistical analysis and there is little reason to doubt these findings. The RSEB, by statute, is placed outside the realm of electoral politics in that its members are selected by the Chief Minister for their technical and administrative expertise, not on the basis of rewards for service to the party. After the initial appointment there is almost no mechanism for accountability in the hands of the Chief Minister. While members of the RSEB may be sympathetic to the regime party, there is no reason for them to be indebted to any party organization. If anything, in Rajasthan, the regime party may receive less electrification than others. There is additional reason for political party organizations' lack of control over rural electrification. When, in 1969, the decision-making process for electrification allocation was decentralized to include the District Agricultural Production Committees, the initiative was placed in the hands of district administrators rather than elected officials. District Collectors members of the prestigious Indian Administrative Service (IAS) are inclined to look askance at elected officials interferring in their affairs. Any elected official who made demands upon an administrator would be resisted. Administrators are committed, it appears, to administrative stability and control and economic growth (as they perceive it).

The electoral institutions of a democratic system, formalized in political party organizations, have an impact on the distribution of divisible

public policy goods. Where the regime political party is able to control the resource and the infrastructure which dispenses it, the interconstituency allocation of the public good will reflect desired electoral outcomes. But when a public policy good has well-known and accepted production value and when the policy good itself is "lumpy" and perhaps more costly for the first unit, it is unlikely that a political party will be able to use it as an patronage resource. While electrification is recognized as a highly desired public policy good by nearly every Member, there is little party influence over its distribution. The reason for this lack of control stems from the manner in which electrification is funded and administered as well as the nature of the policy good itself. The regime political party organization is unable to radically alter the distribution of electrification.

To this point in the analysis we have considered separately the impact of two institutional factors upon rural public policy goods allocation in Rajasthan. In the concluding next Chapter, we investigate the combined effects of the two institutional factors along with the economic and electoral factors and state conclusions and directions for future research.

FOOTNOTES

[1]Political parties in rural settings have been often the focus of research. Parties have been viewed as brokerage institutions and they have been seen as mobilizers of demands and supporters. The literature is too extensive to summarize on these points. Downs' (1957) analysis of political parties and those of Schlesinger (1965, 1966) and more recently that of Breton (1974) may lead to tests of propositions which link characteristics of party organization with the policy allocation and distribution processes.

[2]See Chapters One and Three for more discussion of this redirection of regime party attention in Rajasthan following the Fourth General Election. This argument runs counter to some of Michel's propositions about the "iron law of oligarchy." Often parties must retreat from a strong organizational interest to survive in power.

[3]"Fluidity" refers to the amount of change possible in a constituency assessed through previous electoral behavior. New voters, voters who switch from one party to another, and changes in the nature of the electorate may have an impact on fluidity. The Przeworski and Sprague (1971) discussion of fluidity is adequate for party systems where there is relative stability in which parties compete. In relatively new systems where parties dissolve and splinter with new parties emerging, charting the electorate is much more difficult.

[4]See Froman (1968) for a useful survey of public policy content categories.

[5]Part of this discussion is taken from Bjorkman and Coyer (1973).

[6]For one, see Kothari (1970).

[7]This discussion has been aided by consultation with Professor Iqbal Narain, Department of Political Science, University of Rajasthan.

8. This relationship can be shown graphically as follows:
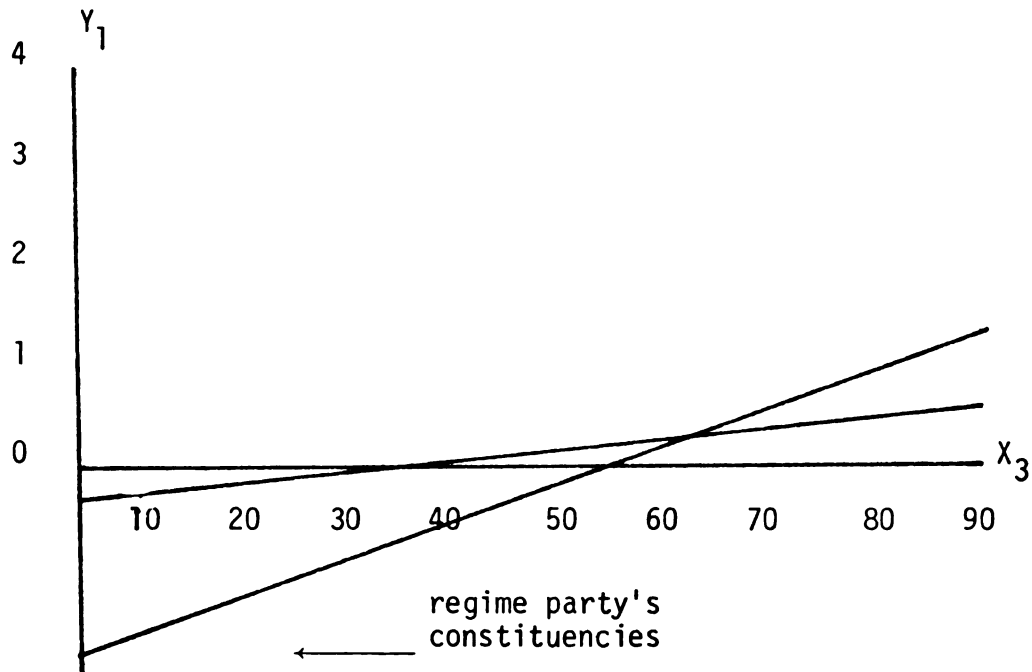
Y_1 = rural development funding rates

X_3 = party fragmentation for the Fourth (1967) General Election

CHAPTER SIX

EXPLAINING RURAL POLICY DISTRIBUTIONS BY AN
ANALYSIS OF THE POLICY ENVIRONMENT

INTRODUCTION

Does the rural policy environment have an impact on the distribution of
public policy goods in Rajasthan? Is there enough evidence to infer that
policy environmental factors matter in policy decisions? The evidence points
to positive answers for both questions for some factors. Before evaluating
the findings there is one additional question remaining. It is a logical
extension of the literature on patron-client associations which finds
resource distribution inequality to be a fundamental under-pinning for political
party organization. We may wish to determine whether and how a combination of
socio-economic dominance and political party dominance affects rural public
policy distributions. After treating this question, if briefly, a summary of
the model, with all factors, is given. A statement of the utility and
validity of the model, a brief critique of what has been done and suggestions
of additional steps to refine and improve the work are discussed.

RURAL PUBLIC POLICY DISTRIBUTION, SOCIO-ECONOMIC DOMINANCE,
AND POLITICAL PARTY DOMINANCE IN RAJASTHAN

Scott (1972), Elkins (1972) and Powell (1970) and others find patron-
client relationships and political party organizations in democratic societies
strongly associated. There is an implicit notion that political party organiza-
tions, to be viable, rest upon patron-client patterns. When patrons have power

based upon land, they mobilize voters who are dependent upon them
economically and socially. Yet, variance has been shown in the degree
to which patron-client associations exist in agrarian societies; and,
in the absence of patron-client ties, political parties are maintained,
and candidates chosen and elected. Qualititatively different kinds of
organizations may appear which are not based upon the support and dominance
of a local elite. These organizations may be more ideologically based
for example, or they may function more like movements than political
parties. Whatever the form the organization takes, local party organiza-
tions not directly linked to rural, landed elites are likely to be different
than those organizations based upon landed elites. In societies where access
to government for certain policy resources is provided through party organi-
zation, and an independent source of power, status or authority to exchange
for those resources is necessary, it is unlikely that party organizations
not based upon such an "elitist" social structure will be successful in
obtaining policy resources.

In more general terms, constituencies controlled by a regime party and
with strong patron-client associations should receive more policy resources
distributed through party organizations which respond to electoral pressures
than those constituencies with other characteristics. Even when an
opposition party Member is sent to the Assembly, if there are strong patron-
client structures in a constituency, that constituency may well receive more
policy resources, on the average, than one which sends a Member from the
regime party. Where neither the regime party controls a constituency nor
there are strong patron-client structures, there is every possibility that

such a constituency would receive the lowest average amount of policy
resources which are sensitive to political party influence. These remarks
do not apply to policy resources administered by autonomous bureaus; no
combination of patron-client structures or political party control should
affect policy resource distribution.

Chapters Four and Five investigate hypotheses associating socio-economic
dominance and political party dominance, respectively, with rural public
policy distribution in Rajasthan. Rural development funding through
panchayati raj institutions responded both to socio-economic dominance
and political dominance. High socio-economic dominance constituencies
received higher average rates of rural development funding; regime party
(Indian National Congress) constituencies received higher average rates of
rural development funding than opposition Members' constituencies. Rural
electrification seemed to be only sensitive to socio-economic dominance
contexts. Low socio-economic dominance contexts received more electrifi-
cation than high socio-economic dominance constituencies for the period
being considered; the results of the test, however, are marginal (p = .10).

In Rajasthan, constituencies controlled by the regime party in high
socio-economic dominance contexts are likely to receive the highest average
rates of rural development funding through panchayati raj institutions.
Constituencies sending opposition (and independent) Members to the Assembly
in a high socio-economic dominance context should receive higher average
funding rates than low socio-economic dominance constituencies sending
regime party Members to the Assembly. The lowest average rates of rural
development funding will be found in low socio-economic dominance constituencies
sending opposition Members to the Assembly. As suggested above, rural

electrification percentages are not likely to be affected by the combination of political party dominance and socio-economic dominance. It has earlier been observed that rural electrification decisions are made largely outside the context of direct political party or even patron influences.

Analyses and Findings

The sixty-four (64) constituencies in our sample of Rajasthan's legislative Assembly seats are grouped by both socio-economic dominance and political party dominance. Socio-economic dominance is described in Chapter One and measurement criteria are given in Chapter Two. High levels of socio-economic dominance in Rajasthan have high land distribution inequality and higher percentages of scheduled caste populations than low socio-economic dominance characterized by land distribution equality and lower percentages of scheduled caste populations. Political party dominance refers directly to which party sends a Member to the Assembly. The regime party may send a Member or the constituency may send a Member from an opposition party (or an independent). Sample constituencies may be grouped both by socio-economic dominance and political party dominance. Of the sixty-four (64) constituencies, the numbers in each category do not deviate from what might be expected by chance. In the sample, it appears there is no association between political party dominance and socio-economic dominance. A regime party Members is as likely to come from a high socio-economic dominance context as from a low socio-economic dominance context, and so on.

Having grouped Rajasthan's sample constituencies by both socio-economic dominance and political party dominance, we may investigate the combined

influence of the two factors upon rural public policy distribution. In fact, it is possible to utilize statistical techniques which make it unnecessary to have explicit controls for each variable. Nonetheless, the reader interested in knowing which constituencies fall into each category may examine them. Table 6.1 shows there are significant differences between how the two factors are associated with each of the two rural public policy distributions. For rural development funding (Y_1), the average distribution rates are highest for regime party constituencies with high socio-economic dominance and rates are lowest fro opposition parties' constituencies with low socio-economic dominance. It was predicted that opposition party Members' constituencies with high socio-economic dominance would have higher rates of rural development funding than either regime party constituencies with low socio-economic dominance or opposition party constituencies with low socio-economic dominance. This prediction is supported by the evidence. The equation estimated for rural development funding rates and the coefficients are significant.

Rural electrification percentages are unrelated apparently to any combination of socio-economic dominance or political party dominance. The results from Table 6.1 do not allow any other interpretation because neither equation or coefficients are significant. The percentage of rural electrification distributed for 1967-1971 as a percent of the total decade (1961-1971) appears not to be associated with socio-economic dominance and which party sends a Member to the Assembly.

An institutional context, socio-economic dominance, and which political party sends a Member to the Assembly are associated strongly with the distribution of rural public policy resources through Rajasthan's

TABLE 6.1

RURAL PUBLIC POLICY DISTRIBUTION, SOCIO-ECONOMIC DOMINANCE, AND POLITICAL PARTY DOMINANCE

RURAL DEVELOPMENT FUNDING RATES (Y_1)*

Socio-economic Dominance

	High $(X_5=0)$	Low $(X_5=1)$
Regime Party $(X_7=0)$	$a=0.877$ (n=16)	$(a+b_1)=$ 0.517 (n=18)
Opposition Party $(X_7=1)$	$(a+b_2)=$ 0.707 (n-16)	$(a+b_1+b_2)$ =0.347 (n-14)

$a = 0.877$, $f = 3.692$

$b_1 = -0.359$; $s_b = 0.150$; $F = 5.746$

$b_2 = -0.169$; $s_b = 0.150$; $F = 1.272$

*$Y_1 = a + b_1X_5 + b_2X_7$; d.f. - 2, 61

RURAL ELECTRIFICATION PERCENTAGES (Y_2)**

Socio-economic Dominance

	High $(X_5=0)$	Low $(X_5=1)$
Regime Party $(X_7=0)$	$a=0.345$ (n=16)	$(a+b_1)=$ 0.419 (n=18)
Opposition Party $(X_7=1)$	$(a+b_2)=$ 0.318 (n-16	$(a+b_1+b_2)$ =0.392 (n=14)

$a = 0.345$, $F = 0.583$

$b_1 = 0.074$; $s_b = 0.072$; $F = 1.067$

$b_2 = -0.027$; $s_b = 0.072$; $F = 0.144$

**$Y_2 = a + b_1X_5 + b_2X_7$; d.f. = 2, 61

panchayati raj structure. Where there is a highly unequal distribution of land and status, there are highest average rates of rural development funding. The concentration of land and status appears to be a stronger factor than political party dominance in determining rates of rural development funding. Even Rajasthan's opposition parties' Members from constituencies with high levels of socio-economic dominance receive higher average rates than do Members from the regime party elected from low socio-economic dominance constituencies. Political party Membership and socio-economic dominance are critical factors for rural funding through panchayati raj institutions.

The reasons why rural development funding and rural electrification are differently associated with socio-economic dominance and political party dominance deserves brief mention. These reasons are likely to be found in the differences between the types of policy resources distributed and who controls them. Rajasthan's panchayati raj institutions control funding available in moderate amounts. Accounting procedures and formal administrative oversight functions are defined, but administrators responsible for these functions are beseiged by the realities of local public life. It is often difficult to cope with a strong pradhan and his coterie of loyal supporters. The administrator's allies may include a schoolmaster (usually not from the same village or region) and a village level worker, who is not part of the local social and political network. Even when complaints can be made about personnel indiscretions and alleged misuse of funds, the complaints can be easily shortcircuited by sympathetic and watchful Cabinet Ministers who attempt to protect their own clients and brokers at the constituency-level. Some panchayati raj administrators (block development officers)

are more flexible in handling the possible conflict between themselves and local political leaders; Mathur (1970) observes that administrators with "generalist" backgrounds have been more successful in coping with political influence than have specialists assigned to administer panchayat samiti (or block) affairs. It is not uncommon for block development officers to ask for an elected official's intercession and assistance with their administrative superiors for transfers to better postings. In brief, panchayati raj institutions bring together administrators and elected officials (and local brokers) who seek to control the same resources. Conflict is often the result. The data presented here indicate that panchayati raj elected officials were able, for the period of this research, able to utilize policy resources toward their own performance goals.

A SUMMARY OF THE FINDINGS

Chapters Three, Four and Five, in addition to the first section of this chapter, investigate associations between the major independent variables and policy distribution. The first policy variable is the rate of rural development funding (Y_1) measured as a first different equation between one time period before the Fourth General Election (1963-64, 1964-65) and another time period following (1968-69, 1969-70). Rural electrification (Y_2) is measured as a constituency's rural population whose villages have access to electrification from 1967-1971 as a percentage of the total rural population receiving access to electrification from 1961-1971. This variable is so defined to measure the affect of electoral variables upon the distribution of rural electrification after a critical election. The

independent variables are the percentage of irrigated land in a constituency (X_1), electoral mobilization rates (X_2), and party fragmentation (X_3). These first three independent variables are measured as metric scales. Irrigated land is a percentage of the total arable land counting irrigated, double-cropped land twice. Electoral mobilization rates is a first difference equation for the percent of the electorate voting in the Third (1962) and Fourth (1967) General Elections. Party fragmentation is measured for the Fourth General Election (1967). Each of these independent variables is chosen so that their impact on post-1967 policy distributions might be examined. Two additional independent factors are added: socio-economic dominance (high and low) and political party dominance (regime and opposition party). These factors are measured as qualitative, nominal variables. Electoral factors are seen as being salient for the policy distribution process because the regime party's percentages of support in the Assembly and the electroate declined. Opposition parties came close in 1962 and nearly defeated the regime party in 1967. Post-1967 policy distributions should reflect the regime party's occupation with the electoral environment.

The set of hypotheses tested has associated an independent variable with each dependent variable. Rural development funding rates are associated with irrigation percentages, electoral mobilization rates, and party fragmentation; the same independent variables are associated with rural electrification percentages. The associations are estimated through bivariate and multivariate regression techniques. Each nominal scale (or institutional factor) is also associated with rural policy distributions. Since each independent institutional factor is qualitative and the dependent variables are metric, analysis of variance techniques are used to test the significance of differences between adjusted means for the groupings of the independent variables.

Each nominal scale is included, then, in a multiple regression and inter-action effects are included. Hypotheses predicting the coefficients for interaction terms are presented and tested. Finally, all independent variables, including significant interaction effects, are included in a summary multiple regression to show the variance explained by the factors and the controlled associations between independent and dependent variables.

The brief discussion which introduces this section is an outline of the manner in which the hypotheses were tested. The remaining part of this section reviews the findings of the important chapters. It is apparent that irrigation percentages are significantly associated with both the distribution of rural development funds and rural electrification. For rural development funding the sign of the coefficient is negative, as predicted; for rural electrification, the signs are positive, again as predicted. The signs are significant for both bivariate and multivariate equations. Among the environmental factors remaining electoral mobilization rates are related to policy distribution. However, where the negative coefficient for rural development funding rates and electoral mobilization rates is significant in the bivariate case, it is nonsignificant in the multivariate case. For rural electrification, electoral mobilization rates is an important explanatory variable. In both the bivariate and multi-variate cases the signs are negative and the factor explains a sizable portion of the variance for rural electrification. Rural development funding is associated positively with party fragmentation in both bivariate and multi-variate equations. The coefficients are significant at a high level. Rural electrification and party fragmentation are not associated significantly.

Institutional factors are related to rural policy distribution. Rural development funding rate averages are higher for high socio-economic dominance constituencies than for low socio-economic dominance constituencies; the average rates are higher, also, for regime party constituencies than for opposition party constituencies in Rajasthan. For socio-economic dominance the difference between the adjusted means is highly significant; for political party dominance, the different is marginally significant. The impact of institutional factors upon functional associations are predicted in parts of Hypotheses 4 and 5. These hypotheses are tested in Chapters Four and Five. There appears to be no significant differences in the partial slopes for rural development funding and irrigation controlling for socio-economic dominance (though the slight change observed occurs in the predicted direction). Also, there is no interaction effect for socio-economic dominance with the association between party fragmentation and rural development funding; in addition, a prediction that socio-economic dominance might change the association between irrigation and rural electrification is not supported. There is no interaction effect for political party dominance and the relationship between irrigation and rural development funding rates. However, there is a significant interaction effect for political party dominance and the association between party fragmentation and rural development funding rates. This finding is discussed below in the section on the significance of the findings.

To this point, all of the conceptualized factors have been included in the model. Table 6.2 presents a summation of the associations for all of the independent factors and each dependent variable. For rural development funding rates, it is clear that irrigation percentages are a significant factor. Earlier results show that party fragmentation is associated with rural development funding, also, but with the full equation, while party fragmentation explains a large portion of the variance, the interaction term (X_3*X_7) for political party dominance appears to be significant. Both institutional factors, socio-economic dominance and political party dominance, have significant coefficients. Irrigation percentages, party fragmentation, socio-economic dominance and political party dominance are the critical factors, in our model, for the explanation of rural development funding rates.

Rural electrification percentages for the period following 1967's Fourth General Election in Rajasthan appear to be associated most strongly with three factors: irrigation percentages, electoral mobilization rates, and socio-economic dominance. Party fragmentation and political party dominance do not matter in this statistical analysis. The amount of variance in rural electrification percentages explained for the period under consideration is $R^2 = 0.21$.

CONCLUSIONS

This work began with an analysis of public policy resources by their degree of divisibility and specificity of association with known policy "production functions." Rural development funding controlled by Rajasthan's panchayati raj institutions were considered to be highly divisible and ambiguously associated with some economic or social product.

TABLE 6.2

RURAL PUBLIC POLICY DISTRIBUTION, THE POLICY ENVIRONMENT, SOCIO-ECONOMIC DOMINANCE AND POLITICAL PARTY DOMINANCE (Summary)

Dependent Variable	Independent Variable	(a)	(b)	(s_b)	(r)	(R^2 change)	(F)
Y_1	X_1		-0.841	0.466	-0.26	0.074	3.252 (p=.01)
	X_2		-0.261	0.362	-0.20	0.028	0.519
	X_3		0.008	0.011	0.40	0.119	0.573
	X_5		-0.174	0.152	-0.30	0.019	1.315 (p=.10)
	X_7		-1.756	0.993	-0.15	0.039	3.127 (p=.01)
	(X_3*X_7)		0.024	0.015	-0.08	0.006	2.506 (p=.05)
		0.515				R^2= 0.286	F= 3.799 (p=.01)[1]
Y_2	X_1		0.335	0.223	0.17	0.030	2.261 (p=.05)
	X_2		-0.590	0.168	-0.32	0.120	12.340 (p=.01)
	X_3		-0.004	0.004	-0.09	0.028	0.936
	X_5		0.113	0.072	0.13	0.032	2.450 (p=.05)
	X_7		-0.025	0.067	0.04	0.002	0.133
		0.573				R^2= 0.21	F= 3.091 (p=.05)[2]

[1] The equation contains all important policy factors and a significant interaction term; d.f. = 6, 57.
[2] The equation contains all important policy factors; there are no significant interaction terms for rural electrification; d.f. = 5, 58.

Rural electrification, on the other hand, has been viewed as a "lumpy" relatively non-divisible resource which can be associated more accurately with some desired social or economic product. Electrification is associated with irrigation which, in turn, can be associated with increases in output of food-grains (assuming an emphasis on irrigation based farming). Another factor is then introduced into the analysis. There is variance in the type of administrative arrangements through which policy resources are distributed. Some policy resources require the involvement of several political agencies, either composed of elected or non-elected officials; other policy resources may be distributed by autonomous or single purpose governmental agencies with relative impunity to outside intervention. Rural development funding (character- ized as being highly divisible and less production specific than rural electrification) is controlled by a dual political and administrative hierarchy, the panchayati raj institutions described in Chapter One. Rural electrification is distributed with less interference from elected officials (or administrators from other agencies) by an autonomous body of the Government of Rajasthan, the Rajasthan State Electricity Board. Distributions of rural public policy resources are said to be associated with these features of the policy good and the design of the decision- making apparatuses.

The analysis then turns to the question of distribution of these policy resources as a function of transactions between state-level decision-makers and local level political actors. The distributions of policy resources once allocation levels are set become the critical

dependent variables. Inferences about bargained exchange between these policy actors are made by examining the distributions of policy resources as they are associated with a number of policy environmental factors. These policy environmental factors are chosen by a process which assumes they are important to decision-makers and provide information about political performance in the environment related to the distributions of policy resources. These factors, oft repeated, are irrigation percentages (as a measure of economic development), electoral mobilization rates, party fragmentation, and institutional factors -- socio-economic dominance and political party dominance (at the constituency level). The goal of this analysis is to describe the decision-rules which apply to the distribution of policy resources in one democratic system, Rajasthan, for one decade when electoral politics might be expected to matter. Eventually, the goal of this work is to extrapolate to many agrarian political systems using some of the factors included for a more accurate model of policy distribution.

Having summarized the approach and analysis (for the final time), what conclusions can be drawn from the results about policy resource distribution? First, the assertion that panchayati raj funding in Rajasthan is a type of welfare payment for local constituencies based upon "need" is tenatively supported. The economic criterion for panchayati raj funding, irrigation percentages, is negatively associated with rates of funding. Only irrigation percentages is used as a measure of local rural development. There may be other factors important here as well. These might include levels of literacy or communication variables such as roads and transportation facility availability. Nonetheless, irrigation

percentages is significantly associated with rural development funding rates. If the economic rationale for _panchayati raj_ funding is the uplift of the community, it seems from the data at hand this criterion is being met.

But there are other explicitly political factors which are important for _panchayati raj_ funding. Party fragmentation is the strongest environmental factor associated with rates of rural development funding. The association is positive and significant. The level of fragmentation indicates to the regime party that investments of funds may produce results in subsequent elections under prescribed conditions. Interacting with party fragmentation is political party dominance. It should be recalled that regime political party constituencies start with a higher average level of rural development funding rates. In regime constituencies party fragmentation and rural development funding rates are not so positively associated as they are in opposition constituencies. When a regime party constituency displays party fragmentation, the rate of rural development funding increases at a relatively slow pace, but in opposition party constituencies the rate increases at a more rapid pace until opposition party constituencies with high levels of fragmentation are receiving nearly the same average rate of rural development funding as are regime constituencies. It is clear that some kind of rational assessment of the electoral environment is occurring in which the regime party leadership is utilizing its policy resources to achieve a desired electoral outcome in critical constituencies. While this hypothesis has been suggested in much of the literature on policy distribution, party control and competition, it has not been tested before.

The technique used here is particularly suited to the test of this hypothesis in numerous national and sub-national contexts.

Socio-economic dominance is an additional factor associated with rural development funding rates. Socio-economic dominance is conceived in such a way as to isolate contexts where patron-client structures are more or less likely to be strong. In high socio-economic dominance contexts (where patron-client structures are more likely to be strong) there are higher average rates of rural development funding. This finding reflects the analyses and empirical studies of several scholars including Gotsch (1973) and Gartrell (1972). The finding suggests that for policy resources controlled in a democracy by a political party organization the support bases of the party -- probably patron-client structures -- are likely to be plenished by available policy resources. Related to this finding is an analysis of the combination of socio-economic dominance and political party dominance. It is found for the data on Rajasthan that high socio-economic dominance constituencies with regime party Members in the Assembly receive significantly higher average rates of rural development funding than do other constituencies. Just as important is the finding that high socio-economic dominance constituencies who send opposition Members to the Assembly receive higher average rates of rural development funding than do regime constituencies with low socio-economic dominance (and, of course than those constituencies which have low socio-economic dominance and opposition party Members). Socio-economic dominance is a critical factor in regime party decisions on policy resource distribution. In

conjunction with regime party dominance the chances are high that a constituency will receive more policy resources. In Rajasthan, panchayati raj funding rates for the periods under consideration are strongly associated with party fragmentation, socio-economic dominance, and political party dominance. The same factors do not explain rural electrification, in our findings.

Rural electrification decisions are made by the Rajasthan State Electricity Board. Electrification is not the same as "electricity" as has been mentioned earlier in this monograph. Electrification means that villages have been given access to electricity. Access means that eleven kilovolt (11 kv) lines are available within a proximity of the village and that the feeder lines have been taken up to the village. Electrification, as such, is a non-divisible good for the individual farmer. Either a village has the possibility of connections or it does not, there is no point half-way. However, certain villages in a constituency may receive electrification while others may not. In this sense electrification is divisible, but only to political and policy actors operating at that or higher levels. It is not hard to imagine two or three villages within the same general distance from an 11 kv line. One village may be chosen over another. Or, more to the point of this discussion, the Board may make a decision to put an additional (or first) 11 kv line into one constituency and not another thus allowing more villages in the first constituency and not the other to be electrified. Here rural electrification is measured for 1967-71's rural population receiving electrification (by villages in constituencies) as a proportion of the rural population

receiving electrification for the decade, 1961-1971. It is reasoned that if policy environmental factors are ever to matter in electrification decisions, they would be salient during the period following the Fourth General Election (1967) when the regime party has turned its primary attention to winning elections.

It is asserted in Chapter One that rural electrification administrators on the Board would be sensitive to electoral or policy environmental factors. Because elected officials might exert pressure on Board administrators for rural electrification in their own constituencies, the same electoral factors might be assessed by Board administrators as are assessed by elected Members of the Assembly. For this reason, policy environmental factors are associated with rural electrification in several hypotheses. These hypotheses are stated in Chapter One and tested in Chapters Three, Four and Five. The results of these hypotheses (presented above in the previous section) allow for some tentative interpretations.

The prediction that rural electrification and percentages of irrigation will be positively associated is supported. The criterion of irrigation potential is applied to electrification decisions -- even for the period under examination. The strength of the association might be stronger if the post-1967 were not the only period for which data were utilized. Rural electrification decisions are based on the economic criterion of growth potential in agricultural productivity. Rural electrification is also negatively associated with electoral mobilization rates. The original argument made for this prediction was the Board administrators would resist the pressures placed upon them by local level

elite who were also in a position to mobilize voters. It was not the actual mobilization of voters which was seen to be perceived by Board Administrators, rather it was the antecedents of these electoral changes. To an extent, this explanation is supported by the association of rural electrification percentages with socio-economic dominance. Using the reasoning that high socio-economic dominance contexts produce; higher levels of electoral mobilization rates (due to the patron's ability to mobilize economic and social dependents), it would be predicted that rural electrification would be lower for high socio-economic dominance contexts. While the results for the test of this hypothesis (Hypothesis 4.2) are not highly significant, they do suggest some support for the view. Neither factor which reflects the character of political party operations in rural areas is significantly associated with rural electrification in Rajasthan. Party fragmentation, while negatively associated with rural electrification, is not significantly related. Political party dominance appears to make no difference at all in the decisions made by the Board to provide electrification to villages in any constituencies. If the political party dominance variable had included ranks of Cabinet Ministers rather than simply divided all constituencies into two troups, there might have been some association, but this test must wait another analysis. Hadden (1972) concludes that parties may make a difference in which villages are chosen in a constituency. But there is no evidence to suggest that the political party machinery influences electrification decisions at the constituency- or state-level in Rajasthan.

The character of the policy resource distributed and the nature of
the institutional arrangements which make distributional decisions are
associated with qualitatively different environmental factors. Divisible
policy goods controlled by political party apparatuses in democracies
respond more directly to electoral factors and those factors critical
to party organization than do other resources. Those less divisible
resources controlled by autonomous agencies respond to economic criteria
and the administrator's desire to control resources while resisting
intervention from other political actors both at the state and local level.

ACCOMPLISHMENTS, LIMITATIONS, AND FURTHER RESEARCH

This dissertation started out to do several things. First, the
area of agricultural policy is perhaps the most critical one for agrarian,
developing societies. The need for instrumental variables and solutions
to distributional dilemmas is foremost in this policy area. To a rather
large extent the models which explain agricultural policy distributions
rarely ask the important institutional questions. The contention here
is that the failure to ask institutional questions leads to random
"success" or "failure" in agricultural development projects. A second
area is important for this work, as well. While no direct argument has
been made, there is a general inadequacy with the use of a comparative
methodology in studies of Indian and third-world political processes.
Somehow these political systems -- particularly India's -- are seen as
unique. The assumption is that various techniques won't work in India.
This leads to the selection of unique variables and idiosyncratic research

tools. These two tendencies do not lead to a general theoretical understanding of either the political or policy processes. There is no previous work on Indian politics and policy distributions which examines constituency level variables as impinging upon distribution. There should be more and better works which emphasize the cross national dimensions of the policy distribution process in India rather than the uniqueness of the process.

Given this kind of theoretical approach, one or two findings stand out. First, rates of funding at the local level in India are, indeed, associated with party fragmentation (much like party competition) when controlling for the correct time period and other independent variables. Further, when a control is introduced for which party sends a Member to the Assembly, the association changes in a logical and predicted direction. Another important methodological contribution is the conceptualization and measurement of socio-economic dominance. No one, to this point, has compared the two poles of dominance in rural areas. Most often it has been assumed that only one type of social structure underlies political organization in agrarian societies. But even if that point was recognized no one, heretofore, had attempted to measure the factor.

An initial concern in this work has been the relationship between the level of analysis and the unit of analysis. Much of the policy output literature utilized either counties or states within the United States to make inferences about policy distributions. The generalizations from

these studies are sometimes phrased in terms of processes that are not directly apparent from the data sources. This is a problem here, also. But considerable effort has been made to select the appropriate level of analysis to make inferences about decision-making at the state-level. While there may be some ecological correlation problems (see Shively, 1970), the effort to select data theoretically relevant to the model has been made. The level of analysis here is the Assembly constituency, a critical position in India's federal system for making agricultural policy. Members, predominantly those of the Cabinet, make critical decisions on the allocation and distribution of policy resources. To view agricultural policy distribution at any other level would miss the important policy-relevant arenas. In order to obtain data on the Assembly seat for demographic and policy variables, a considerable investment of time and other resources was made. Data had to be fitted from <u>panchayat samitis</u> and <u>tehsils</u> to constituency-level equivalency always using the constituency as the base unit. The fitting problem is complex and, at best, tedious. It was reasoned that this level of analysis was appropriate for the unit of analysis -- decision-making based upon transactions between state and local political actors.

The critical question with the unit of analysis and level of analysis is whether or not inferences about state-level decision-making can be made from data collected on sub-state units. While only a few references are made directly to interviews with officials, elected and administrative, most of the assertions about rationality or ranking of problems are grounded in interviews. Members from many assembly seats were asked to rank the state's economic and social issues in one set of

questions and responded overwhelmingly with an emphasis upon agricultural productivity. In additional local panchayat and panchayat samiti leaders and bureaucrats were interviewed, largely informally, about their relationships with each other and with state-level political actors (both administrative and decision-making). It became clear from these interviews that local organizational considerations of state-level actions were at the center of their behavior. They wished to maximize the amount of benefits acrued from state-level development agencies and withhold the exercise of authority by state-hired, local government servants. It is one of the shortcomings of this work that more of the basic interview materials collected during the year's research in Rajasthan are not included in the work.

Unfortunately all of the intra-bureaucratic and state-level factors important in policy distribution could not be included in this monograph. Many of these factors were unamenable to systematic observation. It was not possible to measure the relationships between administrators and politicians directly. Intra-hierarchial associations might be critical for distributions (see Bjorkman and Coyer, 1972), but because they were not accessible, it is impossible to observe them. It is only assumed that administrative and elected officials' hierarchies are often in conflict and often are able to coordinate their operations at various levels. Because these factors could not be observed, the focus of the research was modified. Instead of talking to administrators or politicians, systematically, about their mutual or separate attitudes and expectations, unobtrusive observations of electoral and policy distributions were collected. The focus changed from intra-bureaucratic activity to the

evidence of exchanges or transactions which take place between state level and local-level political figures.

An additional shortcoming of this work is the lack of instrumental factors. If a Rajasthani policy decision-maker were to read this work (as some might), there may be very little he could apply to his situation; he may have a better understanding of the state of the art, but there is little he might apply (or so it would seem). The addition of environmental institutional factors may be the kind of area which would inform the decision-maker about the costs and benefits of certain policies given certain environmental conditions. While explicit reference has not been made to all of the literature, there is a dilemma in how the policy environment interacts with policy allocation and distribution. I have chosen two important institutional factors. The more important of these factors, socio-economic dominance, is measured by land distribution inequality and the availability of low status persons. There is no guarantee, however, even with this set of measures taken from the accurate Census of India that actual patron-client associations exist where it is inferred they do! This kind of evidence can only be obtained by careful anthropological field work within regions.

The next step for research in agricultural development and policy allocation and distribution is to map the institutional contexts within which decisions are made and within which distributions are carried out.[1] The important questions theoretically are those which lead to the selection of factors for a model or theory which allows an explanation of why some benefit from policies and others pay the cost. There may be

too much emphasis upon agricultural productivity as strictly a physical yield factor rather than a distributional and political factor. This research indicates that while the associations in the variables may be seen initially in linear terms, curvilinear relationships may be appropriate (see notes in Chapter Three). Research which focuses upon institutional and instrumental variables might well be performed to find which administrative and political arrangements "work" in which contexts rather than encourage the imposition of models which do not "work" in all contexts. Agricultural development under these latter conditions it randomly adequate -- or inadequate. The analytic tools are becoming available and statistical techniques are more than adequate for the task. What is necessary now is more care given to research design and the institutional analysis of the rural policy process in agrarian societies.

FOOTNOTES

[1]One problem not handled in this work is the set of interrelationships between the independent variables. It is implied that socio-economic dominance may be associated with electoral mobilization. One would hypothesize that socio-economic dominance would be associated with electroal mobilization. Elkins (1972) shows this to be the case. It is not clear, however, whether rates of electoral mobilization change would display this association. Further, the finding that rural electrification is inversely associated with electoral mobilization change suggests other factors may be working. The explanation is not entirely satisfactory. Yet, all of this material could not be covered in this one analysis and it is left for another run through on the data.

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APPENDIX A

LIST OF RAJASTHAN SAMPLE CONSTITUENCIES WITH CENSUS UNIT AND PANCHAYAT SAMITI NAMES

District/Constituency	1961 Census	1966 Census[1]	Panchayat Samiti
Jhunjhunu			
Jhunjhunu	Jhunjhunu Udaipurwati	Jhunjhunu Udaipurwati	Alsisar Jhunjhunu Nawalgarh Udaipurwati
Mandawa	Jhunjhunu	Jhunjhunu	Alsisar Jhunjhunu
Surajgarh	Chirawa Khetri	Chirawa Khetri	Chirawa Surajgarh Bubhan Khetri
Sikar			
Singrawat	Sikar	Sikar	Dhod
Danta-Ramgarh	Danta- Ramgarh	Danta- Ramgarh	Piprali
Neem-ka-Thana	Neem-ka- Thana	Neem-ka- Thana	Neem-ka- Thana
Jaipur			
Amber	Jaipur	Jaipur	Jaipur Amber
Phulera	Phulera	Phulera	Jobner
Dudu	Dudu	Dudu	Dudu

APPENDIX A
(Continued.)

LIST OF RAJASTHAN SAMPLE CONSTITUENCIES WITH CENSUS UNIT AND PANCHAYAT
SAMITI NAMES

District/Constituency	1961 Census	1966 Census[1]	Panchayat Samiti
Jaipur			
Phagi	Phagi Sanganer	Phagi Sanganer	Phagi Chaksu
Sikrai	Sikrai	Sikrai	Sikrai
Chomu	Amber	Amber	Govindgarh Amber
Bassi	Bassi	Bassi	Bassi
Jamwa-Ramgarh	Jamwa-Ramgarh	Jamwa-Ramgarh	Jamwa-Ramgarh Amber
Alwar			
Behror	Behror	Behror	Behror Neemrana
Bansur	Bansur	Bansur	Bansur
Mandawar	Mandawar	Mandawar	Mandawar
Ramgarh	Alwar	Alwar	Ramgarh Umrain
Rajgarh	Rajgarh	Rajgarh	Rajgarh Reni
Kathuman	Lachhmangarh	Lachhmangarh	Govindgarh Kathumar
Tijara	Tijara Kishangarh-bas	Tijara Kishangarh-bas	Tijara Kishangarh-bas Kotkasim

APPENDIX A

(Continued)

LIST OF RAJASTHAN SAMPLE CONSTITUENCIES WITH CENSUS UNIT AND PANCHAYAT
SAMITI NAMES

District/Constituency	1961 Census	1966 Census	Panchayat Samiti
Bharatpur			
Kaman	Kaman	Kaman	Kaman Nagarpahari
Deeg	Deeg Nagar	Deeg Nagar	Deeg Nagarpahari
Bharatpur	Bharatpur	Bharatpur	Kumher Sewar
Weir	Weir	Weir	Weir
Bayana	Bayana Rupbas	Bayana Rupbas	Bayana Rupbas
Rajakhera	Rajakhera Dholpur	Rajakhera Dholpur	Rajakhera Dholpur
Nadbai	Nadbai Bayana	Nadbai Bayana	Nadbai Bayana
Bari	Baseri Bari	Baseri Bari	Baseri Bari
Sawai Madhopur			
Mahuwa	Karauli	Karauli	Karauli
Sawai Madhopur	Sawai Madhopur Bonli	Sawai Madhopur Bonli	Sawai Madhopur Bonli
Khandar	Khandar Sapotra	Khandar Sapotra	Khandar Sapotra

APPENDIX A

(Continued)

LIST OF RAJASTHAN SAMPLE CONSTITUENCIES WITH CENSUS UNIT AND PANCHAYAT
SAMITI NAMES

District/Constituency	1961 Census	1966 Census[1]	Panchayat Samiti
Ajmer			
Kishangarh	Kishangarh Rupnagar	Kishangarh	Arain Kishangarh
Nasirabad	Ajmer Kekri	Ajmer Kekri	Srinagar Bhinai
Pushkar	Ajmer	Ajmer	Srinagar
Bhinai	Kekri Sarwar Arain	Sarwar Kishangarh	Bhinai Arian
Bundi			
Bundi	Bundi Talera	Bundi	Bundi
Hindoli	Hindoli Nainwa	Hindoli Nainwa	Hindoli Nainwa
Kota			
Digod	Digod Ladpura Barod	Digod Ladpura	Sultanpur Ladpura
Chabbra	Chabbra Shahbad Kishanganj Atru Chhipa Barod	Atru Chabbra Chhipa Barod Shahbad Kishanganj	Chabbra Chhipa Barod Shahabad Atru

APPENDIX A

(Continued)

LIST OF RAJASTHAN SAMPLE CONSTITUENCIES WITH CENSUS UNIT AND PANCHAYAT
SAMITI NAMES

District/Constituency	1961 Census	1966 Census[1]	Panchayat Samiti
Kota			
Pipalda	Pipalda	Pipalda	Itawa
	Itawa	Baran	Atru
	Mangrol	Mangrol	Antah
	Antah		
Udaipur			
Mavli	Mavli	Mavli	Mavli
Nathdwara	Nathdwara	Nathdwara	Nathdwara
Kumbhalgarh	Kumbhalgarh	Kumbhalgarh	Kumbhalgarh
	Mavli	Mavli	Amet
Bhim	Bhim	Bhim	Bhim
	Deogarh	Deogarh	Deogarh
Gogunda	Kotra	Kotra	Kotra
	Gogunda	Gogunda	Gogunda
Phalasia	Phalasia	Phalasia	Jhadol
	Kherwara	Kherwara	Kherwara
Sarada	Sarada	Sarada	Sarada
Lasadia	Lasadia	Lasadia	Dhariawad
	Vallabhnagar	Vallabhnagar	Bhindar
Salumbar	Salumbar	Salumbar	Salumbar
	Girwa	Girwa	Badgaon
			Girwa

APPENDIX A

(Continued)

LIST OF RAJASTHAN SMAPLE CONSTITUENCIES WITH CENSUS UNIT AND PANCHAYAT
SAMITI NAMES

District/Constituency	1961 Census	1966 Census[1]	Panchayat Samiti
Bhilwara			
Bhilwara	Bhilwara	Bhilwara	Banera
			Siwana
Asind	Asind	Asind	Asing
Ganganagar			
Karanpur	Karanpur	Karanpur	Sri Karanpur
	Padampur	Padampur	Padampur
Ganganagar	Ganganagar	Ganganagar	Merzewala
			Sadulshahar
Suratgarh	Suratgarh	Suratgarh	Suratgarh
	Anupgarh	Anupgarh	Raisinghnagar
	Raisinghnagar	Raisinghnagar	
Hanumangarh	Hanumangarh	Hanumangarh	Hanumangarh
Nohar	Nohar	Nohar	Nohar
	Bhadra	Bhadra	Bhadra
Nagaur			
Nagaur	Nagaur	Nagaur	Mundwa
			Nagaur
Jayal	Jayal	Jayal	Jayal
Ladnu	Ladnu	Ladnu	Ladnu
Deedwana	Deedwana	Deedwana	Deedwana

APPENDIX A

(Continued)

LIST OF RAJASTHAN SMAPLE CONSTITUENCIES WITH CENSUS UNIT AND PANCHAYAT SAMITI NAMES

District/Constituency	1961 Census	1966 Census[1]	Panchyat Samiti
Nagaur			
Nawan	Nawan	Nawan	Kuchaman Makrana
Merta	Merta	Merta	Merta Riyan

[1]For the Livestock Census of 1966, and subsequent enumerations of the Census of India and administrative purposes, a number of Rajasthan's tehsil boundaries were redrawn. This is the case for Ajmer, Kota, and Ganganagar districts.

APPENDIX B

DESCRIPTION OF INDICATORS FOR RAJASTHAN'S ASSEMBLY CONSTITUENCIES[1]

Variable	Mean	Standard Deviation	Range	Source
total per capital expenditures by panchayat samiti for 1964 and 1965 combined	14.0	4.0	6.9 to 26.6	Development Department, Government of Rajasthan
total per capita expenditures by panchayat samiti for 1969 and 1970 combined	20.9	8.0	11.0 to 71.9	Development Department, Government of Rajasthan
rate of panchayat samiti expenditure between 1964-1965 and 1969-1970	0.56	0.56	-.56 to 3.9	
percent of population receiving electrification for 1967 to 1971 of total receiving electrification for 1961-1971	8.0	7.0	.00 to 44.0	Rajasthan State Electricity Board, Government of Rajasthan
percent of arable land irrigated	22.8	14.6	0.0 to 73.6	Livestock Census of Rajasthan and records of the Land Revenue Board, Government of Rajasthan
percent rural literate population, 1961	11.8	2.6	6.3 to 18.6	Census of India, 1961
percent rural literate population, 1971	18.4	6.6	8.2 to 44.2	Census of India, 1971 (provisional)
percentage of electorat voting, 1962 (Third General Election)	53.3	12.2	3.4 to 76.6	Election Department, Government of Rajasthan

APPENDIX B

(Continued)

DESCRIPTION OF INDICATORS FOR RAJASTHAN'S ASSEMBLY CONSTITUENCIES[1]

Variable	Mean	Standard Deviation	Range	Source
percentage of electorate voting, 1967 (Fourth General Election)	59.4	7.9	41.6 to 76.0	Election Department, Government of Rajasthan
party fragmentation (Rae and Taylor index), 1967 (Fourth General Election)	64.3	9.1	48.8 to 86.6	
Gini coefficient	53.7	5.3	41.0 to 74.1	Census of India, 1961 (20% sample)
percent of rural scheduled caste population	18.2	5.8	3.1 to 37.3	Census of India, 1961

[1]These are the parameters for data utilized directly in this monograph; additional Rajasthan data may be obtained from the author; there are two sets: one for several variables on all of Rajasthan's tehsils; another with additional data for 124 Rajasthan constituencies.