STUDIES IN ELECTORAL POLITICS
IN THE INDIAN STATES

Edited by Myron Weiner & John Osgood Field

VOL. III

Electoral Politics in the Indian States
THE IMPACT OF MODERNIZATION

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OTHER VOLUMES IN THE SERIES

Electoral Politics in the Indian States

THE IMPACT OF MODERNIZATION

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INTRODUCTION

The M. I. T. Indian Election Data Project was begun in early 1968 initially under a pilot grant from the Center for International Studies, followed by a major grant from the National Science Foundation, with the objective of undertaking a series of computer-based studies of elections in India since 1952 in the more than 3,000 state assembly constituencies. The early ambitious hope was that these studies could bring to the analysis of Indian elections some of the methodologies and sophisticated statistical tools that have been developed for the study of elections in the United States and other developed countries, test with the Indian electoral data some of the general propositions that have emerged in recent studies of political development, improve our knowledge of the world's largest democratic state, and enhance our capacity to predict future electoral change in India.

The technical dimensions of this project proved to be so formidable that at times we despaired of producing any studies! The data had to be computerized, "cleaned," and checked for inconsistencies. They then had to be arranged in files, concepts had to be converted into measures, and innumerable problems of how to compare constituencies with one another and with themselves over time had to be resolved. At an early stage in the project we considered matching selected census data to constituencies in order to relate some electoral variables such as turnout, competitiveness, and party performance to socio-economic variables but decided not to do so since a number of such studies were under way elsewhere—particularly the work of W. H. Morris-Jones and Biplab Das Gupta at the Institute for Commonwealth Studies in London, Rajni Kothari at the Centre for the Study of Developing Societies in Delhi, Paul Brass at the University of Washington, Harry Blair at Bucknell, and Donald Zagoria at Columbia University.

As the months, then years, passed and the technical problems grew, our research objectives became more limited. We settled on two modest goals: (1) to put the data in usable form and make it widely available to scholars in the United States and India; and (2) to conduct a number of pilot studies on themes that might prove of interest both to India area experts and to those with a broader concern with electoral behaviour in developing countries, in order to illustrate some of the potential uses of the data.

Computer tapes containing the election data have been placed on file with the Indian Council for Social Science Research in New Delhi, at the Inter-University Consortium at the University of Michigan and at the

International Data Library at the University of California, Berkeley. These tapes contain the state election results by constituencies for each general election from 1952 through 1967, the mid-term elections of 1968-69, and several earlier mid-term elections. (Some of the studies used 1971 and 1972 state election data, but since these are "unofficial" returns not yet published by the Indian Election Commission, we have not incorporated them into the permanent archives.) With the tapes is documentation explaining what the archives contain, how they are arranged, and how they can be used. They are available to scholars everywhere under the procedures established by each of these three centres.

Pilot studies were undertaken by members of the M. I. T. faculty and staff and by scholars at other universities. They fall into two principal groups. The first focuses on the relationship between electoral behaviour and some aspects of modernization, taking as their starting point "all-India" problems or phenomena. These studies look at the electoral correlates of India's Green Revolution (Frankel), of varying rates and patterns of migration (Katzenstein), and of urbanization (Weiner and Field). A related group of studies examines changing voting patterns in two types of "backward" regions in India, areas that were formerly part of princely India (Richter) and areas in which tribals live (Weiner and Field). Another study examines the electoral performance of women candidates in state assembly elections (Desai and Bhagwati).

Most of these studies make some use of census and other socio-economic data; the urban study, for example, relates electoral characteristics to city size, the migration study to different patterns of migration, the Green Revolution study to agrarian conditions and their change, and the princely study to selected indices of development. But in the main these studies tend to treat the environment as space; they look not at how tribals voted, but at how tribal constituencies voted; not at how urban dwellers voted, but at how urban constituencies voted; and so on.

A major theme of several of these studies is the way in which national electoral trends intersect with regional variations, and the way in which specific categories of local constituencies are influenced by the state in which they are located. Thus, "princely", "tribal" and urban constituencies each have characteristics of their own; but their electoral patterns are also strongly influenced on the one hand by the particular state in which they are located and by national trends on the other. One striking conclusion is that it is meaningless to characterize the electoral patterns of urban India as a whole, or migrant areas as a whole, or tribal India as a whole. In a country as diverse as India, all statistical differences are "washed out" in national averages. For the purpose of testing most theories of political participation, such as the relationship between social mobilization and political participation, the state and other component units are

far more useful levels of analysis than is India at large, an important lesson for scholars doing cross-national aggregate analyses.

The second group of studies examines the major cleavages in Indian politics and their party and electoral manifestations. Divisions based on class, caste, tribe, religion, urban-rural differences, language, region, and factional alignments are the raw material of Indian political life. The pilot studies examine three types of cleavage politics in the party and electoral systems: ideological cleavages, focusing on the Communist parties of West Bengal (Field and Franda) and Kerala (Hardgrave); regional and ethnic cleavages, focusing on cultural nationalism in Tamil Nadu (Barnett) and religion-based parties in the Punjab (Brass); and caste-cum-factional rivalries in Uttar Pradesh (Baxter) and Mysore (Wood and Hammond). A major theme of these studies is the question of how institutionalized are individual parties and state party systems, that is, how dependable and persistent is the support for individual parties over several elections, and to what extent do voters give their support to "major" parties as opposed to frittering away their votes for smaller parties and independent candidates.

It is not possible to summarize here the many findings of these studies, but several can be mentioned: the importance of what can be called "proximity" variables, such as ethnic concentrations, railroad and river lines, and settlement clusters; the durable bases of party support in states like West Bengal, Kerala, and Tamil Nadu, but not in Uttar Pradesh, where "flash" parties are indicative of fragile voter loyalties; the mobilizing capacity of princely candidates and ethnic parties like the DMK in Tamil Nadu or the tribal Jharkhand Party in Bihar to increase voter turnout, but the inability of ideological parties with a class appeal to do the same; the poor performance of incumbents standing for re-election; the surprisingly large margin of victory for most party candidates and the correspondingly few constituencies that are intensely competitive in terms of how the vote is distributed; and finally, the considerable amount of continuity in party support and electoral outcomes from one election to another, a possible measure of the extent to which Indian parties are institutionalized.

A major effort was made to develop and consistently use measures for the various concepts that were employed. These include measures of participation, competitiveness and bloc cohesion, party institutionalization, and party performance. Procedures were also devised for measuring the way in which votes are translated into seats, the success with which parties are "transferred" from one party to another over time, and how party swings take place, especially with regard to the gains and losses for incumbents.

Preliminary versions of most of these studies were presented in June 1972 at a seminar on electoral patterns in the Indian states held at the estate of the American Academy of Arts and Sciences in Brookline, Massa-

PREFACE

The studies in this volume examine the electoral consequences of two aspects of social change and modernization in India: urban growth and agricultural development. Both developments have accelerated since independence and both are likely to continue to be among the most important transformations experienced in India through the remainder of this century. The three studies reported here consider the impact of these changes on electoral turnout (politicization), electoral preferences (especially radicalization) and electoral competitiveness (polarization).

In 1951, 62 million Indians, i.e., 17.3% of the population, lived in urban settlements. Twenty years later, 109 million Indians were living in towns or cities, i.e., about 20% of the population. The most rapid growth has been in cities of over one hundred thousand: 75 in 1951 and now numbering 147. While only 6.5% lived in such settlements in 1951, by 1971 the figure was up to 10.4%.

One out of every five Indians now lives in an urban area. One out of every eight lives in an urban constituency, that is, a town or city with more than 50,000 persons. Since the urban growth rate is now twice the rural growth rate, in the next fifteen years we can expect one out of every five and a half Indians to live in urban constituencies.

How have urban voters behaved? The chapter by Field and Weiner reviews twenty years of urban voting trends. In a sense, though, it provides a national view of electoral trends in India, for urban constituencies are compared with rural constituencies in an effort to explore how great the divergence is between rural and urban India.

The differences are not as great as one might have expected. While India's urban constituencies are generally more politicized, radicalised and polarized than its countryside, this study shows the similarities between urban voting patterns and the voting patterns of the rural regions in which urban constituencies are located, suggesting that the concerns of Indians, at least insofar as they are expressed electorally, do not differ greatly as between a town and a village. The major electoral differences in India are between states and regions of states, not between urban and rural areas. We have sought to interpret these findings in the framework of current controversies and conflicting theoretical models concerning the importance of urbanism as a political phenomenon.

In any event, the political impact of urban areas is greater than any mere statistical analysis of population proportions would suggest. But this study does suggest at least one sound statistical reason why political

parties and the government in India lavish so much political attention on the urban constituencies. Urban constituencies tend to be more closely contested than rural constituencies, so that when the outcome of state assembly elections is uncertain, as they have often been since 1952 (and as the national parliamentary elections became after 1967), the urban constituencies become more critical to the balance of political power.

In what ways do cities differ electorally amongst themselves? The chapter by Field and Weiner explores differences related to the rural context and differences related to city-size. Professor Katzenstein's chapter focuses attention on the question of whether variations in electoral turnout can be related to migration.

Nearly one out of every thirteen Indians is a migrant living in a city or a town. In absolute numbers the figures are even more striking: of India's 109 million urban residents, forty-three million (about 40%) are migrants. Twenty-nine million of the migrants come from the same state, eleven million from other states, and three million from Pakistan, Bangladesh and other countries.

In the past decade (1961–71) India's urban areas gained thirty-million residents, slightly under twenty million through natural population increase and more than ten million through migration (35%). India's high rate of natural population growth (24.7% in the decade) thus tends to disguise the magnitude of her cityward migration.

These forty-three million migrants have had an enormous impact on India's towns and cities. They have played a major role in their industrial development, provided a large part of the manpower for constructing houses and factories, and provided much of the urban services, from plying rickshaws and taxis to working as household servants for the middle classes. At the same time they have also added to the burden on urban services: on schools and hospitals, electricity and water supply, transportation, and housing.

In the course of her statistical analysis of electoral turnout in India's largest cities (those exceeding 100,000) for the 1962 state assembly elections, Professor Katzenstein discovered that a simple attempt to correlate electoral turnout with the proportion of migrants in different cities reveals nothing of significance. This led her to disaggregate the types of migration and to single out for analysis four characteristics of migrants, an exercise that proved to be remarkably fruitful. The result, therefore, is a study that is as useful for its careful specification of hypotheses relating different types of migrant characteristics to electoral behaviour as it is for its specific findings.

Professor Katzenstein shows that the length of urban residence of migrants, the level of development of the region from which they come, and their commitment to urban life are important determinants of electoral participation. Distance, even when it involves inter-state migration,

proves to be less of a determinant than might be usually expected. With respect to each of these relationships, professor Katzenstein not only reports her statistical findings but suggests why these relationships (or in some instances, the absence of a relationship) are theoretically plausible. The data reported here suggests that rather than play a major role in the urban electoral politics, migrants tend to have a low rate of electoral assimilation, though for reasons suggested by Professor Katzenstein, some migrants have assimilated electorally more rapidly than others.

This study is suggestive of some of the research needs in the neglected field of migrant political behaviour, a subject likely to grow in importance for India since the proportion of urban growth due to migration will increase as the rate of natural population growth declines, while the absolute number of migrants to cities continues to increase with the country's industrial growth.

The recent decline in Indian agricultural productivity as a result of two consecutive years of drought, the rising cost of energy for irrigation, and the increased cost of fertilizers, has tended to obscure the long-term growth of Indian agriculture. Indian grain production, nearly stagnant for the first half of this century, jumped sharply from a little over 50 million tons in 1950 to 108 million tons in 1970. Though some of this growth can be attributed to an increase in the amount of acreage under cultivation, much of the increase is in per acre productivity, the consequences of an agricultural transformation—popularly known as the Green Revolution—involving the use of new hybrid seeds in grains, fertilizers, insecticides, irrigation and machinery. This agricultural "revolution"—for that is its promise—has thus far been limited to certain areas of the country and within those regions to some farmers more than others. But where it has occurred there have been impressive increases in agricultural productivity, changes in the price of land, the wages of agricultural labourers, the earnings of peasant proprietors, the price of produce, changes in the flow of migrants from rural to urban areas, and fundamental social changes in the traditional status relationship of men to each other and to the land.

The impact of these changes on political life will surely be substantial, but precisely what form they will take remains uncertain. Will class interests become more salient than of caste as a factor in political behaviour? What new agrarian cleavages will emerge? How will the interests of the larger peasant proprietors, the small farmers, the tenants, agricultural labourers, producers of farm implements, processors of agricultural commodities, rural money lenders, and grain merchants be expressed politically? Professor Frankel, in her book *India's Green Revolution: Economic Gains and Political Costs*, and in subsequent papers, has given systematic attention to unraveling some of these political effects of the Green Revolution. In Chapter 3 of this volume she focuses on the problem of devising appropriate

analytical tools for studying in an empirical fashion the electoral effects of what is likely to be India's major economic development process in this decade.

As Professor Frankel points out, there are numerous methodological difficulties in attempting to assess the effects of socio-economic change on electoral behaviour. What, for example, should be the unit of analysis—the individual or village, the constituency, the district, the region, or the state? And how does one sort out the effects of agrarian changes from other changes or sort out the impact of class affiliation from that of the caste and other ethnic identities as determinants of electoral behaviour? What political effects should we look for—changes in voter turnout, shifts in party preferences, increasing competitiveness, the emergence of issue politics? What time dimension is relevant—five, ten, fifteen years? Finally, how reliable are the data on agricultural growth, farm size, and income?

It is to methodological issues like these that Professor Frankel has had to give her attention before she can report substantive results, particularly the issues of the unit and level of analysis. There are bound to be disagreements among scholars as to whether she has found the best solution to these methodological issues, but anyone looking at the political effects of agrarian change will be grateful to Professor Frankel for her precise, analytical attempt to work out methodological solutions to difficult problems.

What are her substantive findings? They must of necessity be highly tentative since the Green Revolution is still in a nascent stage and the region she examines in detail, the western region of U. P., is only one of several areas thus far affected. In this region of India a "flash" party emerged in the late 1960's, the Bharatiya Kranti Dal (BKD). Elsewhere in this series (see Craig Baxter, "The Rise and Fall of the Bharatiya Kranti Dal in Uttar Pradesh" in Vol. 4, *Electoral Politics in the Indian States: Party Systems and Cleavages*), this party is examined in the context of the U. P. party system. Here, Professor Frankel examines the BKD in the context of the *agrarian region* in which it had its strength. Her primary concern is the way in which rapid agrarian modernization has resulted in the political mobilization of the peasantry, especially (though by no means exclusively) the Jat caste, an important leading group of the middle peasantry. At the seminar in which she presented an earlier draft of this study she raised the question of who the relevant political actors were and how they are best defined. The Jats, she pointed out, are a caste, but they are also peasants, and the BKD's appeal was essentially peasant-based. It was because Congress and other parties were not responsive to the needs of this agrarian class, she argued, that the BKD arose. She then points out that the vote for the BKD is negatively associated with small farms and positively with large farms, that the area with the most rapid agrarian growth appears to have had the largest increase in voters turnout, and that there

is some fragmentary evidence that traditional links between peasant proprietors and the landless have been broken, at least insofar as electoral behaviour is concerned.

Professor Frankel is, of course, analyzing only one region of India, wherein the N's are small and correlations may be spurious. There have been few "post-Green Revolution" elections. Some of the political changes she describes were small (e.g., increased turnout) or temporary (the votes for the BKD). And agrarian patterns and social relationships differ sufficiently from one region to another in India so that one would be unwise to generalize from a single region or state. But Professor Frankel plausibly suggests that a regional rather than an all-India approach may in fact prove to be the most useful method for analyzing the political effects of *differential* agrarian modernization.

These studies suggest that there may well be in India an unrealized potential for increased politicization and radicalization, but not, as some might expect, from the poorest income groups. In the countryside it is the "middle" land-owning peasantry, rather than the impoverished landless labourers, who are becoming increasingly concerned with influencing government policy and administration; and in the cities it is not the migrants or the unemployed urban poor as much as the middle classes, the educated youth and the organized working class who seem most capable of political action. If this interpretation is correct, then we might expect a political upsurge in the countryside or in the city, not necessarily during this period of stagnant agriculture and slow growing industry, but in the years ahead when commercialized agriculture is extended, industrial employment expands (but educated unemployment continues to grow), the budgets of state and central governments increase, and the pace of social change is accelerated.

March 1975   MYRON WEINER

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CHAPTER III

PROBLEMS OF CORRELATING ELECTORAL AND ECONOMIC VARIABLES: AN ANALYSIS OF VOTING BEHAVIOUR AND AGRARIAN MODERNIZATION IN UTTAR PRADESH*

Francine Frankel

1. Introduction: Methodological Problems and Substantive Relationships

The usual problem for social scientists studying the relationship of socio-economic change and political behaviour in new states is the paucity of reliable data. This problem is virtually inverted for the scholar of Indian development. Since 1952 the Election Commission has published the detailed results of five national elections and five rounds of state elections, augmented by the returns of several mid-term polls. This massive amount of political information coexists with an equally voluminous set of decennial census materials collected for each state by administrative division, district, and town and presenting changes over time not only in population trends, but in several other social variables, including literacy, urbanization, occupational structure, patterns of landholding, and distribution of major religious groupings and scheduled castes. The census materials, moreover, are complemented by a growing volume of state and district economic data, collected by ministries of the Government of India and the state governments, the national Planning Commission, state planning units, and private and public research organizations.

Despite the abundance and variety of these materials, however, research on Indian development has tended to remain demarcated within the boundaries of the major disciplines. In general, economists, sociologists, and political scientists have gone their separate analytical ways, charting changes in terms of variables that are internal to their discipline.

A partial explanation for the relative scarcity of studies on political

ecology in India can be found in the methodological problems surrounding two central issues of quantitative analysis: (1) the appropriate unit of observation and (2) the appropriate level of analysis. The first dilemma arises from the fact that the primary units of economic and electoral data collection are non-congruent. Census information and economic estimates —collected by official agencies with public policy in mind—are usually gathered for the district as the basic unit of state administration. By contrast, voting results are reported for the constituency, the unit in which all contests for the state legislative assemblies take place. The constituency is delimited as a subdivision of the district; apart from the few exceptions of very thinly populated areas, all districts are divided into multiple electoral units.

This disparity in units of political and economic observation would not present a serious obstacle to systematic comparison of electoral and socio-economic data if it could be assumed that the district is, in fact, a cohesive unit, i.e., that variation within the district is significantly less than between districts. It would then be possible to proceed by calculating district means for electoral data and using them as the basis of correlation with district economic data. The fact is, however, that the district is not always a suitable unit of observation for electoral variables. Frequently, the district represents too large an area to meet minimum standards of internal cohesion. District averages, which smooth out variations in the distribution of electoral data, often cancel out—and conceal—sharply divergent patterns among constituencies. It is, therefore, methodologically unsound to make an a priori assumption that the district is a politically relevant unit.

The second difficulty, that of identifying the most appropriate level of analysis, derives from circumstances common to many developing countries. The district is clearly too small to constitute a self-contained socio-economic grouping, and units larger in scale are necessary. Yet, analysis at the state or national level may actually obscure the most relevant economic boundaries. In general, this situation arises from the fact that the district is an artificially drawn unit of state administration. It often truncates—and obscures—natural subdivisions within the state at the regional level. This is troublesome not only in India, but in many developing countries, where natural agro-climatic or geographic divisions are apt to coincide with different patterns and levels of development. The tendency to concentrate scarce capital, social overhead, and administrative infrastructure in areas with favourable factor-endowment as the best means of ensuring maximum returns to investment also accentuates pre-existing disparities between "advanced" and "backward" regions. For this reason, when the district is used as the basic unit of comparison in correlation analysis carried out at the state or national level, relationships which do

exist between electoral and economic variables within some regional subdivisions are often submerged or weakened by the absence of such relationships in others.

The unresolved methodological problems have reinforced the tendency of political scientists to approach the study of Indian voting behaviour mainly through examination of internal variables such as rates of participation, party competitiveness, and the performance of parties over time and space. Yet, unidimensional models constructed in political terms are becoming less satisfactory as analytical frameworks in exploring changing patterns of voting behaviour. The emergence, since the late 1960's, of new parties and their ability, despite weak organization, to use populist appeals in mobilizing the peasantry for victories in state and national elections indicate that a full explanation of electoral change requires greater attention to the linkages between voting behaviour and changes in the environment.

While attempting a preliminary inquiry into the electoral impact of "green revolution" or agricultural change, this chapter focuses on the methodological questions that must be of prior concern to the analyst of political ecology in India. It suggests possible approaches for overcoming the difficulties of systematic comparison of electoral and economic variables under conditions when primary units of observation are non-congruent and the incidence of economic development is unevenly distributed within states.

A constraint on the selection of alternative solutions should be noted at the outset: the district must necessarily constitute the basic unit of observation as long as economic information is collected and published for administrative divisions, a practice which cannot be expected to change in the near future. Stated somewhat differently, any solution to the problem of constructing comparable units of analysis must proceed from the fact that it is technically possible to aggregate constituency-based data up to the district level, but it is generally not feasible to disaggregate economic data to coincide with constituency boundaries.

The methods suggested in this study are addressed to two questions. (1) Under what circumstances can the district be accepted as the relevant unit of political observation in constructing comparable units of electoral and economic analysis and (2) What is the appropriate level of analysis for the comparison of electoral and economic variables? A major consideration in raising the first question is that when variation in the distribution of party votes is greater within districts than between them, correlation analysis is of very limited utility. It is therefore necessary to establish the extent of variation in internal distribution of electoral patterns, and to do this through a constituency-by-constituency examination of the data. If any serious discrepancy between the percentage of votes won by each political party, calculated as all-district averages and as constituency-based averages aggregated to the district level can be shown, then it is necessary

to apply objective criteria of district political cohesion (to the constituency-based data) as an empirical test of whether or not the district can be treated as a relevant unit of electoral observation.

Other procedures are necessary to determine the appropriate level of analysis. This study suggests that in the special circumstances of developing countries, where distribution of economic growth is often unevenly skewed in favour of "advanced" areas, the most useful level for the comparison of electoral and economic variables is the geographic region. The approach adopted, therefore, involves an effort to identify new boundaries around which the data should be grouped, corresponding to clusters of districts approximating major economic regions.

The final sections of this chapter apply the methods outlined above to an exploration of the substantive problem of changing patterns in rural voting behaviour. Specifically, the data are examined to investigate the linkages between growing availability of the peasantry for populist forms of political participation and the rapid introduction of modern techniques and commercialization of agriculture. The decision to focus on this particular set of substantive relationships is guided by earlier analyses of case-study materials suggesting that rapid introduction of modern technology and commercial forms of economic life accelerates the erosion of vertical forms of peasant mobilization.[1] A systematic analytical framework accounting for the dynamics of this interaction has been advanced elsewhere.[2] A few points, however, are in order.

The introduction of modern techniques can open up unprecedented opportunities for substantial economic gains to peasant cultivators who are members of low-ranking "backward" castes.[3] Their experience of rapid economic mobility within the static social framework of the traditional caste hierarchy provides existential contradiction of religious teachings that sanctify poverty along with inequalities in ritual ranking. Simultaneously, the new technology exercises a demonstration effect on the awareness of the peasant cultivator that modern methods can make the everyday economic world amenable to his own prediction and control. The authoritative position of the landed upper castes, part of whose prestige

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[1] Francine R. Frankel, *India's Green Revolution: Economic Gains and Political Costs* (Princeton, N.J., Princeton University Press, 1971).

[2] *Ibid.*, pp. 197-202. See also Francine Frankel and Karl von Vorys, "The Political Challenge of the Green Revolution: Shifting Patterns of Peasant Participation in India and Pakistan," Policy Memorandum No. 38, Center of International Studies, Princeton University, March 1972, pp. 1-9.

[3] The backward castes are generally peasant castes which, by virtue of poor education and limited access to other resources, are underrepresented in university and administrative institutions and have been officially designated as members of the "backward classes" under state law, permitting them to qualify for preferential treatment in the award of scholarships and/or appointment to civil service posts.

has been traditionally based on a monopoly of knowledge to influence the gods in manipulation of elements which affect prosperity, is correspondingly eroded.

Once the determinants of economic well-being are subjected to demystification and located for the first time in the material powers of modern technology and science, the way is cleared for the first tentative distinctions between the sacred and secular spheres. The even-handedness of the scientific method—the observable fact that high-yielding varieties, fertilizer, and water works as well as on the small plot of the low-caste peasant farmer as on the large holding of the Brahmin landlord—encourages the notion that all cultivators can legitimately claim an equal share in the new prosperity.

Peasant farmers who come to accept the validity of secular norms in economic life are less willing to concede the relevance of ascriptive criteria in the political sphere. On the contrary, once poverty and unrewarded effort begin to be perceived as problems of the mundane world, efforts to increase access to resources that are necessary to exploit the solutions provided by modern science—including acquisition of political power—acquire a legitimacy of their own.

The cultivating castes have, of course, always enjoyed the advantage of numbers. As a result of rapid agricultural modernization, they acquire, in addition, the material resources necessary to challenge the dominance of the upper-caste landed elites. Most important, they begin to accumulate the reserves which in times of scarcity make them more independent of "good relations" with large landowners as the primary means of ensuring their subsistence. One political consequence is erosion of leader-centered multi-caste (class) political factions built by upper-caste landlords with the support of dependent peasant groups. Over time, vertical patterns of peasant mobilization progressively gives way to horizontal alignments of categorical (low caste-class) groups organized around common economic interests.

2. The Political Economy of Uttar Pradesh: Regional Differences

The methodological and substantive questions raised in this chapter are applied to a data base drawn from the state of Uttar Pradesh. This selection has been made for a number of reasons. Uttar Pradesh is the largest state in India, accounting for some 88 million persons and one-sixth of the entire electorate. It is a state which is predominantly rural in character. In 1961 only some 13% of the total population lived in urban areas compared to the all-India average of 18%[4]. Of 54 districts, only

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[4] Census of India, 1961, Vol. XV—Part IX, *Census Atlas of Uttar Pradesh*, p. 86

four had high concentrations of urban population.[5] Within the state, moreover, there are at least five distinct regions, (as represented in Figure III:1 below) (on p. 155) each of which has experienced a different pattern of development.

The eight northernmost districts[6] fall primarily within the Himalayan range. They are sparsely populated; and to the extent they have economic importance, it is as centres of the trade routes with neighbouring mountain kingdoms. The overwhelming majority of the population, approximately 90%, live in the plains area of the Gangetic basin. This heartland is subdivided into three important agro-economic divisions. The West Plain, part of which borders on Punjab, consists of 19 districts,[7] including the most prosperous area of the state. Here the construction of large-scale irrigation canals fed by the Ganges and Jumna Rivers, starting as early as the 1830's, transformed the northwestern region (Doab) into some of the richest land in British India. By the turn of the century, a trend toward commercial farming was well established. The availability of an assured water supply maximized output within the traditional framework of production and protected profits by providing safeguards against severe crop loss in bad weather years. In the 1930's water from these major irrigation projects was supplemented by the installation of large tube-wells. The result was an increase in per-acre yield and production that provided a further stimulus to the extension of the market economy. By 1951, commercial crops, primarily wheat and sugarcane, were cultivated over 37% of the area.[8]

The benefits of irrigation did not come to the adjacent Central Plain of 12 districts[9] until the mid-1920's after the construction of the Sarda canal system. Even then, they extended over a smaller proportion of the net cropped area. By 1951, little over 29% of the cultivated area was under wheat, sugarcane, and other commercial crops.[10] Almost as much land was cultivated under paddy for home consumption as under wheat. Commercial agriculture showed the slowest pace of advance in the ten

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[5] *Ibid.*, p. 86. These districts are Lucknow (49.5%), Dehra Dun (46.1%), Kaanpur (41.0%), and Agra (35.9%).

[6] Garhwal, Tehri Garhwal, Naini Tal, Almora, Dehra Dun, Chamoli, Pithoragarh, and Uttar Kashi.

[7] Saharanpur, Bareilly, Bijnor, Pilibhit, Rampur, Kheri, Muzaffarnagar, Meerut, Bulandshahr, Aligarh, Mathura, Agra, Mainpuri, Etah, Budaun, Moradabad, Shahjahanpur, Etawah, and Farrukhabad.

[8] Baljit Singh and Shridhar Misra, *A Study of Land Reforms in Uttar Pradesh* (Calcutta: Oxford Book Company, 1964), p. 62.

[9] Kanpur, Fatehpur, Allahabad, Lucknow, Unnao, Rae-Bareli, Sitapur, Hardoi, Faizabad, Sultanpur, Pratapgarh, and Bara Banki.

[10] Singh and Misra, *op. cit.*, p. 62.

Figure III 1

ECOLOGICAL REGIONS
OF
UTTAR PRADESH

- Himalayan Region
- West Plain
- Central Plain
- East Plain
- Southern Hills and Plateau Region

districts of the East Plain.[13] The eastern region of the state (including the tail-end area of the Sarda canal system in the eastern part of the Central Plain) continued to experience severe shortages in the supply of irrigation water. The area was, however, the region of greatest assured rainfall in the state, and consequently (like neighbouring Bihar) had the highest population densities and the most impoverished cultivators. Most of the land under cultivation was given over to paddy; in 1951 the area under

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[13] Gorakhpur, Deoria Basti, Gonda, Bahraich, Varanasi, Jaunpur, Ghazipur, Ballia, and Azamgarh.

commercial crops was estimated at less than 16%.[18]

One other geographic area may be briefly mentioned. This consists of the five districts in the Hills and Plateau region south of the Gangetic Plain.[19] The construction of canals in the western part of this area since 1951 has encouraged an expansion in the cultivation of wheat. Nevertheless, the largest portion of the wheat area does not have assured water, and production levels are uncertain from year to year.

These long-standing regional differences in development have been accentuated by the second, recent, and more profound commercial revolution in wheat dating from the introduction of new technology in the mid-1960's. The successful cultivation of the new high-yielding dwarf varieties of Mexican wheat, in combination with a package of modern inputs including very high doses of chemical fertilizer, depends heavily on assured supplies of water. In fact, irrigation at fixed times in the growth cycle of the plant is essential to the realization of its high-yield potential at double the maximum output of local varieties. Of necessity, therefore, the impact of the "green revolution" has been greatest in the irrigated wheat area.

Growth rates of wheat in Uttar Pradesh as a whole are indicated in Table III:1. The data suggest a linear growth rate of 8.8% per annum

TABLE III: 1

Changes in Area, Output, and Yield of Wheat in Uttar Pradesh, 1959-1960 to 1968-1969 (43 Districts)

	Mean	Standard Deviation
Increase in Total Output (%)	88.0	43.6
Increase in Net Cropped Area under Wheat (%)	42.3	29.9
Increase in Yield (%)	34.4	24.1

since 1950-1960. Actually, the magnitude of change involved in the latter four years, 1964-1965 to 1968-1969, is considerably understated. This occurs because the district wheat data used was available only for 1959-1960 and 1968-1969 and because changes in area, output, and productivity had to be averaged over a ten-year period. In point of fact, the growth rate for wheat production was as low as 2.4% per annum until 1964-1965; the bulk of the increase in output, over 63%, therefore occurred within the following four years, at an annual average rate of about 15%. This was the result both of very great expansion in the percentage of the net cropped area cultivated under wheat and of increases in yield per hectare.

[18] Singh and Misra, *op. cit.*, p. 236.

[19] Jhansi, Jalaun, Hamirpur, Banda, and Mirzapur.

The distribution of these advances, however, as indicated by high rates of standard deviation of mean increases in total output, net cropped area under wheat, and yield per hectare, is very uneven. Of the 43 districts considered in this study,[14] only 25 are "wheat" districts according to established standards, namely, that 25% of the net cropped area is cultivated under wheat and that wheat is the predominant food grains crop. These include all 18 districts of the West Plain, six of the ten districts in the Central Plain, and three of the five districts in the Hills and Plateau region. None of the ten districts in the East Plain meets these criteria.

Within the wheat districts, therefore, the gains are—predictably—unevenly divided among the major regions. Indeed, except for the increase in wheat area, which is highest in the East Plain, the indicators of economic growth rise progressively as one moves westward. The results are shown in Table III:2.

TABLE III:2

Changes in Area, Output, and Yield of Wheat by Region: Uttar Pradesh (1959-1960 to 1968-1969)

	Hills and Plateau		East Plain		Central Plain		West Plain	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
	%	%	%	%	%	%	%	%
Increase in Total Output	42.0	10.3	73.7	24.3	78.8	48.2	110.0	43.6
Increase in Net Cropped Area under Wheat	9.9	7.7	56.1	34.4	36.8	26.4	41.2	24.3
Increase in Yield	30.0	20.0	19.2	18.0	30.0	26.2	48.2	23.4

Arrangement of the wheat districts according to region, therefore, helps considerably in constructing cohesive units for economic analysis. The problem of internal variation, however, is still present. The most advanced area, the West Plain, shows a deviation from the mean increase in output, area, and yield of 40%, 58%, and 48% respectively. A more cohesive cluster of high-growth districts may be identified by applying criteria created by summing together the mean and one-half the standard deviation for increases in output, area, and yield of wheat reported for all 43 districts between 1959-1960 and 1968-1969. A wheat district is characterized as a high-growth area if it meets two of the three following standards: (1) an increase of 109% in total output, (2) an increase of 57% in net cropped area under wheat, and (3) an increase of 46% in yield.

[14] Eleven of the 54 districts in Uttar Pradesh have been excluded from this study as unrepresentative of the predominantly agricultural economy. They include the eight districts in the mountain region and three with atypically high levels of urban population (Agra, Lucknow and Kanpur).

The result of applying these yardsticks is a new grouping of ten "green revolution" districts, nine of which are in the West Plain (including five in the Ganges-Jumna Doab) and one in the Central Plain. Table III:3 below indicates these are higher growth districts than any set so far examined; they also have greater internal cohesion.

TABLE III: 3

Changes in Area, Output, and Yield in the Ten Highest Growth Districts in Uttar Pradesh (1959-1960 to 1968-1969)

	Mean	Standard Deviation
	%	%
Increase in Total Output	146.0	24.6
Increase in Net Cropped Area under Wheat	57.0	27.9
Increase in Yield	58.9	23.5

Regional differences are also a prominent factor in the distribution of another important economic variable, the pattern of landownership. They derive from the uneven impact of the zamindari system on concentration of landownership in different parts of the state. Prior to the land reforms of the early 1950's, virtually all of the land in the state was owned by less than 8% of agricultural households. Most of these zamindars— over two-thirds—were subsistence farmers holding less than five acres. At the same time, approximately 2% of zamindars owned vast holdings covering 57% of the land.[15] Inequality in the distribution of land-ownership was most extreme in the central and eastern districts. In the central region 11% of zamindars owned three-quarters of the land.[16] The pattern of landownership was only slightly less skewed in the eastern region, where approximately 11% of zamindars accounted for 61% of the area.[17] In both the eastern and central regions, the great majority, over 75%, owned holdings of less than five acres, accounting for 4% of the land.[18]

The extreme polarization between great absentee landlords and sub-sistence farmers did not occur to the same degree in the western region. The large zamindars, about 5% of the total, owned roughly 51% of the land. At the other end of the scale, subsistence landowners with holdings of below five acres accounted for 45% of zamindars and 4% of the land. Between these two groups, a fairly substantial class of medium landowners emerged: 36% owned holdings of 5-25 acres and 18% of the area. Another

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[15] The data collected by the Uttar Pradesh Zamindari Abolition Committee is presented in Singh and Misra, *op. cit.*, p. 25-27.

[16] *Ibid.*, p. 215.

[17] *Ibid.*, p. 216.

[18] *Ibid.*, pp. 215-216.

13% owned farms of 25-100 acres and 13% of the area.[18]

Zamindari abolition in 1951 substantially reduced the absolute disparities between the large ex-zamindars and the vast bulk of the peasantry. Yet it did not reverse the relative status and income differentials between them. The great absentee landlords lost title to the lion's share of their estates, those areas which were in cultivating possession of tenants at the time of zamindari abolition. They were not, however, expropriated. Zamindars were permitted to keep full ownership rights in their home-farms (lands under their direct occupation). After enforcement of the land reforms this accounted for about 15% of the total cultivated area.[20] They were, in addition, awarded generous compensation for the value of the lands that passed to the state.

By contrast, under the provisions of the Zamindari Abolition Act occupancy tenants were simply confirmed in their status with permanent and heritable rights in their tenancy. They could not mortgage or freely transfer their land, and they remained liable for revenue payments to the state equal in amount to the rental they paid the zamindars on vesting day. The government expected the majority of occupancy tenants to take advantage of provisions in the Zamindari Abolition Act to purchase ownership rights and qualify for a 50% reduction in revenue payments. Yet the tenants failed to do so in significant numbers. By 1960, only one-third of the cultivated area was held under ownership rights, and some 45% of the total represented the home-farms of the ex-zamindars.[21]

Finally, since the largest landlords were absentees and acted only as rent receivers, the abolition of intermediary rights had little impact on the distribution of operational holdings (as opposed to ownership holdings). According to data collected for the 1961 census, the three regions of the Gangetic Plain continued to differ from each other with respect to the extent

TABLE III: 4

Distribution of Land Holdings in Uttar Pradesh by Size-Group And Region (1961)

Holdings by Size-Group	Percent of Cultivators		
	West Plain	Central Plain	East Plain
Less than 5 acres	53.3	72.7	66.0
5-9 acres	28.4	19.0	15.2
10-14 acres	9.5	4.6	4.5
15 acres and above	7.0	3.1	3.8

Source: Census of India, 1961, Volume XV, Uttar Pradesh, Part IIIA, Household Economic Tables, pp. 16-52.

[18] *Ibid.*, p. 215.
[19] *Ibid.*, p. 35.
[21] *Ibid.*, pp. 121, 123.

of concentration of landholding, as shown in Table III:4 above

In the Central Plain the overwhelming majority of cultivators, almost 73%, remained subsistence farmers with holdings of less than five acres. Under 8% had holdings of ten acres or more. This situation was only somewhat improved in the East Plain, where two-thirds of all cultivators operated holdings of less than five acres and only 8% had farms of ten acres or above. In the West Plain, by contrast, subsistence cultivators, while still predominant, constituted a smaller majority of approximately 53%. The proportion of medium and large farmers was relatively high: over 16% had holdings of ten acres and above.

Region is a less salient category in the consideration of a third important socio-economic variable: the relationship of landownership to caste and community. There are some patterns, however, that coincide with regional cleavages and should be briefly mentioned.

Under the zamindari system, there was a strong correlation between landownership and membership in the upper castes. The two major elite castes, Brahmins and Thakurs, together accounting for about one-sixth of the population, provided almost one-half of the total number of zamindars and owned 57% of the land. Roughly one-half of upper-caste zamindar families enjoyed large holdings of 15 acres or more, and almost 30% had holdings of 40 acres and above.[22] By contrast, the untouchable castes (subsequently referred to as scheduled castes), averaging some 20% of the population but occupying the lowest rung on the Hindu scale of ritual hierarchy, were virtually excluded from the zamindari system.[23]

The Muslim religious minority, as a favoured group in Uttar Pradesh under British rule, received relatively considerate treatment in the allocation of zamindari rights. Accounting for 15% of the population, they constituted about 10% of the total number of zamindars and owned 11% of the land. About 38% had holdings of 15 acres or more.[24]

The largest social grouping of the population, the Hindu peasant castes occupying a middle rank between the elite castes and former untouchables, received zamindari rights in lower proportion than their numerical strength. Accounting for 45% of the population, families belonging to the peasant castes provided 32% of zamindars and owned 38% of the land. Twenty-five percent of this group had holdings of more than 15 acres. The majority, 51%, had ownership rights in farms of 5-15 acres.[25]

Although the pattern of relationship between landownership, caste, and community cross-cuts r e g i o n a l boundaries to a significant degree, there is evidence of some regional variation. The last census to present

[22] *Ibid.*, p. 218.
[23] *Ibid.*
[24] *Ibid.*, p. 219.
[25] *Ibid.*, p. 218.

data on the distribution of caste Hindus was the enumeration of 1931. Estimates based on those data put the percentage of Brahmins and Rajputs in the total population at approximately 9% and 8%, respectively. Assuming that these proportions have remained relatively constant, attempts to disaggregate the data by district indicate that the two castes are distributed rather evenly and thinly throughout the state. The few exceptions are a predominant Thakur presence in the sparsely populated mountain regions and in one eastern district where they are the largest Hindu caste. Brahmins, who constitute roughly 5% of the population in most districts, have double that proportion in two central districts and one eastern district. The dominance of the elite castes, therefore, is somewhat more pervasively felt in the eastern and central regions; the great absentee landlords from among their ranks, those approaching the status of virtual rulers or "rajas" over estates covering several villages and even administrative subdivisions (talukas), were concentrated in these areas.

Current census data are available on the distribution of scheduled castes and the major religious communities. They show a more noticeable regional variation in the location of these groups throughout the state. In the case of the scheduled castes, which account for about 20% of the population, concentrations in higher-than-average numbers occur in all districts of the Central Plain and the Hills and Plateau regions. Their number falls below the average in 12 of the 18 districts of the West Plain and in eight of ten districts in the East Plain.

The most highly skewed regional distribution, however, is exhibited by the Muslim minority. Although Muslims constitute approximately 15% of the total population, they are double their average strength in four contiguous districts in the northern area of the West Plain. Another seven of the 18 districts in the West Plain have higher than average Muslim populations. By contrast, Muslims fall below their average numbers in all but two districts in the Central Plain and three districts in the East Plain. The lowest Muslim population is in the five districts of the Hills and Plateau region, where their greatest proportion is 7.6%. Table III:5 shows the percentage distribution of Muslim and scheduled caste population by district organized according to region.

TABLE III:5
**Distribution of Muslims and Scheduled Castes by
Districts and Region in Uttar Pradesh (1961)**

	Muslims	Scheduled Castes
	%	%
Western Region		
Saharanpur	31.1	28.3
Muzaffarnagar	28.0	18.1

TABLE III:5 *(continued)*

	Muslims	Scheduled Caste
Meerut	21.0	19.5
Bulandshahr	17.3	21.4
Aligarh	11.6	22.0
Mathura	7.0	21.3
Bijnor	36.5	22.7
Moradabad	37.3	18.8
Budaun	17.4	17.0
Etah	10.4	17.0
Mainpuri	4.7	18.3
Etawah	5.9	26.9
Rampur	45.0	12.9
Bareilly	29.0	14.7
Pilibhit	21.1	14.1
Shahjahanpur	15.3	18.0
Farrukhabad	12.4	17.4
Kheri	16.8	27.7
Central Plain		
Fatehpur	10.2	22.8
Allahabad	11.8	25.9
Unnao	8.4	28.7
Rae-Bareli	9.2	29.9
Sitapur	16.3	32.6
Hardoi	11.0	32.6
Faizabad	11.2	25.8
Sultanpur	12.2	24.0
Pratapgarh	11.2	21.1
Bara Banki	18.7	29.0
East Plain		
Gorakhpur	10.0	20.9
Deoria	11.5	15.1
Basti	18.7	20.1
Gonda	20.9	19.0
Bahraich	25.6	18.4
Varanasi	10.3	19.8
Jaunpur	8.3	21.8
Gazipur	8.2	18.5
Ballia	5.7	13.2
Azamgarh	12.6	25.3
Hills and Plateau		
Jhansi	4.4	28.6
Jalaun	7.6	28.7
Hamirpur	6.7	28.3
Banda	5.2	23.0
Mirzapur	5.3	36.6

Sources: Census of India, Vol. XV, Uttar Pradesh, Part V-A (i), pp. 40-271; Craig Baxter, District Voting Trends in India: A Research Tool (New York: Columbia University Press, 1969), pp. 301-354.

The distribution of the peasant or "backward" castes can only be roughly approximated by summing up the combined strength of the Muslims, the scheduled castes, and elite castes and then by subtracting the remainder. This process suggests that the "backward" castes constitute a majority of the population in most districts of the state regardless of region. They do, however, decline to 30-40% of the population in six northern districts of the West Plain where the Muslim population is particularly high (Saharanpur, Muzaffarnagar, Bijnor, Rampur, Moradabad, and Bareilly). A similar phenomenon occurs in three districts of the Central Plain where the incidence of the scheduled caste population is higher than average (Sitapur, Hardoi, and Bara Banki).

On the basis of these data, it is reasonable to assume that after zamindari abolition upper-caste Hindu households drawn from the ranks of the ex-zamindars accounted for the greatest percentage of families with ownership rights to land in all regions, and that the largest landowners, those with holdings of 40 acres or more, were concentrated in this group. The majority of cultivators belonged to the peasant or "backward" castes." But while in the Central and Eastern Plains they were almost all subsistence farmers, in the western region a middle group emerged. Many of these cultivators, drawn mainly from the ranks of the former tenants of the zamindars, had sufficient resources to invest in improved methods once new technical opportunities for increasing production were introduced. Zamindari abolition, therefore, although it preserved the rank order of the ex-zamindars and the peasantry according to their relations prior to land reform, did open the way to economic competition between the upper-caste large ex-zamindars and the more substantial farmers among their former tenants who experienced an improvement in relative well-being.

3. Changing Electoral and Party Patterns

The linkages between economic change and electoral behaviour provide the focus of the correlation analysis carried out in later sections of this study. The time period examined extends over the three state elections of 1962, 1967, and 1969. It allows comparison of patterns of voting behaviour in the two earlier elections, when non-traditional practices in agriculture had a limited scope of application, with the results of the 1969 poll that occurred after modern technology was applied on a wide scale in the western half of the state.

It should be stressed at the outset that there are limitations to the electoral data. the most serious is the fact that results are available for only one post—"green revolution" poll. The substantive findings, therefore, must be treated as tentative in the absence of adequate time-series data, which can be provided only in future elections. At the same

time, the three polls, starting in a period of modest overall growth and ending at a point of dramatic acceleration in one part of the state, do offer an opportunity for a pilot study of the regional approach as a method for resolving some of the difficult problems of correlating electoral and economic variables in developing countries characterized by uneven rates of modernization.

Two general questions are asked of the data. Do patterns of voting in the western region depart from dominant trends reported for the rest of the state in 1969 and for the state as a whole in earlier periods? And are such changes, if present, consistent with the thesis of erosion in vertical patterns of peasant mobilization under conditions of accelerated technical innovation and commercialization of agriculture?

These questions are explored against the background of established political patterns in Uttar Pradesh as reported in field studies carried out by political scientists in the mid-1960's. According to the evidence collected by Brass and Burger, politics in rural Uttar Pradesh through the 1967 elections was the near monopoly of upper-caste landowning families, mainly the elite Brahmins and Thakurs, who assumed leadership roles in the major political parties.[25] Although the largest ex-zamindars and talukdars often turned their backs on the Congress Party, which had earned their enmity as the architect of zamindari abolition, petty and middle ex-zamindars did fill its local leadership ranks. At the district level, Brass found that the party was "the political instrument of the dominant peasant proprietors . . . led by coalitions of 'dominant castes.' "[26] Political mobilization occurred in a vertical pattern: leaders of the dominant landed families c o n s t r u c t e d multi-caste (class) political factions with support from families of low-status dependent groups. Characteristically, the faction was "a vertical structure of power . . . cross-cut (ting) caste and class divisions" to create "an organization based upon the ties between a leader and his followers, an economic patron and his dependents . . ."[28] The system produced a generally low level of loyalty to the Congress Party, considerable shifts in voter support from one election to the next, and no apparent connection between economic factors and electoral support.

The overall decline in popularity of the Congress Party in the state, evident as early as 1962, was associated with a conservative challenge from the Hindu communal Jana Sangh Party. The Jana Sangh, rejecting the

[25] Angela Sutherland Burger, *Opposition in a Dominant-Party System, A Study of the Jana Sangh, The Praja Socialist Party, and the Socialist Party in Uttar Pradesh* (Berkeley: University of California Press, 1969), pp. 54-55; Paul R. Brass, *Factional Politics in an Indian State, The Congress Party in Uttar Pradesh* (Berkeley: University of California Press, 1965), p. 229.
[27] Brass, *ibid.*, p. 229.
[28] *Ibid.*, p. 236.

secular and socialist ideology of the Congress, explicitly identified its legitimacy with the traditional ideals of Hindu culture, especially the religious teachings of the ancient Sanskrit tradition, and "the age-old scientific principles of social organization."[29] The party purposely recruited local notables of the elite Brahmin and Thakur castes, relying most heavily on the big ex-zamindars and talukdars for local leadership. According to Burger, the entry of the ex-rajas into politics activated "sentimental ties" among former tenants and employees, mainly of the "backward castes," and facilitated the formation of new factional alliances among a number of ex-talukdars who were able to aggregate their large personal followings.[30] The Jana Sangh, which based its electoral strategy on this manipulation of traditional ideals and patterns of social organization, succeeded in becoming the major opposition party in Uttar Pradesh by 1962. Its successes were mainly in rural constituencies, and the challenge to the Congress Party was carried to all parts of the state, although the areas of greatest Jana Sangh strength were concentrated in the central districts where the great landlords had dominated local life before zamindari abolition.

Direct appeals to the "backward castes" emphasizing economic interests and proportionate representation in local leadership roles began to be made by the Socialist Party in 1962 and by the successor SSP in 1967 and 1969. Their political organization was, however, regionally based in the most impoverished parts of the state, particularly in the eastern districts. While they did succeed in developing local strongholds, it was, paradoxically, the Congress Party that found greater support "in the poorer and more backward areas of the State" as its position in the northwestern districts declined.[31]

Nevertheless, in the 1967 elections the Congress Party failed to achieve a majority in the state legislative assembly for the first time since independence, falling short by 14 seats. The Congress ministry sworn in on March 14, 1967, rested on an unstable majority pieced together with the support of independents and defectors from minor parties. It lasted less than three weeks. On April 1, 18 Congressmen defected to form a new group, the Jan Congress, and joined hands with the opposition parties to construct a ruling coalition, the Samyukta Vidhayak Dal or SVD (United Legislators Party). Growing dissensions among the constituents of the SVD on questions of patronage as well as policy, quickly spurred a new series of defections that produced chronic instability. Finally, on February 17,

[29] Craig Baxter, *The Jana Sangh, A Biography of an Indian Political Party* (Philadelphia: University of Pennsylvania Press, 1969), p. 213.

[30] See Burger, *op. cit.*, Chapter V, "The Raja Returns: Pratapgarh South (Jana Sangh)," pp. 117-149.

[31] Paul R. Brass, "Uttar Pradesh," in Myron Weiner (ed)., *State Politics in India* (Princeton, N.J., Princeton University Press, 1968), p. 78.

1968, the Chief Minister, Charan Singh, submitted his resignation and advised dissolution of the assembly to prepare for a mid-term poll. President's Rule was subsequently imposed on the state, and arrangements went forward to conduct new elections within the year.[32]

The February 1969 mid-term elections in Uttar Pradesh were distinguished from previous polls in several ways. First, a new party emerged, the Bharaitya Kranti Dal or BKD (Indian Revolutionary Party), with the ability to field candidates in almost all the constituencies of the state. Second, the leader of the BKD, Charan Singh—the man who had precipitated the collapse of the Congress ministry in 1967 by leading his followers outside the Congress Party to form the Jan Congress and who then served as the Chief Minister of the successor SVD Government—was the first member of a non-elite caste to hold the highest political office in the state and head a major party. Although a Jat, the one peasant caste in Uttar Pradesh not officially listed as "backward," Charan Singh belonged to that part of the Jat leadership which preferred to think of themselves as the natural leaders of the small peasant farmers among the "backward classes."[33] His popularity as the long-time leader of the Congress organization in Meerut District was built on his reputation for championing the interests of peasant cultivators of diverse agricultural castes, including low-ranking Ahirs, Kurmis, and Gujars, and also the Muslim farming population. He was known for his active role in drafting the Zamindari Abolition Act, for his efforts as a cabinet minister in successive Governments dedicated to preventing the imposition of surcharge on land revenue, and for his support for a lower ceiling on individual ownership of land. At the time of the February 1969 elections, Charan Singh was reportedly regarded in western Uttar Pradesh as "a kisan (peasant) leader particularly by the growing class of rich peasants in this agriculturally most prosperous region of the state."[34]

The BKD as a political party was a new phenomenon in the politics of Uttar Pradesh for other reasons. Under Charan Singh's leadership, the party decided on a strategy of peasant mobilization that emphasized a direct appeal to the interests of the "backward classes" throughout the state in a generalized application of the tactics first tried out by the Socialists in the eastern region. Although the BKD, a party created by a nucleus of Congress defectors, did exploit opportunities for strengthening its organiza-

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[32] The events surrounding the collapse of the Congress ministry, the emergence of the SVD coalition, and the descent into political chaos that preceded the imposition of President's Rule are treated in detail in Subhash C. Kashyap, *The Politics of Defection, A Study of State Politics in India* (Delhi: National Publishing House, 1969), Chapter 4.

[33] The Jats as a group are generally represented as anxious to gain recognition as an "elite" caste of Rajput (Thakur) status.

[34] *Times of India*, February 4, 1969.

tion by attracting local notables with large personal followings, over 63% of the candidates it fielded throughout the state had no previous experience in electoral contests.[35] According to Charan Singh's estimates (which were accepted by journalists covering the campaign), out of 402 candidates on the BKD ticket more than 200 belonged to the backward communities, "scores" were Muslims, and nine belonged to the Jat caste.[36]

There were innovations in campaign style. The BKD relied less on mass public meetings to reach the voters than on house-to-house canvassing. Charan Singh raised his election fund of Rs. 15 lakhs in his own constituency of Chaprauli and managed to attract another Rs. 15 lakhs in Meerut District as a whole through solicitations that produced contributions mainly from farmers.[37]

Populist themes characterized the party's election appeals. In contrast to the Congress Party, which deliberately emphasized issues that cut across class lines in promising to restore stability to state politics as the condition for achieving progress for all, the BKD concentrated on winning support of the "backward classes" and scheduled castes by identifying Congress rule with corrupt government that served only the special interests of the "capitalists."[38]

The outcome of the elections produced surprise. The Congress Party, which managed an incremental gain of 1.5% of the popular vote statewide (from 32.2% in 1967 to 33.7% in 1969) succeeded in increasing its number of seats in the state legislative assembly by 12, falling two seats short of a majority. This time, however, it was able to attract the necessary support to form the new Government. The unexpected element was provided by the performance of the Jana Sangh relative to the BKD. The Jana Sangh, which had enjoyed the position of second largest party since 1962, slipped to third place. Its total vote declined from 21.7% in 1967 to 17.9% in 1969, and its strength in the legislative assembly was reduced from 98 to 49 seats. By contrast, the BKD, starting from scratch, emerged as the second largest party with 21.3% of the vote and 98 seats in the legislative assembly.

The phenomenon of the BKD vote in 1969 offers an interesting opportunity to tackle some of the methodological and substantive questions related to the study of linkages between economic change and electoral behaviour

[35] According to data compiled by Craig Baxter, of the 402 candidates fielded by the BKD, 146 or approximately 36%, had contested in previous elections. See Craig Baxter, "The Rise and Fall of the BKD in Uttar Pradesh," in Myron Weiner and John Osgood Field (eds.), *Electoral Politics in the Indian States*, Vol. IV: *Party Systems and Cleavages* (Delhi: Manohar Book Service, 1975).

[36] *Times of India*, January 30, 1969.

[37] *Times of India*, February 4, 1969.

[38] *Times of India*, January 31 and February 4, 1969.

raised earlier in this study. If rapid introduction of advanced modern practices in agriculture and their acceptance on a wide scale does in fact lead to an accelerated erosion of traditional forms of vertical peasant mobilization, then the electoral data analyzed across economic regions should show different patterns along two major dimensions: (1) participation and (2) distribution of party vote.

Assuming that political involvement increases as the proportion of market farmers exposed to modern technology expands[38]—largely because awareness swells to include perceptions of other opportunities for improving well-being through manipulation of secular institutions, including elections —we would expect to find absolutely higher rates of participation in the western districts of Uttar Pradesh than in the rest of the state during the period of the three elections, and a higher relative increase in participation between the 1967 and 1969 elections. Further, if the process of social mobilization is associated with loss of influence by the dominant castes, who rely on traditional ideals of social hierarchy to build vertical structures of support, evidence of erosion in the old commitments should be most strong in the highly developed western districts. Specifically, the attrition in Jana Sangh support should be more pronounced in the western parts of the state than in other areas. Conversely, new patterns of horizontal peasant mobilization should be strongest in the highest growth areas. In particular, the BKD, as the party led by the men most affected by the modern impact and experimenting with appeals to more egalitarian social commitments, should have disproportionate strength in the western districts and in the most highly developed sub-set of that area, the "green revolution" districts.

The remainder of this chapter addresses itself to the problem of constructing comparable units of analysis for correlation of economic and political data in order to test for the presence of these relationships. The focus on patterns of rural electoral change has resulted in a decision to exclude some areas of the state from the study. Of the 54 districts in Uttar Pradesh, 11 have been rejected as inappropriate: eight districts that fall within the mountain region and three which have atypically high concentrations of urban population (Agra, Lucknow, and Kanpur). In addition, all constituencies located in major towns of the 43 districts selected (15 out of a total of 361 in 1962, and 17 out of a total of 362 in 1967 and 1969) have been eliminated.

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[38] This thesis has found common acceptance in the literature on political development and social change. The most influential early statement of it is found in Karl W. Deutsch, "Social Mobilization and Political Development," *American Political Science Review*, September 1961 (Vol. 55, No. 3), pp. 493-514.

4. Relevant Units and Levels of Analysis: The District and Region

During the period with which this study is concerned and especially at the time of the earlier elections of 1962 and 1967, reliance on electoral data aggregated at the district level for construction of comparable political and economic units would have led to serious distortions. The major deficiency of this approach is its insensitivity to patterns of internal distribution. This limitation is apparent from an examination of two kinds of electoral criteria: (1) performance of small parties and (2) political cohesion within districts.

The problem of distribution is perhaps most readily illustrated by data on the performance of small parties. The popular strength of parties that contest only one or a few constituencies per district is distorted when their total vote is calculated on the basis of all-district averages. This distortion occurs because the relative share of votes polled is naturally much greater in the contested constituencies than in the cumulative district score, which includes constituencies where the party did not contest at all. The result is to flatten the distribution of the small party's vote and to make it appear as if it is evenly and thinly distributed. This tendency toward "flattening" is increased when district means are in turn averaged to estimate the party's statewide vote. Actually, the vote for small parties tends to be very unevenly distributed within districts and is much higher than the district mean in local strongholds. A more accurate indicator of the localized strength of the small party, therefore, is an average aggregated on the basis of constituency means. This point is dramatically illustrated by the data in Table III:6 below, which uses district-based means and, alternatively, constituency-based means to compute the average vote for small parties. Consider the example of the SSP. Using district-based means, the SSP's average vote in 1967 and 1969 is calculated as 9.6% and 9.0%, respectively; using constituency-based means for the same year, the SSP's average increases to 17.9% and 14.2%, indicating levels of support in its base areas not far behind those of larger parties. On the whole, therefore, correlation analysis of electoral and economic variables that presents the scores of small parties as district-based means is bound to misrepresent the strength of their localized popular support and is for this reason a more or less meaningless exercise. At the same time, the small parties contest in too few constituencies per district to allow useful comparison of their performance with that of larger parties through a consideration of average scores aggregated on the basis of votes won only in those constituencies in which all parties have contested. In most cases, therefore, when the district is the unit of observation, the small parties should be dropped out of a correlation matrix in order to ensure a meaningful comparison of electoral and economic data.

This particular problem, to be sure, does not arise in the case of major parties that contest almost all constituencies. For Congress, the Jana Sangh, and the BKD, there is little difference in party means computed on the basis of district-level or constituency data.

If one looks, however, at the standard deviation scores, another problem immediately becomes apparent. Even if political analysis is confined to the major parties, the use of district-based data still masks a very wide range of variation in the distribution of party votes. In the case of the Congress Party, the standard deviation using district-based means is a little more than one-fourth in 1967 and recedes to well under one-sixth in 1969. By contrast, the standard deviation using constituency-based means is over one-third in 1967 and remains at about 30% in 1969.

TABLE III: 6

Mean and Standard Deviation of Party Votes, 1962, 1967, and 1969, as Aggregated from District-Based and Constituency-Based Means

Party and Year	Average of District Means			Average of Constituency Means		
	No.	Mean %	S.D. %	No.	Mean %	S.D. %
Congress						
1962	43	35.1	6.7	360	36.1	10.2
1967	43	31.9	7.4	362	32.1	11.1
1969	43	34.6	5.7	361	33.3	10.1
Jana Sangh						
1962	43	16.1	8.9	316	19.0	13.9
1967	43	22.3	10.1	343	22.7	13.5
1969	43	18.0	9.5	340	19.9	13.3
PSP						
1962	43	12.3	9.4	238	17.2	13.4
1967	34	4.1	5.4	148	10.2	10.8
1969	30	2.0	2.7	82	7.6	10.8
SSP						
1967	42	9.6	9.3	215	17.9	13.5
1969	40	9.0	12.7	218	14.2	12.8
RPI						
1962	23	7.7	7.6	92	12.1	10.0
1967	35	5.7	4.6	140	9.6	8.2
1969	32	3.0	3.4	155	8.0	6.2
BKD						
1969	43	21.0	10.2	349	21.4	15.2
Independents						
1962	43	13.8	9.4	261	16.9	15.7
1967	43	18.2	10.4	321	20.4	16.0
1969	43	7.9	6.9	245	9.6	11.1

There are two possible inferences from this discrepancy between district-based and constituency-based data. It may be a general pattern in Uttar Pradesh that deviation is greater within districts than between them, in which event correlation analysis based on district electoral and economic data is of very limited utility. Alternatively, the variation may be caused by atypical patterns in a relatively few districts which may not preclude useful comparison.

The approach adopted in this study, as one way of dealing with the problem, is to devise minimal criteria of internal political cohesion and to apply them to the distribution of party votes within each district in order to arrange the districts according to high, medium, and low levels of cohesion. The standards adopted are the following. A district is characterized as having a high level of internal cohesion if 60% or more of the total vote is accounted for by parties contesting 70% of all constituencies and if the standard deviation for each party's vote is one-third or less. A district is considered to have a basic minimum level of cohesion, or medium cohesion, if 50% of the total vote is accounted for by parties contesting 70% of all constituencies and if the standard deviation for each party's vote is one-half or less. A district that does not meet all of the standards for medium cohesion is classified as a low cohesion district. The results of applying these criteria to each of the 43 districts in 1962, 1967, and 1969 are presented in Figure III:2 below.

An examination of this table indicates that over one-half of all districts in 1962 had low levels of political cohesion; the comparable percentage in 1967 was almost one-third. During the time of the earlier elections, therefore, it is doubtful that the district could be considered a meaningful unit for correlation of electoral and economic variables. The substantial decline in the number of districts with low scores by 1969, when less than one-fifth of the total were located in this category, however, suggests that the district may be becoming a more cohesive political unit.

FIGURE III: 2
The Political Cohesion of Districts in Uttar Pradesh
(1962, 1967, and 1969)

1962

Low (N=22)	Medium (N=14)	High (N=5)
Moradabad	Budaun	Rampur
Bareilly	Pilibhit	Sitapur
Unnao	Shahjahanpur	Hardoi
Rae Bareli	Kheri	Jaunpur
Pratapgarh	Sultanpur	Hamirpur
Faizabad	Gonda	
Bara Banki	Basti	
Bahraich	Azamgarh	
Gorakhpur	Mirzapur	

FIGURE 3: 2 (*continued*)

Deoria	Etawah	
Ballia	Farrukhabad	
Allahabad	Etah	
Fatehpur	Mathura	
Banda	Bulandshahr	
Jhansi		
Jalaun		
Mainpuri		
Aligarh		
Meerut		
Muzaffarnagar		
Saharanpur		
Ghasipur		
Mainpuri		
Aligarh		
Meerut		
Muzaffarnagar		
Saharanpur		
Ghazipur		

1967

Low (N=14)	Medium (N=20)	High (N=9)
Bijnor	Budaun	Rampur
Moradabad	Bareilly	Sitapur
Pilibhit	Shahjahanpur	Basti
Faizabad	Kheri	Varanasi
Gonda	Hardoi	Jaunpur
Gorakhpur	Unnao	Mirzapur
Deoria	Rae Bareli	Hamirpur
Ballia	Pratapgarh	Jalaun
Mathura	Sultanpur	Etah
Aligarh	Bara Banki	
Bulandshahr	Bahraich	
Meerut	Azamgarh	
Muzaffarnagar	Ghazipur	
Saharanpur	Allahabad	
	Fatehpur	
	Etawah	
	Farrukhabad	
	Banda	
	Jhansi	
	Mainpuri	

1969

Low (N=8)	Medium (N=21)	High (N=14)
Rampur	Moradabad	Bijnor
Rae Bareli	Budaun	Kheri
Gorakhpur	Bareilly	Sitapur
Deoria	Pilibhit	Pratapgarh
Ballia	Shahjahanpur	Sultanpur

FIGURE 3: 2 *continued*

Jalaun	Hardoi	Bahraich
Etah	Unnao	Varanasi
Aligarh	Faizabad	Etawah
	Bara Banki	Farukhabad
	Gonda	Hamirpur
	Basti	Jhansi
	Azamgarh	Mathura
	Ghazipur	Muzaffarnagar
	Jaunpur	Saharanpur
	Mirzapur	
	Allahabad	
	Fatehpur	
	Banda	
	Mainpuri	
	Bulandshahr	
	Meerut	

The data also suggest the possibility of working with clusters of districts—regions or sub-regions—as an appropriate level of electoral as well as economic analysis. If the changes in district cohesion are mapped as shown in Appendix III:1, it is clear that between 1962 and 1967 the increases in cohesion were concentrated in the districts of the Hills and Plateau region and in some districts of the Central and East Plain. By contrast, the districts of the West Plain and especially the north-western districts of the Ganges-Jumna Doab continued to show low levels of cohesion until 1969, when there was a dramatic shift in the opposite direction.

The existence of regional patterns in the distribution of party vote is also suggested by a preliminary examination of the concentration of strength of the major opposition parties. The Congress Party, with a mean vote stabilized at approximately one-third of the total, was the only party with more or less even strength throughout all 43 districts. The Jana Sangh, which emerged as the major opposition party contesting in almost all constituencies, enjoyed its heaviest and most reliable support in the Hills and Plateau region and in several districts of the East Plain and Central Plain. In 1967 the Jana Sangh expanded well into the West Plain but could not develop strong support inside the boundaries of the northwestern Ganges-Jumna Doab (see Appendix III:2). The second major opposition party, the SSP, had a much more localized base of popular support concentrated primarily in the Central Plain and in part of the East Plain. The ability of these two parties to organize the opposition to Congress in the Hills and Plateau region and in parts of the Central and East Plain may account for the higher levels of cohesion in these areas by 1967. In the West Plain, however, and especially in the Doab region, politics remained fragmented, accompanied by the very prominent role of independents in commanding

the second largest bloc of the popular vote. This situation was dramatically reversed in 1969, as also shown in Appendix III:2, when the BKD, although only moderately successful in other regions of the state, achieved a major breakthrough in coalescing the opposition to Congress for a challenge to its hegemony in the West Plain.

5. Correlations of Electoral and Economic Data

The utility of the regional approach for purposes of correlating electoral and economic information can be demonstrated by systematic disaggregation of voting data according to major geographic areas. This is perhaps most readily illustrated by data on participation. Mean values for participation, calculated as overall averages for all rural constituencies across the three elections of 1962, 1967, and 1969, suggest little variation over the eight-year period, as shown in Table III:7.

TABLE III: 7

Participation in Rural Constituencies: Uttar Pradesh
(1962, 1967, and 1969)

Year	Mean
	%
1962	52.4
1967	51.3
1969	52.6

By contrast, when participation is recalculated on the basis of constituency means aggregated at the regional level, a clear distinction emerges between the pattern in the West Plain and in the Central Plain and East Plain, as shown in Table III:8 below. In each election rates of participation in the West Plain are higher than the overall average for all constituencies; conversely, participation rates are lower than the average in the Central Plain and the East Plain. In the Central Plain, in fact, participation decreased between 1962 and 1967, recovering only slightly in 1969.[40] In the East Plain participation increased modestly between 1962 and 1967 but remained static in 1969. Only in the West Plain did participation increase between 1967 and 1969 to higher levels than any previously

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[40] The most likely explanation for the depressed rates of participation in the Central Plain is the concentration of the scheduled caste population in this region in above average numbers. Available data on participation in scheduled caste constituencies show that in both 1967 and 1969 it was well below the average for all rural constituencies and virtually static at 43.7% and 43.0% respectively.

TABLE III: 8
Participation by Region: Uttar Pradesh (1962, 1967, and 1969)

Year	Region		
	West Plain	Central Plain	East Plain
	%	%	%
1962	55.6	48.3	48.7
1967	55.3	45.8	50.2
1969	57.5	46.6	50.1

achieved. The point is that only by disaggregating the data at the regional level do variations in distribution emerge which can be used to test for relationships between electoral and environmental variables. In this case, the divergent patterns across economic regions is consistent with the thesis that participation expands as the proportion of market farmers engaged in modern agriculture increases, although the evidence is still too meager to establish the proposition of positive co-variation.

An examination of the distribution of the vote won by the major parties also reveals interesting variations of pattern at the regional level. The results of disaggregating party means by region are shown in Table III:9.

TABLE III: 9
**Distribution of the Vote for Congress, Jana Sangh, and BKD
in All Rural Constituencies and by Region: Uttar Pradesh
(1962, 1967, and 1969)**

	Congress			Jana Sangh			BKD
	1962	1967	1969	1962	1967	1969	1969
	%	%	%	%	%	%	%
All Rural Constituencies	36.1	32.1	33.3	19.0	22.7	19.9	21.4
West Plain	33.8	29.5	31.2	17.1	20.6	15.8	30.5
Central Plain	37.0	35.3	36.0	22.2	20.8	20.5	17.3
East Plain	37.5	32.8	34.5	17.8	24.5	20.7	17.1

The data show that in rural constituencies as a whole the Congress Party suffered a loss of 4% between 1962 and 1967, from 36.1% to 32.1%, and could make up only a small proportion of this amount in 1969, when it increased its poll to 33.3%. In all three elections, moreover, Congress showed comparatively greater strength in the least developed areas of the state, the East Plain and the Central Plain. The Jana Sangh, which increased its overall vote from 19% to 22.7% between 1962 and 1967, failed to consolidate its advance in 1969 and was pushed back to about 20% of

the total poll. Although the Sangh's support declined in all areas of the state, the loss of forward momentum was greatest in the West Plain, where it not only forfeited the gains made in 1967 but was pushed back to below 1962 levels of support. By contrast, the performance of the BKD was most impressive in the West Plain. It scored its highest popular vote in that area, exceeding its overall average for all rural constituencies by about nine percentage points to win more than 30% of the poll. In both the Central Plain and the East Plain, however, the BKD could not do better than about 17%. Once again, a closer examination of the distribution of the party vote reveals regional variations in the support for major parties that can be used to probe the hypothesis that rapid rates of technical innovation and commercialization of agriculture are associated with an erosion in the strength of vertically organized political alignments.

The relationship of electoral and economic variables can be examined more directly through the use of correlation analysis in which the district is the basic unit of observation. In order to facilitate more meaningful comparison of the West Plain with other areas of the state, the ten districts of the Central Plain and the ten districts of the East Plain have been combined to form a larger sample of 20 cases coinciding roughly with that area of the state in which new technology has had minimum impact.

The utility of correlation analysis for the earlier elections of 1962 and 1967 is limited by the large number of low-cohesion districts in both years. In 1962 the data as a whole show hardly any significant correlations between political and economic variables in any part of the state. At the same time, it is possible to discern the beginnings of a pattern affecting the Jana Sangh's prospects of future growth in the West Plain. In that region the Jana Sangh vote shows weak negative relationships to participation (−0.30) and to some indicators of agricultural modernization, including the percentage of irrigated wheat area (−0.48), the application of fertilizer (−0.30), and wheat output (−0.30). In 1967 these relationships gain greater strength. The correlation of the Jana Sangh vote with participation increases to −0.40. Correlations of the Jana Sangh vote and economic indicators (using 1968-1969 data) are: percentage of irrigated wheat area (−0.52), yield (−0.47), application of fertilizer (−0.48), and output (−0.54). In 1969, following the full impact of the "green revolution," these negative relationships are further strengthened. In addition, economic variables correlate more regularly with a wider range of electoral data in the West Plain in contrast to an absence of such relationships in the rest of the state. The data show consistent (and significant) relationships between electoral and economic variables only in the region of the West Plain. They also indicate an interesting contrast between the Jana Sangh and BKD. The votes for the two parties are inversely related, both with respect to each other and in their relationships to major indicators of

economic growth. The vote for the Jana Sangh shows a strong negative
correlation with that of the BKD in the West Plain (-0.86), compared to
a more modest negative correlation in the East and Central Plain (-0.37).
A partial explanation is suggested by consideration of the correlation
coefficients of each party's vote with participation and agricultural
modernization variables. The Jana Sangh's vote varies negatively with
participation (-0.61). By contrast, the vote for the BKD shows a strong
positive correlation with participation (0.76). The Jana Sangh vote also
displays a persistent negative correlation with economic indicators of
modernization, including percent of area under wheat (-0.52), percent of
irrigated wheat area (-0.57), yield (-0.49), fertilizer (-0.55), and output
(-0.59). The BKD is almost the mirror opposite of the Jana Sangh on all
of these dimensions, showing coefficients of 0.50, 0.53, 0.41, 0.58, and 0.56
respectively.

TABLE III: 10

**Correlation Coefficients of Selected Electoral and
Economic Variables by Region: Uttar Pradesh (1969)**

	Congress		Jana Sangh		BKD	
	West Plain	East & Central Plain	West Plain	East & Central Plain	West Plain	East & Central Plain
	(N=18)	(N=20)	(N=18)	(N=20)	(N=18)	(N=20)
Congress	1.00	1.00	0.26	0.66	-0.36	-0.35
Jana Sangh	0.26	0.66	1.00	1.00	-0.86	-0.37
BKD	-0.36	-0.35	-0.83	-0.37	1.00	1.00
Participation	-0.28	-0.11	-0.61	-0.31	0.76	0.17
Wheat area (%)	-0.32	0.40	-0.52	0.47	0.50	-0.23
Irrigated wheat area (%)	-0.54	0.19	-0.57	0.22	0.53	0.03
Yield, 1968-69	-0.38	-0.07	-0.49	0.01	0.41	0.12
Fertilizer, 1968-69	-0.39	-0.22	-0.55	0.03	0.58	0.03
Output, 1968-69	-0.44	0.33	-0.59	0.41	0.56	-0.17

Similarly, the relationship between the vote for the Congress Party
and the BKD is inversely related. The Congress vote is also negatively
associated with the participation and development variables, although the
strength of these relationships are more modest, on the whole, than those
found in the case of the Jana Sangh. Nevertheless, the data for the "green
revolution" districts, as shown in Table III:11 below, reveal somewhat
stronger negative relationships between the Congress vote and the variables

of participation and development than does the vote of the Jana Sangh,[41] although the small number of cases makes any generalizations hazardous.

TABLE III: 11

Correlation Coefficients of Selected Economic and Electoral Variables in Ten "Green Revolution" Districts: Uttar Pradesh (1969)

	Congress	Jana Sangh	BKD
Congress	1.00	0.50	−0.54
Jana Sangh	0.50	1.00	−0.90
BKD	−0.54	−0.90	1.00
Participation	−0.65	−0.94	0.97
Wheat area (%)	−0.52	−0.53	0.60
Irrigated wheat area (%)	−0.81	−0.65	0.68
Yield, 1968-1969	−0.79	−0.62	0.61
Fertilizer, 1968-1969	−0.69	−0.53	0.68
Output, 1968-1969	−0.76	−0.62	0.67

The advantage of the region over the state as the appropriate level of analysis in correlating electoral and economic variables under circumstances of uneven development characteristic of India (and many late-modernizing countries) should by now be apparent. It sharpens those relationships which do exist in some regional sub-divisions but which would otherwise be weakened or submerged in the absence of such relationships elsewhere in correlation analysis carried out at the state or national level. In this case, there is the additional benefit that the data, once disaggregated, offer support for the substantive hypothesis that rapid agricultural modernization is associated with accelerated erosion of vertical patterns of peasant mobilization. Indeed, the data further show that in the West Plain (but not in other areas of the state) the Jana Sangh and the BKD drew on different—and contrasting—socio-economic strata for popular support. The Jana Sangh vote is positively associated with the number of very small farms under five acres (0.60) and negatively related to the number of large farms of ten acres or more (−0.65). Conversely, the vote for the BKD is negatively associated with small farms (−0.53) and positively with larger farms (0.57). This is consistent with research findings on adoption patterns of the new technology, which show that very small landholders do not have the resources to participate fully in modern agriculture. As a result, they remain locked in economic dependence on the leaders of the dominant landed communities

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[41] The result is consistent with common sense expectation, however, to the extent that the Congress Party, and not the Jana Sangh, dominated organized politics in the Doab area prior to the "green revolution". Although officially committed to an ideology of secularism, socialism, and democracy, the Congress nevertheless built its party organization on vertical structures of support.

and are more easily mobilized through vertical power structures.

More difficult to interpret is the modest positive correlation of the BKD vote with the percentage of the Muslim population in the West Plain (0.40). Since the Muslim population is more heavily concentrated in less developed districts of the region, this association is open to the interpretation that communal factors are involved. Specifically, the Muslim community, disenchanted with the performance of the Congress Party in protecting their opportunities for advancement in a Hindu-majority state,[42] may have turned to the BKD as an anti-Congress party that would provide more effective safeguards for communal interests. Alternatively, Muslim support for the BKD may indicate the party's success in its class-based appeal to the more substantial landholders in the community. On this point, only interview data are likely to be enlightening. Finally, the fact that the BKD was not notably more successful than the other major parties in winning the votes of the scheduled castes may offer indirect evidence in favour of the hypothesis linking rapid agricultural modernization and erosion of vertical patterns of peasant mobilization. The scheduled castes, being landless, remain dependent on larger landowners for work. They are also generally outside the modernization process and more attuned to traditional notions of social and political legitimacy.

In any event, it does appear likely that the unexpected success of the BKD in the 1969 elections was symptomatic of deeper currents of change which have established economic interest as a legitimate organizing principle of peasant participation. This interpretation is strengthened by more rigorous examination of the contribution of the various socio-economic factors to the levels of the vote for the Jana Sangh and the BKD, using the technique of multiple regression. Three independent variables have been selected: agricultural modernization, size of landholding, and the percentage of the Muslim population. All variables in the regression equation, including the voting distributions, have been standardized to ensure comparable measures of the importance of each variable to the distribution of the vote. Further, in order to create a summary variable of agricultural modernization, one that controls for the interaction of the five indicators of economic growth examined separately in the earlier correlation analysis, a factor matrix using a single principal component has been constructed. This single factor accounts for 79.2% of the variation among the five variables. It is shown in Table III:12 below (on p. 180). A summary factor score of agricultural modernization (the product of the Factor score coefficients of each of the variables constituting Factor 1) has been used to scale the 18 districts of the West Plain along this dimension.

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[42] Muslim disillusionment with the Congress Party was reported by political observers as early as 1962.

TABLE III: 12

Summary Variable of Agricultural Modernization

Component Variables	Factor I
Wheat Area, 1968-1969	0.88983
Irrigated Wheat Area, 1968-1969	0.96682
Yield per Hectare, 1968-1969	0.70114
Fertilizer Use per Hectare, 1968-1969	0.87248
Output, 1968-1969	0.98956

Standardized regression coefficients (b*) for the prediction of the BKD and Jana Sangh vote, based on the combined effects of the socio-economic indicators, are shown in Table III: 13. Although the equations are based on only eighteen cases and should be treated with caution, they are significant at the .01 level.

TABLE III: 13

Standardized Regression Coefficients (b*) for the Jana Sangh and BKD: Votes and Socio-Economic Variables

	Factor I (Agricultural Modernization)	Farm Size	Muslims	Multiple R	R^2
Jana Sangh	−0.51	0.40a	−0.18	0.77	0.60
BKD	0.51	0.31b	0.41	0.81	0.65

a Farms less than five acres

b Farms over ten acres

$F_{(3,14)}=8.75$

The regression analysis differentiates more clearly than does the bivariate correlation analysis the relative importance of each of the major socio-economic variables to the Jana Sangh and BKD vote. The most important variable influencing the BKD vote emerges as agricultural modernization (R^2 change=0.35), followed by the Muslim vote (R^2 change=0.22) and the number of farms above 10 acres (R^2 change=0.08). These variables are associated with the Jana Sangh vote in a somewhat different order and degree. The negative association of agricultural modernization with the Jana Sangh vote accounts for the greatest variance (R^2 change=0.38). The pattern of landownership, however, is assigned second place in importance. The number of farms under five acres accounts for an R^2 change of 0.18. The opposition of Muslim voters is relatively unimportant, representing an R^2 change of 0.03.

6. Conclusions

On the whole, the data on the 1969 elections suggest that Uttar Pradesh is passing through a political transition period. Although traditional ascriptive and communal values persist in political importance, in the more highly developed region of the West Plain economic variables are showing the first signs of influencing electoral outcomes. The new emphasis on economic interest as a legitimate principle of political organization, moreover, calls into question the long-term viability of vertical patterns of mobilization. It indicates that the change in patterns of peasant participation towards new forms of class-oriented alignments may become a permanent feature of the political landscape in the state.

Beyond the specific problem of explaining peasant voting behaviour in Uttar Pradesh, the regional approach appears to offer a promising methodological tool for investigating the emergence of new relationships between economic and electoral variables under conditions of uneven development. There are, however, some constraints. One obvious limitation is that the regional approach cannot fruitfully be applied to small states so long as the district is the primary unit of observation—for lack of an adequate number of cases per region to permit meaningful statistical analysis. There are other complications. As the impact of modern technology spreads, the "natural" boundaries of economic regions will have to be redefined. More important in the short run, the relevant political variables may not always be clear. As new groups are mobilized and begin to make demands on the political system, major parties will seek to project a responsive image. This has already occurred in Uttar Pradesh, where the Congress Party, following the national split of 1969, has sought to identify itself with the needs of the common man by more aggressive implementation of long-standing promises of social reform. One result has been a substantial number of defections from the BKD to the Congress.

Ultimately, political factors may prove so volatile that the utility of quantitative analysis, however sophisticated, is seriously impaired in penetrating the relationship of electoral, social, and economic variables in newly developing countries in general and in India in particular. Even so, there appears to be some evidence that cohesion and clustering may be increasing and that future efforts using a regional approach may hold some chance of success.

The Political Cohesion of Districts: Uttar Pradesh (1962-1969)

This appendix contains state maps indicating (1) the political cohesion of districts in Uttar Pradesh in the state assembly elections of 1962, 1967, and 1969 and (2) the changes in cohesion which occurred between 1962 and 1967 and between 1967 and 1969.

A district is characterized as having a *high* level of internal cohesion if 60% or more of the total vote is accounted for by parties contesting 70% of all constituencies and if the standard deviation for each party's vote is one-third or less. A district is considered to have *medium* cohesion if 50% of the total vote is accounted for by parties contesting 70% of all constituencies and if the standard deviation for each party's vote is one-half or less. A district that does not meet the standards for medium cohesion is classified as a *low* cohesion district. The first three maps represent district political cohesion at the time of each election, in 1962, 1967 and 1969 respectively. The final two maps represent patterns of change in district political cohesion between 1962-1967 and 1967-1969.

Appendix III : 1
COHESION : 1962

UTTAR PRADESH

MILES 60 40 20 0 20 40
80 60 40 20 0 20 40 60 KILOMETRES

High
Medium
Low

Boundaries
District ————
Tehsil --------

Appendix III : 1
COHESION : 1967

UTTAR PRADESH

High
Medium
Low

Boundaries
District
Tahsil

Appendix III : 1
COHESION : 1969

UTTAR PRADESH

MILES 80 60 40 20 0 20 40

80 60 40 20 0 20 40 60 80 KILOMETRES

▨	High
☐	Medium
⊞	Low

Boundaries

District ————

Tehsil - - - - -

Appendix III : 1
COHESION : 1962-1967

UTTAR PRADESH

MILES 80 40 20 0 20 40
KM 80 60 40 20 0 20 40 60 80 KILOMETRES

Increase
No Change
Decrease

Boundaries
District ————
Tahsil ----------

Appendix III : 1

COHESION : 1967-1969

UTTAR PRADESH

MILES 60 40 20 0 20 40
80 60 40 20 0 20 40 60 80 KILOMETRES

☐ Decrease

☐ No Change

▨ Increase

Boundaries

District ——————

Tahsil ∼∼∼∼∼∼∼

The Distribution of Party Strength: Uttar Pradesh (1967 and 1969)

This appendix contains maps showing the magnitude of electoral support received by the Jana Sangh and SSP in 1967 and by the BKD, Jana Sangh, and SSP in 1969. Blank areas on these maps represent constituencies where the party indicated either did not contest or where it secured less than 30% of the vote.

Appendix III : 2
JANA SANGH, 1967

UTTAR PRADESH

MILES 80 40 20   0   20   40
80 60 40 20 0 20 40 60 80 KILOMETRES

Share of the Vote

▨ 30% - 39%

▦ 40% - 49%

■ 50% and above

Boundaries
District ————
Tehsil ----------

Appendix III 2

SSP, 1967

UTTAR PRADESH

MILES 60 40 20 0   20   40

80 70 60 50 40 30 40 60 KILOMETRES

Share of the Vote

▨ 30% - 39%

▩ 40% - 49%

☐ 50% and above

Boundaries

District ——————

Tahsil ················

Appendix III : 2

BKD, 1969

UTTAR PRADESH

MILES 80 40 20 0 20 40

80 60 40 20 0 20 40 60 80 KILOMETRES

Share of the Vote

30% 39%

40% 49%

50% and above

Boundaries

District ——————

Tahsil ⌁⌁⌁⌁⌁⌁

Appendix III : 2

JANA SANGH 1969

UTTAR PRADESH

MILES 60 40 20 0 20 40

60 40 40 20 0 20 40 60 KILOMETRES

Share of the Vote

30% - 39%

40% - 49%

50% and above

Boundaries

District ————

Tahsil ----------

Appendix III : 2

SSP, 1969

UTTAR PRADESH

MILES 40 20 0 20 40

80 60 40 20 0 20 40 60 80 KILOMETRES

Share of the Vote

▨ 30% - 39%

▨ 40% - 49%

▤ 50% and above

Boundaries

District

Tahsil