

Social and Spatial Characteristics of Voter Turnout in Guatemala: The 1985 Elections

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ABSTRACT

This paper identifies the correlates of voter turnout rates in the ethnically complex country of Guatemala. It uses maps and regression analysis to comprehend varying turnout rates across the 330 municipalities of Guatemala. A central finding is that turnout is a function of the percentage of the municipal population that is urban and the percentage of voters who are male and literate. An unexpected finding is that turnout covaries with the share of the population that is indigenous and is inversely related to the size of the municipality. Finally, the paper suggests that high rates of political violence may not dampen turnout, but instead have complex effects on political participation.

INTRODUCTION

Understanding why citizens become voters is an issue at the core of political analysis. Political sociologists approach this problem by ascertaining whether turnout is associated with social class, levels of education and/or ethnicity. Geographers attempt to determine whether location or place characteristics are associated with turnout. Employing the insights of micro-economics, many political scientists focus on how the constraints faced by citizens shape the decision to vote.

Despite its obvious importance for democratic government, turnout remains something of a mystery. While social status seems to be positively related to turnout in most countries, its overall importance remains ambiguous when taken in comparative perspective. Just to take one example, turnout is significantly higher in Costa Rica, a country with a GDP per capita of approximately \$2,000 in the early 1990s, than either in Switzerland or the United States--countries with GDP rates about ten times as high. Rational choice theories also have not been entirely successful in resolving the paradox of turnout, that is, why individuals should bother to vote if their ability to affect the outcome of elections is quite small (Green and Shapiro, 1994). By focusing on the physical and man made constraints of space, geographic explanations may only account for a share, though an important one, of voter turnout rates (Agnew, 1996).

This paper begins with these theoretical remarks to structure our discussion of voter turnout rates in a multiethnic, stratified society. As with so many topics in the social sciences, the study of turnout in developing countries is in its infancy. Experience with non-fraudulent elections may be so new that this issue may not have merited analysis in the past. The absence of reliable data may also deter researchers from tackling such issues in the developing world. While such limits pose obstacles to theoretically-informed and methodologically-sound research, they are not insurmountable. That, at least, is one of the implications of the present study.

We focus on Guatemala because it presents an economic and cultural diversity that makes a spatial analysis of turnout in a new democracy particularly relevant. Approximately half of the population speaks one of the two dozen Maya languages found in Guatemala. According to the United Nations [end p. 133] Development Programme (1993), the 1990 GNP per capita is \$910 and 61 percent of the 1991 population is rural. The UN report estimates that between the years 1977 and 1989 an average of 77 percent of the total population lives in absolute poverty. And, since the mid-1980s, Guatemalan politics has been liberalizing. Though violations of human rights have not ceased and the military wields a disproportionate amount of power for the Guatemalan system to be labeled a democracy, electoral competition is at least now responsible for selecting executives, legislators and municipal councils.

In this paper, we seek to identify some of the factors that are associated with voter turnout in the 1985 elections—widely believed to be the most honest and competitive since the election of Jacobo Arbenz Guzmán to the presidency in 1951. They are also the first for choosing national and local level officials after the 1984 Constituent Assembly produced a new constitution for the republic. As we will explain in greater detail below, the Guatemalan case lends itself particularly well to ecological analysis since its multiethnic and economic heterogeneity is likely to be expressed spatially (Agnew, 1996). Furthermore, the difficulty of conducting a truly national survey of citizen attitudes makes a theoretically-informed search for the correlates of Guatemala's 330 municipalities especially useful.

Our analysis begins by furnishing some background information on Guatemala. It then sketches some of our theoretical concerns about voter turnout rates. The next section presents some methodological reflections and the results of our data analysis, which incorporates a standard set of economic and social variables along with a discussion of the impact on electoral participation of the politically-inspired violence that wracked the country in the late 1970s and early 1980s. The final section summarizes our findings and identifies their implications.

POLITICAL CONDITIONS AND VOTER TURNOUT: FACTS AND EXISTING FINDINGS

Unfortunately for its citizens, Guatemala conforms to popular stereotypes of politics in Latin America. Since independence, long-lasting personalist dictatorships and military regimes have ruled the country. In the aftermath of a brief period of democratic and social reform between 1944-54 (Gleijeses, 1991), military governments have battled leftist guerrillas in what remains one of Latin America's oldest insurgencies. As a result of this conflict, Guatemala also has the dubious honor of having one of the worst human rights records in the hemisphere; since 1963, approximately 100,000 Guatemalans have been murdered or disappeared (Perera, 1993).

While the brutality of Guatemalan politics should not be ignored, it is important to recognize that its political system appears to be changing. In the early 1980s, the military government led by General Oscar Humberto Mejía Víctores (1983-86) negotiated a retreat from power with leading civilian politicians (Fauriol and Loser, 1988; Handy, 1988; Trudeau, 1993). After convening elections for a Constituent Assembly in 1984, general elections were held and won by none other than the Christian Democratic Party, whose leaders had been targeted for extermination by the military in the late 1970s. Since the promulgation of a new constitution in 1985, three civilian governments have been elected and, despite several attempted coups, have not been replaced by military dictatorships.

Even as electoral politics appears to be taking root in the country, authoritarian practices continue to pervade Guatemalan political life. No observer of Guatemala can ignore that the military remains above the law and continues to exercise a great deal of influence in the countryside. This also suggests that basic civil rights may go unprotected in large part because of the absence of an efficacious judicial system. There are also good reasons to believe that a presidential form of government magnifies, if not creates, conflicts between the executive and legislative branches of government (Lehoucq and Wall, 1995). Indeed, Jorge Serrano Elias' failed attempt to become his country's Alberto Fujimori by closing Congress followed a period of intense conflict between both branches of government (Jonas, 1995; Poitevin, 1993; Thesing, 1993). Once Ramiro de León Carpio, the Human Rights Ombudsman, was selected president by Congress to complete Serrano Elias' term, the executive and legislature were again embroiled in a struggle that was only settled by a January 1994 referendum calling for constitutional reforms and the convocation of congressional elections for later that year. **[end p. 134]**

Endorsed by the voters, the January 1994 constitutional reforms substitute a four-year for a five-year term in office for presidents and congressmen. Unless a presidential candidate obtains an absolute majority of the valid vote, a runoff election is held among the two candidates garnering the most votes. Deputies remain elected in multi-member districts, most of which correspond to the boundaries of the country's 22 departments as well as the separate district of Guatemala City. They continue to be allowed to run for reelection and continue to serve concurrent terms with the president. The exact number of such deputies varies according to population size. Not all deputies are elected in such districts. A certain number of deputies are elected in a national district along with the president and vice-president; their seats are allocated according to the ballots cast in the first round of

presidential elections. Both district- and national-level deputies are chosen according to the closed-list, D'Hondt version of proportional representation.

Low voter turnout rates are one of the principal shortcomings lamented by observers of Guatemalan politics. Since 1985, levels of political participation appear to be in a secular decline. While nearly 60 percent of registered voters cast ballots in 1985, only slightly more than 50 percent did so in 1990. Newspaper estimates suggest that turnout might have been as low as 48 percent of registered voters in the 1995 elections. The widely-held belief that high abstention rates are caused by the bankruptcy of the political system lends a sense of urgency to diagnosing this problem.

Identifying the causes of low voter turnout rates in Guatemala is difficult not only because of the absence of a scientific consensus about this phenomenon in this or any other country. Understanding the phenomenon is also hampered by the absence of reliable figures on turnout as a percentage of the voting age population. In a review of the election results of 1985, the Washington Office on Latin America (WOLA 1985), for example, estimates that 55.8 percent of eligible voters did not participate in this election--an extremely low number, WOLA contends, because voting is mandatory. According to the constitution, all citizens above the age of 18 are entitled to vote; casting ballots, however, is only compulsory for literate voters. Given the high levels of political violence (deaths and refugees), however, it is difficult to estimate the number of eligible voters in many areas, a point noted by Gálvez Borrell (1991).

In one of the most extensive empirical studies of Guatemalan elections, Gálvez Borrell provides two estimates of the voter abstention rates for the 1985 elections. One is what he calls the rate of relative abstention, that is, the difference between the number of registered voters and valid votes cast. Using official returns from Guatemala's 22 departments, Gálvez Borrell estimates that the relative abstention rate was 39.82 percent. Based upon official results of the 328 municipalities, our own calculations indicate that the relative abstention rate was 40.7 percent. His second measure consists of what he calls a deliberate abstention rate, which is the percentage of total valid votes that are blank and nullified ballots. For the 22 departments his figure of the deliberate abstention rate is 12 percent. Using the same formula, but using official legislative results from the 328 municipalities, we obtain a deliberate abstention rate of 16.9 percent.

The first of several comments about Gálvez Borrell's findings is that what he labels the relative abstention rate is simply the inverse of our voter turnout rate. It is important to recognize that his discussion, like the vast majority of Spanish language efforts on this topic, focuses on the portion of the proverbial glass that is empty. Following the lead of our colleagues in North America, we concentrate upon explaining why citizens turnout to vote, not why they are passive on election day.

Second, the deliberate abstention rate may very well be an indicator of the degree to which voters reject the political options available on the ballot. Alternatively, the voter may have believed that this particular election was so flawed that she did not want to support any of the available political parties or candidates, but did want to show support for nascent democratic institutions. Finally, the voter's decision to cast a blank ballot or one in such a way that it was subsequently annulled might indicate that he was uninformed or confused on election day. Since it is difficult to assess these rival interpretations in the absence of exit polls, we do not examine this issue. Instead, we focus on explaining municipal variations in turnout as a percentage of registered voters in the 1985 elections. [end p. 135]

THEORETICAL SPECULATIONS

At least three sorts of explanations exist for a phenomenon like turnout. Sociologists emphasize the importance of certain types of characteristics held by voters. They argue that the more urban, male and educated individuals are, the more likely they are to participate in politics. According to this approach, such voters have the material and cognitive resources to exercise their political and civil rights. Such a perspective is an extrapolation of modernization theory because it contends that "modern" societies produce individuals more likely to assert themselves in politics than persons of traditional societies. Its key implication, for our purposes, is that turnout

decreases as the numbers of poor, rural and indigenous voters increase.

As Rosenstone and Hansen (1993) argue in their study of political participation in the U.S., such factors at most identify which groups of voters are more *predisposed* to vote. As we mentioned in the introduction, the fact that turnout is significantly higher in underdeveloped Costa Rica than in the developed U.S. indicates that the ordering and nature of causes privileged by this theory need to be rethought. It therefore may be incorrect to assume that individuals only become voters because of the social characteristics they possess before deciding to enter the political arena. They may also acquire resources in the political arena that makes them decide to participate in politics.

A second approach to this problem also focuses on individuals, but in a rather different sort of way. Instead of visualizing individuals as bearers of social characteristics, it underscores the importance of the costs and benefits faced by individuals when confronting the choice of voting or not voting. By framing the issue in this way, it suggests that voting may be irrational: each citizen will prefer to "free-ride" and thus abstain from voting given that the low probability that her vote will decisively influence an electoral outcome. Two of the most popular efforts to solve what has become known as the "paradox of voting" includes the calculus of voting and the mini regret model. Both assume the choice facing voters can be modeled as a decision-theoretic problem: citizens are in an environment that can only be characterized as favorable or unfavorable to their interests.

While such a focus rightfully returns the rational individual back into studies of turnout, it simplifies the world of the voter at the cost of neglecting a multitude of factors that may very well have an impact on her calculations (Aldrich, 1993; Rosenstone and Hansen, 1993). It does not mention how his expectations of the behavior of his peers or explicitly political organizations may influence his behavior. It thus disregards the impact of strategic considerations and how collective actors transform citizens into voters.

The third perspective therefore incorporates such considerations into its models. As championed by Rosenstone and Hansen (1993), it argues that individual-level factors are not the only ones responsible for encouraging citizens to vote. It suggests that the focus of attention should be on the behavior of collective actors-parties, interest groups and civic organizations, for example. Transforming citizens into voters may also be a function of the strategic considerations of politicians and not solely a function of dilemmas facing individuals.

Though our study of turnout does not attempt to evaluate these approaches in a systematic fashion, it hopefully will shed some light on their relative merits. More importantly, it will prevent us from becoming mindless empiricists: awareness of divergent theories forces us to devise measures for key concepts and allows us to interpret the meaning of statistical relationships. In the analysis that follows, we will generally collapse the second and third approaches to identify the advantages of more sociological or more political accounts of turnout.

It is important to emphasize that we have stacked the deck, so to speak, against political perspectives, especially those that argue that political institutions affect the decisions of political agents. Several comparative studies (Jackman, 1987; Powell, 1986), for example, demonstrate that regimes with multiparty systems, with automatic registration laws and related factors experience significantly higher rates of electoral participation than regimes without said features. Though a multiparty system appears to exist in Guatemala, none of these other factors does. Citizens must, just like in Switzerland and the U.S., register to vote and casting ballots is only obligatory for literate citizens.

By comparative standards, turnout rates are thus going to be low in Guatemala. What is less clear, **[end p. 136]** however, is how social and spatial factors influence turnout across the 330 municipalities that comprise the ethnically diverse and socially complex country that is Guatemala. Nor is the legacy of state-sponsored repression apparent on levels of political activity. By using a subnational research design, we will thus trade an approach that rigorously evaluates the impact of many institutional features for one that permits identifying the sources of regional patterns that are often hidden in cross-national studies of electoral behavior (Agnew, 1996).

SOME METHODOLOGICAL CONSIDERATIONS

One way to assess the usefulness of these approaches is by surveying voters. This is the methodological strategy pursued by many students of turnout and other forms of political participation. Mitchell A. Seligson (1995) and associates rely exclusively on surveys in the only systematic effort to make sense of turnout in Central America.

An obstacle in the way of obtaining such data is cost. Large numbers of citizens may view survey questionnaires with suspicion and even alarm; reliable and valid surveys may very well require repeated contact with respondents. This is particularly the case in a country like Guatemala where citizens are unaccustomed to scientific survey research. Designing a survey that is genuinely representative of the country at large is another problem with such efforts. Seligson and associates (1995), for example, inform their readers that their sample is urban in nature.

Yet another problem is that surveys have a tendency to over-report levels of turnout. In a study of advanced industrial countries, Powell (1986) points out that respondents tend to reply positively when asked if they vote. Surveys typically report that turnout is approximately ten percent above actual rates in many first world countries. In their own study of turnout in Central America, Seligson (1995: 159) and co-authors report that 74 percent of eligible voters turned out to vote in 1990 in Guatemala--a level, if true, making its citizenry as politically active as those of France, Japan and the United Kingdom. They candidly admit, however, their data on Guatemala must be handled with care. As a share of what they call the voting-age population, turnout is 41 percent for the country and 40 percent for Guatemala City. Aside from the confusion caused by these figures, it is clear that a great deal of over-reporting is present in their survey.

Until the methodology of survey research in Guatemala is honed, an alternative methodology for examining turnout is ecological research. It is a technique long familiar to social scientists who study electoral behavior in developed countries, but little used in lesser developed countries. For understudied places like Guatemala, this methodology promises to assess the impact of a multitude of spatial and socioeconomic factors on electoral behavior. Until survey instruments are designed to incorporate the views of all Guatemalans, ecological analysis remains the only way to determine whether--and why--rural areas behave any differently than urban areas.

Of course, the principal shortcoming of such techniques is the possibility of committing the dreaded ecological fallacy. While the ultimate aim of electoral geography may be to infer the behavior of voters from cross-sectional analysis, great care must be taken to ensure that such interpretations are at least plausible. This is why we choose not to use aggregate results of Guatemala's 22 departments and instead to rely upon results of the country's 325 municipalities. We believe that ecological analysis of such a universe will avoid so many of the statistical problems associated with cross-sectional analysis (Achen and Shively, 1995).

Finally, a few words about the sources of our data and our statistical methods. Official electoral returns, numbers of registered and literate voters stem from the Supreme Electoral Tribunal (TSE, *Tribunal Supremo Electoral*). We also rely upon the National Institute for Statistics (INE, *Instituto Nacional de Estadística*) for the 1981 Census returns. All of these data had to be hand-entered into machine readable form. In cross checking the data, some errors were found in the published data and corrections were made. We used our judgement to compensate for the fact that column and row totals did not produce the same sum as what was published. All data exist as dBASE III files (dBASE for Windows V5.0). This program is selected because of the wide range of other computer programs able to read/import dBASE files. This includes the other programs used in this analysis: Quattro-Pro for Windows V5.0, SPSS for Windows V6.1, and Maptitude V3.0 (Caliper **[end p. 137]** Corporation). We utilize Quattro-Pro in cross checking the data and for some of the descriptive statistics. We use SPSS to generate all regression and correlation analysis and Maptitude to produce all of the maps.

EMPIRICAL FINDINGS

Before turning to a discussion of our model, let us characterize the nature of the dependent variable. Average turnout for the first presidential balloting in 325 municipalities was 59.1 percent of registered voters. The median was 59.6 percent. The standard deviation was 8.8 percent, indicating a relatively high level of homogeneity.

Turnout ranged from a high of 91.1 percent of the 1,725 registered voters in the Municipality of Santo Tomás La Unión, Department of Suchitepéquez, to a low of 30.5 percent of the 2,139 registered voters in the Municipality of San Bartolomé Jocotenango, in the Department of Quiché. 70.3 percent of registered voters cast ballots in Guatemala City, the largest municipality in the country with 20 percent (550,849) of all registered voters. What are the factors responsible for varying turnout rates?

The Successful Components of the Model

Table 1 contains the results of the ordinary least-squares regression model. The single most important variable of the regression equation is the percent of registered voters who are illiterate, which has a Beta value of -0.45. This is a finding consistent with a sociological approach to turnout.

TABLE 1. REGRESSION RESULTS FOR VOTER TURNOUT, 1985 FIRST PRESIDENTIAL BALLOT

	Beta	b	t*
Intercept		78.4391	25.012
Illiterates (as a percentage of registered voters)	-0.4535	-0.2137	-6.537
Females (as a percentage of registered voters)	-0.2867	-0.2355	-5.618
Per capita Municipal spending, 1986	0.1362	0.0915	2.440
Percent indigenous population	0.2366	0.0543	3.626
Percent rural population	-0.2320	-0.0867	-3.870
Size of municipality (in square miles)	-0.1468	-0.0043	-3.184
Percent votes for DCG (Christian Democratic Candidate)	0.0877	0.0631	1.919

*All t statistics are significant at the 0.01 level or greater, except for per capita municipal spending, which is significant at 0.0152 and percent votes for DCG at .0559.

Note: The Multiple R is 0.6138, the R-Square is 0.377, and the adjusted R-Square is 0.36.

With a Beta value -0.29, the next variable in our model is the percentage of registered voters who are female. This finding also is consistent with a sociological interpretation of turnout. In most societies, women are generally considered to be second-class citizens. Any number of subtle and not so subtle social and cultural pressures could account for lower voting rates for women. Indeed, a sociological account of turnout suggests that large percentages of women should have not even registered to vote. Perhaps many Guatemalan women may have found it relatively easy to register, if the male members of their family were not aware of this action. This could have occurred on any number of occasions when they had reason to go to the municipal building. However, on election day it may be much more difficult for them to travel to the polls without informing the male members of their families.

As a surrogate measure for economic development, we employ data on per capita spending by municipality in 1986 to determine whether, as sociological perspectives contend, the relationship between income and voting is positive. Since we do not have access to income data, we rely upon this variable on the assumption that municipalities with higher levels of per capita spending are also those with higher incomes. While this variable may be confounded with the effects of political influence and corruption with those of economic development by measuring the share of politically-motivated expenditures going to municipalities, we nevertheless believe that this variable does have some validity. We use data for 1986 because it was the year closest to 1985 for which such data are available. The positive direction of the Beta coefficient is 0.14 is as expected: in those municipalities with higher levels of spending there is the [end p. 138] tendency for higher turnout rates. This finding also is consistent with a sociological portrait of turnout.

The fourth variable, however, clashes with sociological approaches and Guatemalan conventional wisdom. With a Beta weight of 0.24, the relationship between the percentage of the municipal population that is indigenous and turnout rates are unexpectedly positive. According to the received wisdom about Guatemala, political

participation on the part of indigenous people is low because they, like women and illiterates, belong to a "backward" culture and hence are unlikely to be politically active. Is this an artifact of our aggregate analysis? What might account for this weak, but statistically significant and positive Beta coefficient?

A response to the first question might lie with the ethnic classification of persons by census authorities. Demetrio Cojtí Cuxil (1991) argues that census takers have traditionally underestimated the number of indigenous peoples in Guatemala. Even though it is difficult to ascertain the effects of such a bias, it stands to reason that prejudice on the part of census takers simply isolates the unambiguously Native American share of the population from that which is clearly *ladino* and from that stuck somewhere in between. It is, after all, this last share which is most difficult to classify.

This variable does not appear to be a surrogate for any other. According to Table 2, the correlation coefficient between the percentage of a municipality's population that is indigenous and that which is rural is only 0.0031 and it is not statistically significant ($p = 0.955$). Again, this is an unexpected result because common wisdom suggests that most indigenous peoples live in rural areas where they are numerically dominant.

TABLE 2. CORRELATION MATRIX

	ILLITERATE%	AREA	INDIGENOUS%	FEMALE%	PERCAP86	RURAL%	DCG%	TURNOUT
ILLITERATE%	1.0000 (325) P=.	.0450 (325) P= .419	.6377 (325) P= .000	-.3759 (325) P= .000	-.3690 (325) P= .000	.3932 (325) P= .000	-.1463 (325) P= .008	-.3557 (325) P=.000
AREA		1.0000 (325) P=.	-.1314 (325) P= .017	-.1243 (325) P= .025	-.0297 (325) P= .593	.1329 (325) P= .016	-.0025 (325) P= .964	-.1983 (325) P=.000
INDIGENOUS%			1.0000 (325) P=.	-.3196 (325) P= .000	-.0841 (325) P= .129	.0031 (325) P= .955	.0384 (325) P= .489	.0495 (325) P=.373
FEMALE%				1.0000 (325) P=.	.2930 (325) P= .000	-.3343 (325) P= .000	.1166 (325) P= .036	-.0459 (325) P=.410
PERCAP86					1.0000 (325) P=.	-.5779 (325) P= .000	.1228 (325) P= .026	.3484 (325) P=.000
RURAL%						1.0000 (325) P=.	-.1385 (325) P= .012	-.4245 (325) P=.000
DGC%							1.0000 (325) P= .000	.1777 (325) P=.001
TURNOUT								1.0000 (325) P=.

(Coefficient / (Cases) / 2-tailed Significance)

Rates of municipal indigenoussness, however, may be closely related to illiteracy. This should come as no surprise because governments have rarely demonstrated a strong commitment to educating the country's indigenous population. To determine whether multicollinearity is present, we ran several tests recommended by Berry and Feldman (1985), including regressing each of the independent [end p. 139] variables against all the others. None of these models approaches an r-square of 1.00; the highest, when illiteracy becomes the dependent variable, is 0.57. While the correlation coefficient between the indigenoussness and illiteracy is 0.638 ($p = 0.000$), multicollinearity only becomes a problem when the correlation is around .80. Only when we dropped the illiteracy variable did municipal rates of indigenoussness lose its significance. It, however, does not change signs,

which suggests that the latter is not a proxy for the former variable. Since a majority of the tests indicate that multicollinearity is not a severe problem, we retain both variables in the model to explore their impact on turnout.

A second possible explanation for the fact that indigenous peoples turnout to vote in larger numbers than other Guatemalans is that the Maya and other Native Americans are simply more politically active than ladinos. They do not belong to a "retrograde" or "backward" culture that prevents them, so to speak, from participating in "modern" forms of political participation. It could very well be that the sorts of factors emphasized by students of revolutions and revolutionary movements (e.g., Skocpol, 1979; Tarrow, 1994; Tilly, 1978)--including the autonomy of Indian and peasant communities and their networks of solidarity--might be responsible for the decision to turnout to vote among Native Americans in Guatemala. These are certainly characteristics of the Maya and their communities said to exist by generations of anthropologists (Carmack, 1995; Smith, 1990). We will have more to say about this in the next subsection of this paper.

This finding dovetails nicely with the regression results of the variable measuring the percentage of the municipality's population classified as rural in the 1981 census. With a Beta value of -0.23, this finding is consistent with a sociological as well as a political account of turnout. This result could mean that municipalities with large rural populations have a larger share of citizens culturally unprepared to participate in "modern" politics.

Yet, the negative relationship existing between the percentage of a municipality's population that is rural and turnout might simply indicate that individuals in rural areas face more obstacles when deciding to vote. As in most countries, there are a limited number of polling stations in municipalities; at least during the 1985 elections, the 5,142 stations were exclusively distributed in municipal capitals. Unless voting can be accomplished when traveling to sell produce or textiles on market day, getting to a polling station on election day may require making a special trip to the municipal capital.

To determine whether distance to the polls affects turnout, we turn to a variable that incorporates the territorial size of municipalities. Shifting to another measure is necessary because ruralness does not necessarily imply inaccessibility. The Municipality of Santa Cruz La Laguna in the Department of Sololá is all of 4.1 square miles in size, and yet 71.6 percent of its population is classified as rural. At the other extreme, the geographically largest municipality in Guatemala, San Andrés, in the Department of Petén, is 3,172 square miles in size and 68.7 percent of its population is classified as rural. While statistically significant, the correlation coefficient between the percentage of a municipality that is rural and the territorial size is only 0.13. In line with a more political interpretation of turnout, the geographic area encompassed by a municipality is negatively related to turnout. With a Beta coefficient of -0.15, it suggests that the size of a municipal territory dampens turnout by augmenting the costs faced by citizens deciding to become voters.

The last factor that affects turnout rates is the share of the vote received by the Christian Democratic Party (DCG). Though we entered the municipal vote shares of all parties that participated in the presidential election, the only party's vote share that proved to be statistically significant, with a Beta weight of .09, is that belonging to the DCG, the party widely perceived to be in favor of change and that had never before held the presidency. The importance of partisanship in accounting for turnout results is further revealed by the regression results of two additional models using slightly different dependent variables. The first, whose results are reported in Table 3, assesses the impact of the independent variables on the legislative elections held concurrently with the race for the presidency. The second regresses these independent variables on the runoff for the presidency and its results are reported in Table 4. This election pitted Vinicio Cerezo of the Christian Democratic Party (DCG) against Jorge Carpio Nicolle of the National Centrist Union (UCN). **[end p. 140]**

TABLE 3. REGRESSION RESULTS FOR VOTER TURNOUT, 1985 LEGISLATIVE ELECTIONS

	Beta	b	t*
Intercept		78.8967	26.297
Illiterates (as a percentage of registered voters)	-0.3799	-0.1756	-5.287
Females (as a percentage of registered voters)	-0.3022	-0.2439	-5.658
Per capita Municipal spending, 1986	0.1403	0.0929	2.390
Percent indigenous population	0.2489	0.0563	3.684
Percent rural population	-0.2171	-0.0799	-3.451
Size of municipality (in square miles)	-0.1576	-0.0046	-3.254

*All t statistics are significant at the 0.01 level or greater, except for per capita municipal spending, which is significant at 0.0174.

Note: The Multiple R is 0.556, the R-Square is 0.309, and the adjusted R-Square is 0.29.

TABLE 4. REGRESSION RESULTS FOR VOTER TURNOUT, 1985 SECOND PRESIDENTIAL BALLOT

	Beta	b	t*
Intercept		67.7023	17.651
Illiterates (as a percentage of registered voters)	-0.4543	-0.2410	-6.440
Females (as a percentage of registered voters)	-0.1076	-0.0995	-2.057
Percent indigenous population	0.2433	0.0629	3.518
Percent rural population	-0.2171	-0.0913	-3.920
Size of municipality (in square miles)	-0.1476	-0.0049	-3.113
Percent votes for DCG (Christian Democratic Candidate)	0.1797	0.1333	3.716

*All t statistics are significant at the 0.01 level or greater, except for percent of registered voters who are female which is significant at 0.0405.

Note: The Multiple R is 0.578, the R-Square is 0.33, and the adjusted R-Square is 0.32.

Though the second and especially the third models broadly confirm the validity of the initial regression results, they underscore the importance of political factors in shaping turnout. The explanatory power of the DCG nearly doubles in the presidential runoff: it shifts from accounting for .09 to .18 of the variance. Its increased importance comes at the expense of per capita municipal spending, which becomes statistically insignificant, and the share of the electorate that is female. Though this factor retains its significance, it drops from having a Beta coefficient of -.29 to -.11.

That the nature of the contest shapes turnout indicates that parties and voters are not simply passive transmitters of sociological properties. Facing fewer choices in the runoff than in the initial presidential and legislative races, citizens may be more willing to vote if the efforts made by parties to mobilize the electorate are more discernable and intense. As defined by the rules governing access to state power, the choices citizens face can either diminish or amplify turnout and, along with the identity and mobilizational capacity of parties, can even circumvent the obstacles posed by social and economic structures. This finding thus lends credence to more political accounts of turnout by underscoring that campaign messages and electoral tactics can augment turnout rates.

The Impact of Political Violence

We now turn to the issue of political violence and its effects on turnout. As students of Guatemala and Guatemalans know all too well, much of the country was swept by waves of violence that swelled by the late 1970s. They reached a crescendo by the early 1980s as military-dominated governments declared war on much of the countryside. Native Americans, in particular, became victims of scorched earth policies that destroyed and relocated over 300 Indian communities (Carmack, 1988). **[end p. 141]**

Though we do not measure political violence quantitatively, there is enough impressionistic evidence about the spatial distribution of violence to begin scrutinizing claims about its consequences. In his study, Gálvez Borrell identifies some patterns in abstention rates at the departmental level. First, he points out that higher levels of abstention exist in areas hard hit by the violence. In addition, he notes that more peripheral departments such as Petén, Izabal, and Jutiapa also have higher rates of abstention. As displayed in Figure 1, our own measure of turnout at the departmental level does indeed show similar findings. Several of the eastern departments have among the lowest turnout rates in the country, as does the Department of Quiché, the site of high levels of political violence. The Departments of Huehuetenango and Solola, that were, in addition to the Department of Quiché, subject to high levels of political violence have relative low turnout rates. But does this department level conclusions hold at the municipal level?

An examination of Figure 2 indicates that many of the municipalities in those departments identified as the hardest hit by violence did witness lower rates of voter turnout, including Huehuetenango, Quiché, and Sololá. But this map also indicates a relatively high degree of variability exists in these departments. Some of the municipalities have above average turnout, while others are well below average. In addition, Huehuetenango (65.9%), Quiché (85.2%), and Sololá (94.2%) all have levels of indigenous population well above the national average of 41.9 percent. We note too that the indigenous population is not uniformly distributed within the country. For example, the Department of Jutiapa (52.9%) also had a turnout rate that was below the national average (59.3%) but has an indigenous population of only 1.3 percent.

We turn now to Figure 3, which contains standardized regression residuals. We note that the Departments of Sololá, Quiché, and Huehuetenango have several municipalities where our model both significantly under-predicts turnout and significantly over-predicts turnout. These three departments are the most heterogeneous in terms of turnout and warrant further examination.

In order to clarify further, we examine the Department of Quiché, and specifically to the case of three municipalities in what is called the Ixil Triangle (Figure 4). In our analysis of the first presidential balloting we find that the municipality of San Juan Cotzal (Figure 2) was in the highest quartile of turnout rates (65.5). The municipalities of Chajul and Ixcán which were combined in order to include them in the regression analysis have a turnout rate (61.5) which is also above the national average, while Nebaj is just below the national average (56.9). On the map of residuals from that regression model (Figure 3) the municipality of Cotzal is one of the outliers where our model significantly under predicts turnout.

What is particularly interesting for the municipalities of the Ixil Triangle is their turnout rate in the legislative elections. Presenting municipal turnout rates for the legislative elections, Figure 4 also separates the Municipality of Ixcán from Chajul and Chicaman from Uspantán. Though the presidential and legislative regression models combined them so as to incorporate independent variables based on the 1981 Census, which was taken before the municipalities were split, this map shows them as they were at the time of the elections. For our purposes we note that the Municipalities of Cotzal (94.6%) and Nebaj (87.7%) have higher levels of indigenous population than the Department as a whole (85.2%) while the Municipality of Chajul (80.5%) is slightly below the departmental percentage. For the legislative elections in the Ixil Triangle the highest turnout rate is in the Municipality of Chajul (71.6%) followed by San Juan Cotzal (67.0%) and Nebaj (59.9%).

The turnout rate in the legislative elections for all three of the municipalities of the Ixil Triangle is higher than their turnout rates for the concurrent presidential elections. These findings raise questions about the alleged impact of political violence on turnout. The three municipalities of the Ixil Triangle (Chajul, Nebaj and Cotzal)

were, in the 1980s, the location of one of the Guatemalan army's most brutal counterinsurgency programs (Stoll 1993). The number of civilians brutally murdered, by most reasonable estimates, runs to the thousands. Thousands more fled the region for safety in Mexico. Thousands more became internal refugees. Burned out of their villages, some were resettled in government model villages. As an area of extreme political violence, the Ixil Triangle should display alienation and withdrawal from the formal political [end p. 142] process of a state engaged in a war against large swaths of its population. Why then these relatively high voter turnout rates?

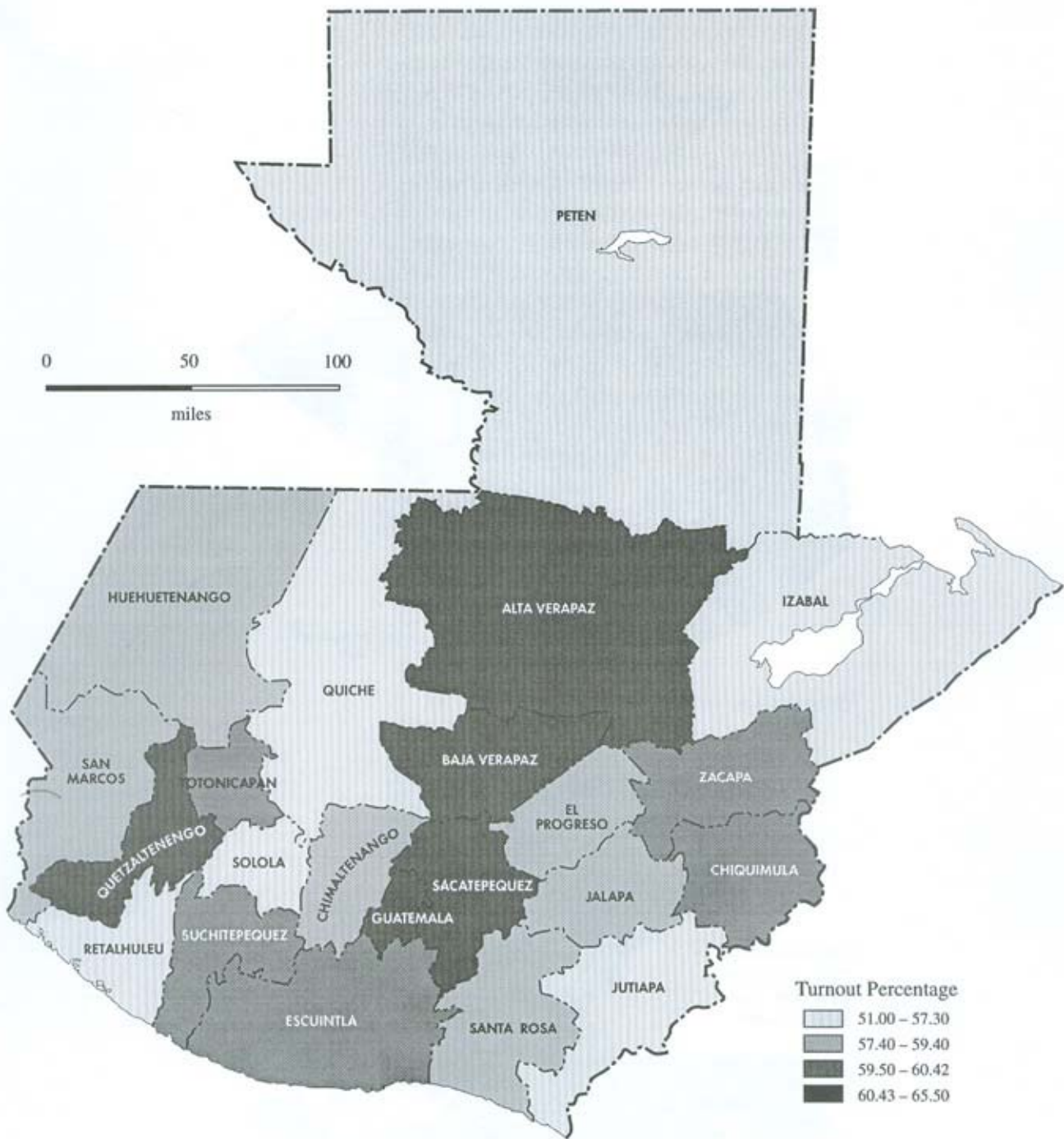


Figure 1: Guatemala: Departmental Voter Turnout, 1985.

We believe that the explanation of higher turnout rates lies with the violence suffered in this region, and the desire by residents to "make their own decisions." By 1985, the army was beginning to gain the upper hand in its

war with the guerrillas. Stoll argues that, beginning in the mid-1980s, residents of the Ixil changed tactics. They sought not change or revolution by siding with the guerrillas, but sought peace and freedom, even if this meant tacit support for the military. It was far preferred to the brutal and often random violence they had suffered in the early 1980s. Residents of this area complied with and acted in ways that they believed would maintain the peace in ways to reduce the likelihood that they would ever again suffer the violence of the early **[end p. 143]**

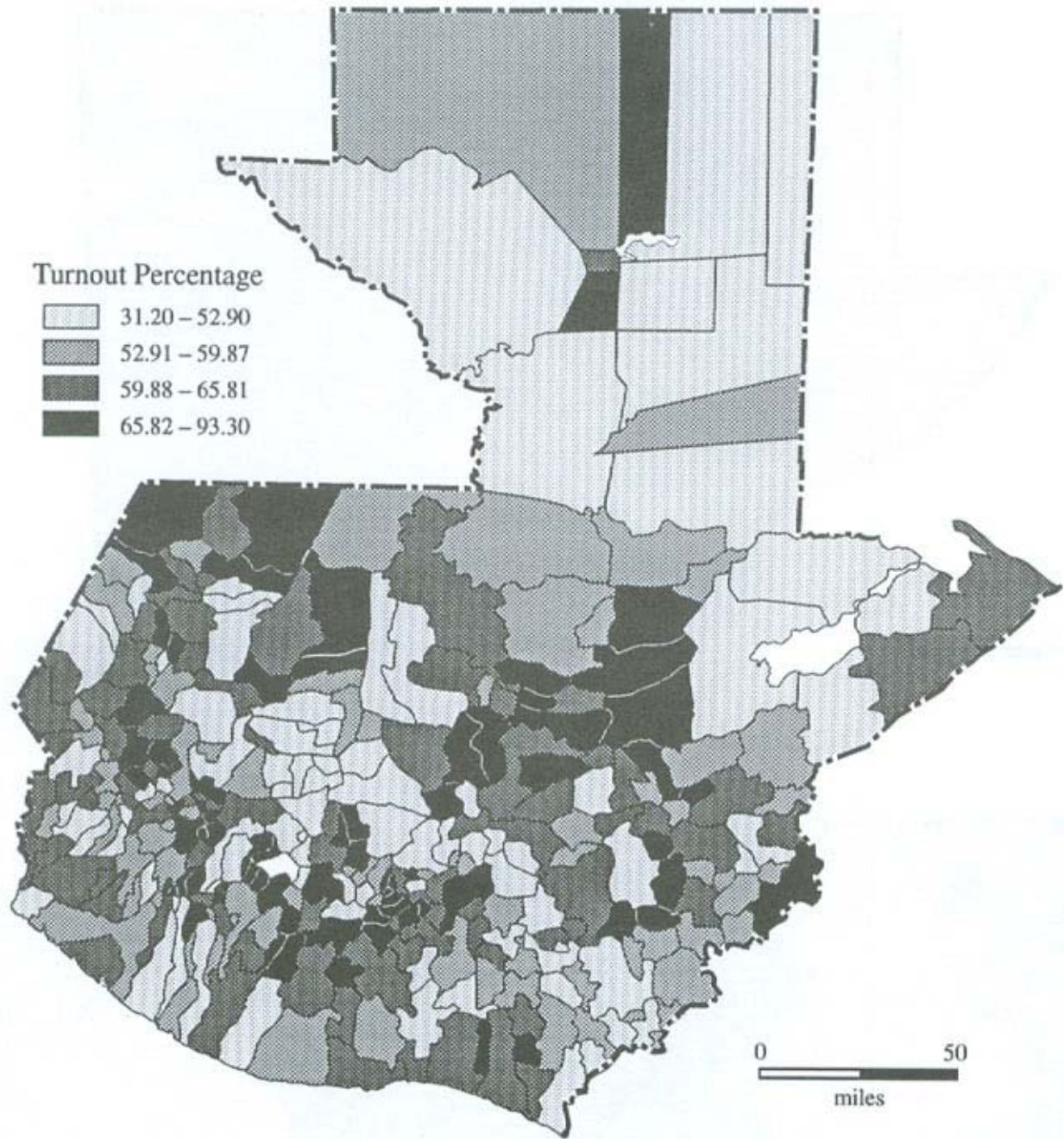


Figure 2: Guatemala: Municipal Voter Turnout, 1985.



[end p. 144]

1980s. Participation in the electoral process, after all, might allow them to elect local and national authorities that could maintain the peace and, in addition, make them appear, to the army, like model citizens.

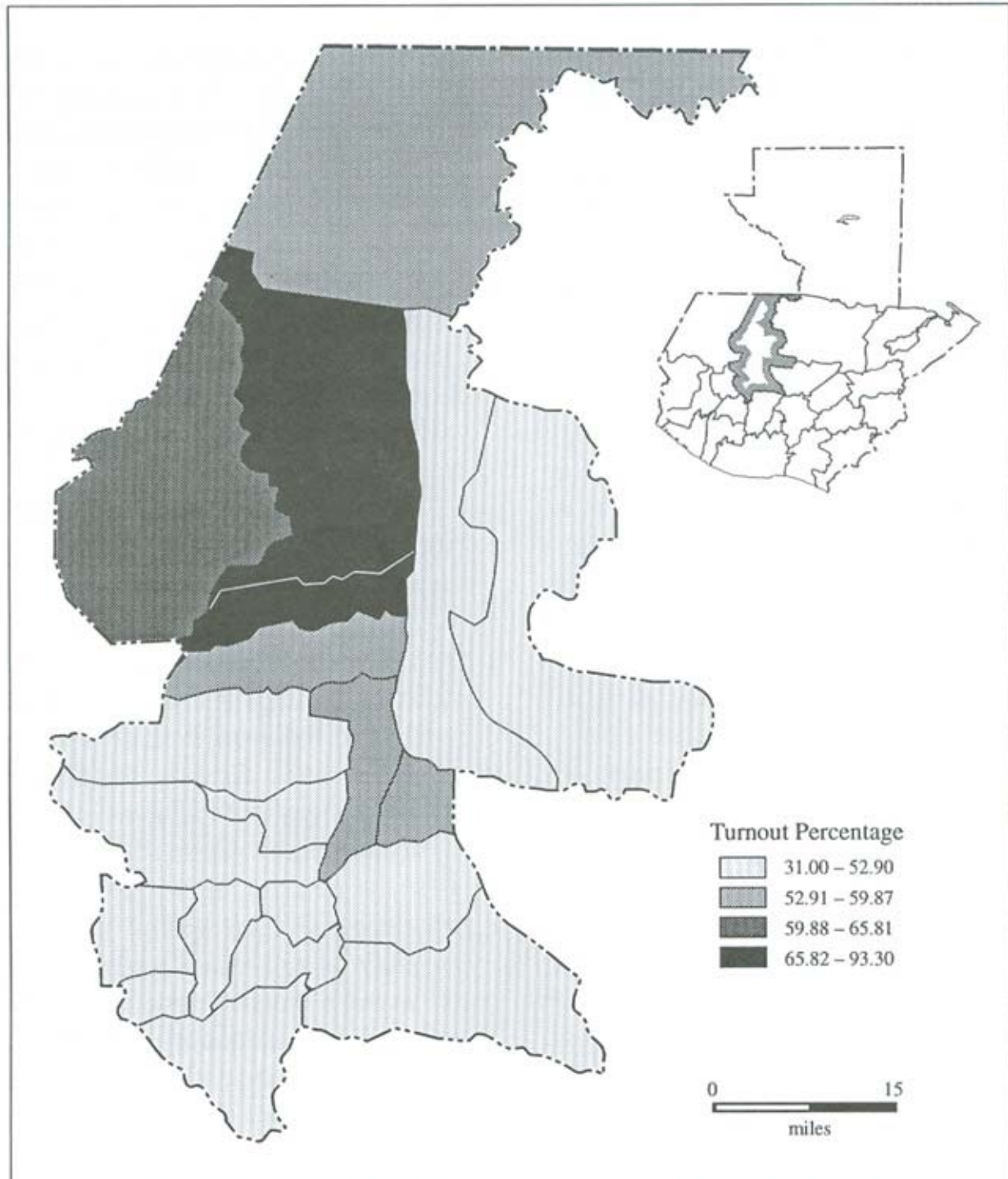


Figure 4: Department of El Quiché: Municipal Voter Turnout, 1985

The Unsuccessful Components of the Model

Several variables are not significant, but provide insights about turnout in Guatemala. We develop a crude estimate of voter registration rates and find no relationship exists between rates of voter registration and turnout. The $r = 0.0399$ and the $p = 0.473$. If valid, this finding suggests that registration and voting are shaped by different sorts of constraints.

Two other economic variables did not prove statistically significant: per capita municipal taxes paid and per capita difference between municipal taxes paid and municipal spending. The reason for examining the effects of per capita municipal taxes paid is to assess the impact of varying levels of municipal economic development. We assume that the more economically developed municipalities are those with higher levels of per capita taxes collected.

A related economic/tax variable consists of the difference between per capita taxes paid and per capita municipal expenditures. In Guatemala, most of the taxes collected at the municipal level are in fact taxes imposed by the central government, with the city simply acting as tax collector. So, it seems **[end p. 145]** plausible that municipalities which fare better in this exchange might have more politically active citizens and hence have higher turnout rates. Yet, we find no support for our hypothesis that cities that receive, relatively speaking, more money back from the central government have higher turnout rates. The simple correlation of this variable with voter turnout is $r = -0.1116$ ($p = 0.44$). This variable has a strong negative correlation with per capita taxes paid, $r = -0.88$ ($p = 0.000$).

Another set of political variables attempt to measure the relative importance of each municipality. Influenced by the third model of turnout, we hypothesize that the dependent variable is also a function of the efforts made by parties to mobilize voters. The first way of operationalizing this hypothesis is by calculating the percentage share of the nation's total population living in each municipality. The second way of doing so is to calculate the percentage share of the nation's total electorate living in each municipality. Neither of these variables, however, is significant.

A third way of operationalizing the concept of electoral centrality is by measuring the relative importance of a municipality in the selection of deputies. In the United States, for example, great care is taken every 10 years to redraw congressional districts so as to maintain the principle of proportionality of voters to congressional representatives. All of the departments in Guatemala elect at least two legislators and there is a reasonable amount of difference in the population of those departments that do elect a pair of deputies. Hence, in the smallest departments, a vote counts more toward electing a member of the legislature than in some of the other departments. To assess the effects of this variable, we devise an index based on the number of registered voters in the municipality and the number of deputies elected from the department. The municipalities with higher percentages are thus more central to the electoral process since each of the votes in these municipalities count for more. Again, this political variable has no statistically significant effect on turnout.

SUMMARY AND CONCLUSIONS

Based upon an analysis of aggregate characteristics of Guatemala's 325 municipalities, our results indicate that turnout declines as the percentage of registered voters who are illiterate or female in municipalities increases. Furthermore, turnout is negatively associated with the percentage of the municipalities population classified as rural in the 1981 census. A feeble relationship also exists between per capita spending by the municipality and turnout. In conjunction, these relationships suggest that wealthier; more urban and more masculine municipalities are more likely to witness high turnout rates than their counterparts. They also reinforce the argument made by geographers that an analysis sensitive to spatial variations can identify these regional differences.

These findings are consistent with traditional sociological accounts of political behavior. It does appear as if areas with certain social characteristics have citizens with the cognitive resources needed to participate in electoral politics. These results also echo the findings of Oscar Hernández (1990-91) as well as of Seligson et al.

(1995). In an ecological analysis of 510 districts, Hernández discovers that the most important variables in accounting for voter abstention rates in Costa Rica are economic in nature, such as percent of workers in a *canton* (what municipalities are called in Costa Rica) whose monthly salary is below a specified level, the percent of housing units in good condition, and an index measuring the inequality in the distribution of wages and salaries in the canton. Using a survey, Seligson (1995) concludes that levels of education, age and gender differences explain up to 15 percent of the variance in Guatemala, one of the Central American countries with the lowest turnout rates.

Yet, the alleged superiority of sociological interpretations must be placed in cross-national perspective. As we have been at pains to suggest, subnational research designs bias results in favor of sociological perspectives. In most countries, there is typically more variation along cultural and socioeconomic dimensions than along political ones. The centralization of political power in nation-states, especially in unitary systems like Guatemala's, creates a great deal of institutional uniformity. Only research designs that vary institutional features that are likely to identify positive and statistically significant relationships between such factors and turnout (Jackman, 1987; Powell, 1986).

Despite the subnational focus of our research design, we find support for this observation. In [end p. 146] contrast to the legislative elections, participation in the initial and second presidential elections was shaped by the partisan identity of the victor. Especially in the runoff, the share of the vote obtained by the DCG became statistically significant and even reduced the influence of two more sociological factors, those of per capita municipal expenditures and the percentage of the electorate that is female. This finding suggests that varying institutional settings can incite citizens to vote because it alters the options that parties and electorates face.

This paper also stumbled across relationships that run counter to standard sociological wisdom about the behavior of Indians. It is startling to find that a slightly positive relationship exists between turnout and the share of a municipality's population that is indigenous. It is equally intriguing to find out that the percentage of a municipality's population that is rural does not covary with the percentage that is indigenous (the correlation is 0.0031 and $p = .955$). This indicates that the aforementioned finding is robust. It certainly lends credence to the claim that Native Americans do not belong to a backward, rural culture that is a barrier to national integration. Anthropologists and other students of the Maya have long noted that they live in communities with strong notions of solidarity (e.g., Carmack, 1995; Smith, 1990) that collective action theorists (e.g., Hechter 1987) suggest facilitate widespread political participation.

It is important to point out that this, as well as the negative relationship between the percentage of a municipality's population that is rural, and turnout, are consistent with more political accounts of turnout. The latter finding does not necessarily support the claim that rural populations possess fewer of the resources allegedly necessary to participate in politics. Indeed, the statistically significant inverse relationship between the size of a municipality and turnout strengthens the claim that voting declines as the average distance needed to travel to municipal capitals increases. Placing polling stations exclusively in municipal capitals appears to discourage citizens from becoming voters. Like the effects of partisanship on electoral behavior, the decision to place polling stations exclusively in municipal capitals alters political behavior by changing the institutional setting of politics.

As a final set of surprises, we find that levels of political violence appear to have a complex and unexpected impact on turnout. Though the departments hardest hit by the violence of the late 1970s and early 1980s have low turnout rates, it does not follow that political violence discourages populations from voting. Analysis of municipal-level data reveals that a great deal of heterogeneity exists within departments and between elections. While some municipalities had lower turnout rates than the norm, others had turnout rates above the norm in the legislative elections. Indeed, the Ixil region of the Department of the Quiché, which became infamous for its high levels of violence, has turnout rates higher than the nationwide municipal average. This strengthens our finding that Native Americans are not passive members of their political system. They vote and, even in conditions not propitious for participation, they clamor to the polls to seek redress for their grievances.

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RESUMEN

Este trabajo identifica los factores relacionados con las tasas de votación en el país étnicamente complejo de Guatemala. Para tal efecto, el estudio usa mapas y un modelo de regresión para comprender las variaciones en las tasas de votación en las 330 municipalidades de dicho país. Un hallazgo central es que las tasas de votación están en función del porcentaje de la población municipal urbana y de los porcentajes de los votantes que son alfabetos y masculinos. Un hallazgo inesperado es que las tasas de votación están relacionadas con los porcentajes de la población indígena y que están relacionadas inversamente con el tamaño de las municipalidades. Finalmente, este trabajo sugiere que altos índices de violencia política no necesariamente disminuyen las tasas de votación, sino que más bien pueden tener efectos complejos en la participación política. [end p. 149]