

A STATISTICAL STUDY OF SELECTED FACTORS ASSOCIATED WITH
EXPENDITURE VARIATIONS IN CENTRAL CITIES
OF TEXAS, 1950-1960

by

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A THESIS

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by
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ABSTRACT

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Purpose

It was the purpose of this study to investigate through empirical research methods the degrees of influence exerted by selected fiscal, demographic, socio-economic, and political characteristics of cities upon the ordinary expenditures of the central cities of the Standard Metropolitan Statistical Areas of Texas during the years 1950 and 1960.

Methods

The methods used in this study were (1) Pearson's Product-Moment Correlation in comparing variables of interval scale; (2) the Smirnov Test in comparing variables of ordinal scale to those of interval scale; and (3) linear regression analysis to determine the predictability of the various variables in influencing the expenditure levels of the central cities of Texas.

Findings

From the analysis of the data gathered for this study the following conclusions appear to be in order:

1. Property tax received per capita exerts a strong influence upon expenditure levels of central cities of Texas.

2. Population size of Texas' central cities is of significant influence upon their expenditures.

3. Intergovernmental revenue received per capita exerts a strong influence upon expenditure levels of Texas' central cities.

4. Voter participation levels of Texas' central cities are directly related to their levels of expenditures.

5. The percentages of the populations of Texas' central cities which are over sixty-five years of age are directly related with their levels of expenditures.

6. The less Democratic (partisan) a city population tends to vote in national elections the more likely are its expenditures to rise, speaking again in reference to Texas' central cities.

7. Factors such as population density, per cent owner-occupied housing, per cent of population which was non-white, median family incomes, median school years completed, median age, and per cent increases in population exert relatively insignificant degrees of influence upon the expenditure levels of Texas' central cities.

Approved:

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CHAPTER I

INTRODUCTION

Of the thousands of units of government existing in the United States today, over 98% are classified as units of local government. Despite this preponderance of local governmental units and their significant impact on the national economy, local government finances have received relatively little attention over the years. A vast majority of the research in public finance has been focused elsewhere. Only in recent years have there been extensive studies of state and local government spending. Together, these two levels of government spend more than twice as much as the federal government in providing the necessary services for society.¹ The costs of these services have steadily increased and the demands of the populace have also wrought tremendous changes in the nature and cost of government services.

Simple increases in expenditures by local governments often have readily observable causes. Education, the most costly single function of local governments, has grown at a faster pace than any other single function. Some of the causes for this are clearly demonstrable. There are larger numbers of school-age children

¹James A. Maxwell, Financing State and Local Governments (Washington: The Brookings Institution, 1965), p. 1.

each year and the complexity of modern education dictates more expensive facilities and better trained instructional staffs. There are many such types of specific functional expenditure increases which may have simple discernable reasons for their growth.

There are, however, wide differences in per capita spending, both by specific functions and by total, from region to region and from city to city. It is to this problem, the differences in per capita expenditures by city governments, that this research is directed. By the mere perusal of available statistics, one may notice the wide variation in per capita expenditures from one urban center to the next. This research attempts to discover trends and patterns of variations and measure the strength of their association with certain selected fiscal, demographic, socio-economic, and political characteristics of the various cities. More specifically, this study will attempt to discover the degrees of influence exerted by such characteristics as population size, population density and growth, level of taxation, level of education, age of population, population income, and political behavior upon per capita expenditures of selected cities of Texas during the last twenty years. The method of selecting cities for analysis is explained in Chapter II of this research.

Some studies of municipal finance have been conducted in recent years; they have varied in approach and have come from different disciplines. Some of the early studies attempted to measure govern-

mental efficiency and to quantify and determine the quality of services rendered.² This type of research will be of minor importance to this study due to the inability to measure accurately either efficiency or quality of governmental services. Rather, this study will limit its attention to the influence of selected characteristics of cities upon their expenditures for "common functions."³

Many of the previous studies, directly related to the purpose of this research, were concerned with various demographic factors and their effects upon expenditures. These works were also more broadly based than this study which is limited to selected central cities of a single state. The majority of the previous studies which were based upon statistical analysis also used more sophisticated techniques of analysis. The studies which first attempted analysis of population growth and other aspects of demography in relation to municipal expenditures were among the earliest attempts to identify relationships of demographic and socio-economic factors with municipal expenditures. Several

²An example of this type of research is Clarence E. Ridley and Herbert A. Simon, Measuring Municipal Activities (Chicago: International City Managers' Association, 1943).

³"Common functions" includes expenditures in the categories of police, fire, highways, sanitation, recreation, and public welfare, excluding capital outlay. Education is excluded because it is primarily financed under a special district arrangement in the State of Texas, the area of this study. For a more detailed explanation see Appendix I.

such studies found a positive relationship between per capita expenditures and population size,⁴ and other studies were expanded to include other factors descriptive of the population but not necessarily related to size. There are numerous examples of these broader studies. They considered such factors as per cent of population increase, number in the labor force, tax valuations, wealth, housing density, per cent of white-collar workers, and relation of the urban centers to satellite areas.⁵

Since the mid-1950's, research in municipal finance has increased and expanded into studies of influences, cost-revenue analysis, land-use planning, and several other related areas. However, for the purposes of this paper, only those which are related to variations of expenditure levels are important for review. Many of these are only indirectly related since they do not all examine comparable data or rely on comparable techniques of measurement.

⁴Mabel L. Walker, Municipal Expenditures (Baltimore: The Johns Hopkins Press, 1930), p. 117; Josef Berolzheimer, "Influences Shaping Expenditures for Operation of State and Local Governments," The Bulletin of the National Tax Association, XXXII (March, 1948), 173; Solomon Fabricant, The Trend of Government Activity in the United States Since 1900 (New York: National Bureau of Economic Research, 1952), p. 129; and Alvin H. Hansen and Harvey S. Perloff, State and Local Finance in the National Economy (New York: W. W. Norton and Company, Inc., 1944), p. 72.

⁵Arnold Brecht, "Three Topics in Comparative Administration," Public Policy, 1941, pp. 305-17, and Amos H. Hawley, "Metropolitan Population and Municipal Government Expenditures in Central Cities," Journal of Social Issues, VII (1951), 100-108. Hereinafter cited Hawley, "Metropolitan Population."

Lyle C. Fitch, writing in the May, 1953, issue of American Economic Review, attempted to analyze the trends of government expenditures at all levels since 1890. As in the earlier studies of Mabel Walker, Josef Berolzheimer, Solomon Fabricant, and Alvin Hansen and Harvey Perloff, Fitch found a positive relationship between a city's population size and its per capita expenditures. The Fitch study, like the other early, empirical studies, was not as comprehensive as later ones, for it merely surveyed the patterns of expenditures during various economic cycles represented from 1890 to 1953, with little investigation of the intricate relationships identified by the more recent research.⁶

A later study concerning trends in government finance was published in 1964, under the authorship of Frederick C. Mosher and Orville F. Poland. This study was also a survey of public finance trends from the turn of the century but took a somewhat different approach than the Fitch study. Mosher and Poland described the influences of changing social environments and economic cycles upon public expenditures at all levels of government. They also considered variations in revenue, the impact of public debt, and the influence of public employment upon expenditures. Mosher and Poland concluded that cities, as other units of

⁶Lyle C. Fitch, "Trends in Federal, State, and Local Government Expenditures Since 1890," American Economic Review, XLIII (May, 1953), 216-33.

government, respond primarily to the demands of the environment in which they operate.⁷

A group of papers published in 1963 under the sponsorship of the Committee on Urban Economics approached the variations in municipal expenditure levels in a manner similar to the Fitch and Mosher and Poland studies. A paper, included in this publication, presented by Allen D. Manvel of the Bureau of the Census explained the variations of urban expenditures in terms of changing dollar values, public demands, institutional responsibilities, and rising costs for staff personnel. This article made predictions of future fiscal needs by functional categories based on predicted ecological change.⁸

Later studies of per capita expenditure variations and their influences refuted, for the most part, the strength of relationship between population size and per capita expenditures. Amos H. Hawley found in 1951 that population size had little, if any, significant effect upon per capita expenditures.⁹ This conclusion

⁷Frederick C. Mosher and Orville F. Poland, The Costs of American Governments: Facts, Trends, Myths (New York: Dodd, Mead and Company, 1964), p. 144.

⁸Allen D. Manvel, "Changing Patterns of Local Urban Expenditures," printed in Howard G. Schaller (ed.), Public Expenditure Decisions in the Urban Community (Baltimore: The Johns Hopkins Press, 1963), pp. 19-36.

⁹Amos H. Hawley, "Metropolitan Population and Municipal Government Expenditures in Central Cities," Journal of Social Issues, VIII (Nos. 1 and 2, 1951), 100-8.

was confirmed by two other studies made about the same time which are cited as two of the most thorough studies of municipal finance by the most recent publications.¹⁰ Together, the research of Hawley, Stanley Scott and Edward Feder, and Harvey Brazer represented clear departures from the findings of the earlier studies.

The works of Scott and Feder in 1957 and Brazer in 1959, both based on 1950 census statistics, delved further into the associations of other factors with per capita expenditures of municipal governments, both by total and by functions. The Scott and Feder study was similar in method to that of this paper in that it was limited to the urban centers of a single state, California. Scott and Feder found significant relationships for property valuations per capita, 1940 to 1950 rate of growth of populations, retail sales per capita, and median number of persons per occupied dwelling unit.¹¹

The study of Harvey E. Brazer, under the auspices of the National Bureau of Economic Research, was much more broadly based than any previous research, as it surveyed expenditures for 462 cities across the nation. Brazer measured the strengths of

¹⁰Stanley Scott and Edward L. Feder, Factors Associated With Variations in Municipal Expenditure Levels (Berkeley: Bureau of Public Administration, 1957); Harvey E. Brazer, City Expenditures in the United States, Occasional Paper No. 66. (New York: National Bureau of Economic Research, 1959). Hereinafter these works will be cited Scott and Feder, Factors and Brazer, City Expenditures.

¹¹Scott and Feder, Factors, p. 42.

association between expenditures for common functions and population, density of population, rate of growth of population, median family income, type of employment, and intergovernmental revenue received. This study found several significant relationships which are discussed in comparison with the findings of this paper and are presented in Chapters III and IV.

The classification of cities with respect to whether they are central cities of a standard metropolitan area, industrial or residential suburbs within an area, independent cities, or major resort centers was found to be a strong indicator of level of expenditures by the Brazer study. This classification was also broken down to distinguish between family income levels of core cities of large and small metropolitan areas and again strong relationships to per capita expenditures were discovered.¹²

By multiple regression analysis, Brazer found high degrees of association of expenditure levels related to density of population and the ratio of the city's population to that of the standard metropolitan area in which it is located. However, the relationships did not hold true for each expenditure category in each case but substantially held when considered in relation to total expenditures. A positive relationship was also found for median family incomes, from which Brazer concluded that expenditures

¹²Brazer, City Expenditures, p. 66.

under all functional categories tend to increase as income rises.¹³

In Brazer's study, the ratio of employment in manufacturing, trade, and services to population was not found to affect substantially variations in per capita expenditures, except when "industrial" suburbs were compared with residential suburbs. However, it was explained that this might possibly be due to the narrowness of the variable and suggested that a ". . . more inclusive variable of this nature might prove far more useful."¹⁴

Brazer also found intergovernmental revenue received per capita to be strongly positive in association with per capita expenditures and concluded that its importance was primarily due to the fact that it served as a limited measure of the distribution of functional responsibilities between the various levels of government and represented an indicator of the availability of funds to finance various expenditures.¹⁵

Hawley, Scott and Feder, and Brazer all found some negative association between per capita expenditures and the rate of population growth.¹⁶ These findings were based on a period of population increase which may not be reliable during the present

¹³Ibid., p. 67.

¹⁴Ibid.

¹⁵Ibid.

¹⁶Hawley, "Metropolitan Population," p. 103; Scott and Feder, Factors, p. 32; and Brazer, City Expenditures, p. 66.

period of population decline in the central cities. Hawley and Brazer also found a positive relationship between per capita city expenditures and the density of the central city population. Simply stated, as more people are crowded into an area, certain expenditure categories rise sharply, such as police, fire, and sanitation costs. Exceptions to this were found for expenditures for streets and highways and for recreational facilities.

The most important finding of Hawley, verified by Brazer,¹⁷ was the positive association existing between central city expenditures and the proportion of the standard metropolitan area population living in the suburban ring.¹⁸ Hawley's hypothesis was based on two assumptions: that a city spends to meet the total need caused by necessary activities of the city, and that suburban area populations generate other activities necessary for the city.¹⁹

Central city expenditures per capita, and presumably total expenditure as well, have been rising at least since the beginning of the period of migration to the cities (circa 1900). City revenues have also risen, as have price levels. The ratio of population

¹⁷Brazer, City Expenditures, p. 67.

¹⁸Hawley, "Metropolitan Population," p. 100.

¹⁹Ibid.

living in the suburban ring has become much greater than ever before, where central city population density has experienced a definite decline, except in the older cities where high density pockets continue to grow. These factors considered together should continue to cause an increase in per capita city expenditures. Several studies have examined various factors of the urban and suburban fringe in relation with each other and all seem to conclude that per capita city expenditures will increase with the possible exception of certain cities where migration to the fringe areas will possibly not be as great as in the majority of the cities.²⁰

There are three recent studies available which represent the latest research of influences upon municipal expenditures. In the December, 1965 issue of the National Tax Journal, Woo Sik Kee compared total municipal expenditures to six independent variables which are comparable to the variables presented for analysis by this paper. The Kee study found significant positive relationships, and per capita state aid. Only a weak positive relationship was found for per capita income. Significant negative

²⁰Mordecai S. Feinberg, "The Implications of Core-City Decline for the Fiscal Structure of the Core-City," National Tax Journal, XVII (September, 1964), 226; Julius Margolis, "Metropolitan Finance Problems," published in James Buchanan (ed.), Public Finances: Needs, Sources, and Utilization (Princeton: National Bureau of Economic Research, 1961), p. 299; Woo Sik Kee, "Central City Expenditures and Metropolitan Areas," National Tax Journal, XVIII (December, 1965), 337-53. Hereinafter cited Kee, "Central City Expenditures."

relationships were found for owner occupied housing and ratio of central city population to total population of the standard metropolitan area.²¹ These negative relationships are in opposition to the findings of Hawley, Scott and Feder, and Brazer who all found most significant relationships for the population ratios of central cities to their suburban areas.²² Kee also suggested that a large part of the variations in municipal expenditures were attributable to the differences in the distribution of governmental responsibilities between the states and their political subdivisions.²³

The second of the studies of most recent publication is a 1967 research report of the National Industrial Conference Board, a non-profit organization. The work was authored by Juan de Torres and was an attempt to present a general analysis of strictly local public finances with an emphasis upon the forces which have shaped the growth of local expenditures. This study, however, does not follow the statistical approach of most other recent research in municipal finance. Rather, the Torres study employs the more traditional method of study, that of presentation of groups of relatable facts and, through deductive reasoning, then postulates

²¹Kee, "Central City Expenditures," pp. 344-5.

²²Hawley, "Metropolitan Population," p. 107; Scott and Feder, Factors, p. 32; and Brazer, City Expenditures, p. 67.

²³Kee, "Central City Expenditures," p. 339.

hypotheses without reliable means of testing for validity. From such facts as population growth, rural to urban and urban to suburban migration, and the continuous rise in municipal expenditures, Torres concluded that population size, density of population, and migration, either to or from the central city, are all significant forces which have caused and will continue to cause increases in municipal expenditures. Torres also stated that as density of population increase "economies of scale may accrue."²⁴ The findings of the Torres research are highly suspect both as to methodology and conclusions in light of most other modern research.

The most recent research concerning factors of influence upon municipal expenditures is Roy W. Bahl's Metropolitan City Expenditures.²⁵ This study, like those of Hawley, Scott and Feder, and Brazer, is essentially the same type as presented by this paper, that of investigating the degrees of association between selected demographic, socio-economic, and political characteristics of cities to their general expenditures by means of statistical analysis.

Basically, Bahl's research was complementary to the studies of Hawley and Brazer, for his study reaffirmed the primary con-

²⁴Juan de Torres, Financing Local Government (New York: National Industrial Conference Board, Inc., 1967), pp. 2-3.

²⁵Roy W. Bahl, Metropolitan City Expenditures: A Comparative Analysis (Lexington: University of Kentucky Press, 1969). Hereinafter cited Bahl, Metropolitan City Expenditures.

clusions found in the aforementioned works. The conclusions of Bahl:

lend empirical support to the basic propositions about the level of public spending either in the central city area or by the central city government: (a) that the level of per capita central city expenditures is closely related to the size of the central city population relative to that of the entire SMSA; (b) that spending for certain functions, notably police, fire, and highways shows a close association with population density; and (c) that much of the inter-city variation can be attributed to intercity variations in intergovernmental revenues.²⁶

Bahl further described the primary factors which influence central city expenditures. First, Bahl found the level of interaction between the residents of the central city and the urban fringe to represent a potential drain on city expenditures. Second, per capita intergovernmental revenue was found to demonstrate a significant influence upon expenditures, especially by function, which implies that public decision-makers at the state and federal level can to some degree shape the pattern of city-to-city variations in city services. Third, demographic and sociological characteristics of the city's population were found by the Bahl study to exert considerable influence upon city expenditures both as to quantity and quality of city services rendered. Finally, Bahl found a consistent positive relationship between commercial and industrial activity levels of the central city and the level of municipal spending.²⁷

²⁶Ibid., p. 129.

²⁷Ibid., pp. 129-30.

CHAPTER II

RESEARCH DESIGN

Assuming from the findings of relevant research that demographic, fiscal, socio-economic, and political characteristics of a city exert varying degrees of influence upon per capita municipal expenditures, selected data from each category will be tested as to each variable's strength of association, and the total influence of all variables acting together. This study, though limited to the major cities of Texas, may offer significant insights toward understanding the elusive problem of municipal finance.

The study selects eighteen cities of Texas which includes most of the "central cities"¹ of the standard metropolitan areas within the state. Only those central cities which are characterized by dissimilar circumstances such as overlapping state boundaries or coupling with other cities to form a central city are excluded.² Expenditures of the selected cities for the years 1950

¹"Central cities" are defined by the Bureau of Census to be the major urban center of a Standard Metropolitan Statistical Area (SMSA), which is defined as an urban center of 50,000 or more population and its county of location, and other contiguous counties which are economically and/or socially integrated with the urban center.

²Such cities as Texarkana, which is part of both Texas and Arkansas, and Beaumont and Port Arthur, which are coupled together to form a central city, were excluded from this study due to difficulty in collecting comparable data.

and 1960 are employed for this analysis. To facilitate the use of comparable data, the expenditure analysis focuses on per capita expenditures for which data is consistently available. Thus, only expenditures falling into the category referred to by the Bureau of Census publications as "common functions"³ will be used. Only total expenditures for "common functions" will be tested for correlation, though it should be remembered that this categorical term encompasses expenditures for police, fire, sanitation, recreation, streets and highways, and public welfare.

The statistical analysis of this research employs the calculation of simple correlations using Pearson's Product-Moment Correlations in analysis of variables of interval scales, and applying the Smirnov Test for correlation of interval scale variables to ordinal scale variables.⁴ For further examination, a linear regression analysis is employed to predict the degrees of variance explained by each variable. This regression analysis differs from those employed by previous studies, as in this study the amount of

³See Appendix I for complete description.

⁴The Pearson method of correlation analysis was chosen as the best for comparison of interval scales. The Smirnov Test was selected as the strongest measure of correlation between ordinal scales and interval scales, especially due to its unique characteristic of measuring correlation in cases where there are a large number of ties. The strengths and weaknesses of both of these analytical tools are discussed in Hubert M. Blalock, Jr., *Social Statistics* (New York: McGraw-Hill Book Company, 1960).

variance accounted for by all variables acting together is computed, and then compared with the amount of variance explained which remains as each variable is subsequently eliminated. Though this method does not allow precise ranking of the variables by their degrees of influence, it accomplishes the purposes of this study, the identification of the primary factors which account for variance in municipal expenditures.

The independent variables chosen for this study are grouped into four descriptive categories: (a) fiscal; (b) demographic; (c) socio-economic; and (d) political.⁵ The variables used as descriptive of the cities' fiscal structures are: (1) property tax per capita; (2) intergovernmental revenue per capita received; and (3) total revenue per capita available. It seems undeniable that revenue must exert a major influence upon expenditure levels of any government. The variables, however, were chosen to investigate whether revenue sources played significant roles of influence upon expenditures.

The demographic variables chosen for this study are: (1) total population; (2) density of population; (3) per cent of increases in population from 1940 to 1950, and from 1950 to 1960; (4) per cent of population which was non-white; (5) per cent of population sixty-five years of age or over; and (6) median age of

⁵See Appendix I.

the population. These factors were chosen for various considerations. Population size, density, and per cent of increase were chosen because of the differences of opinion of their influences expressed in the findings of the previous studies. The percentage of the populations which were non-white was chosen to measure the influence, possibly, of the known migration of Negroes to urban centers. The age factors were selected to indicate the differences between the older urban centers and newer ones. Obviously, some of these factors are questionable as to their direction, but they seem to offer the best possibilities of the data available.

Socio-economic characteristics chosen for analysis are: (1) median school years completed; (2) per cent of the population over twenty-five years of age which finished high school or more; (3) median family income; (4) per cent of houses which were owner occupied; and (5) economic base. The education factors were selected as coordinators with income characteristics and also to possibly complement the non-white factor which is inhibited as an indicator in the study of such a state as Texas that possesses large minority groups which do not fall into the non-white category. The income variables are used to indicate associations of personal wealth as opposed to the fiscal characteristics of the city, and the economic base attempts to classify cities according to the major type employment within each city as either preponderantly industrial or retail.

The political variables chosen for analysis seek to describe the cities as to their degree of "reformism," political participation, and political party preferences during the period of this study. "Reformism" is measured by three variables considered collectively in the form of an index. The factors included in this index are (1) form of municipal government, (2) type of election (ward or at-large), and (3) type of ballot (long or short).⁶ Political participation is measured indirectly by the per cent of the eligible population which actually voted in 1948 and 1956.⁷ Political party preferences are measured by the differences in party vote (by county) from the national average for the winning candidate in the 1948 and 1956 presidential elections.⁸

Each of the four general areas of influences, fiscal, demographic, socio-economic, and political, will be analyzed by their individual variables as to the effect of each and discussed both individually and collectively. It should be kept in mind that results from statistical studies such as this one are not precise in measurement, nor exact in analysis, but merely indicate, to a

⁶See Appendix I.

⁷Percentages of those voting of the total eligible to vote were computed according to a formula prescribed by the Texas Almanac, 1958, (p. 453) to account for those who voted and for which records were unavailable due to poll tax exemptions.

⁸See Appendix I.

varying degree, the strengths of association between variables. However, despite the limitations of this study and the noted inability of precision, it must also be said that such a study offers more evidence for valid conclusions than does the more traditional deductive approach.

CHAPTER III

FINDINGS

The relative importance of the expenditure categories may be seen in Table I and Table II, below, for the years 1950 and 1960.

TABLE I

STATISTICAL SUMMARY OF CITY EXPENDITURES PER CAPITA, 1950
17 CENTRAL CITIES OF TEXAS

	Range		Arithmetic	Median
			Mean	
Total for				
Common Functions	21.39	9.79	15.66	16.85
Police	5.52	2.11	3.86	3.91
Fire	5.44	2.12	3.72	3.61
Highways	4.73	1.19	2.69	2.61
Sanitation	5.79	1.88	3.64	3.72
Recreation	2.62	0	1.54	1.49
Welfare	.51	0	.21	.17

Source: Computed from data appearing in Bureau of Census, Compendium of City Government Finances, 1950, pp. 37-47.

TABLE II

STATISTICAL SUMMARY OF CITY EXPENDITURES PER CAPITA, 1960
18 CENTRAL CITIES OF TEXAS

	Range		Arithmetic	Median
			Mean	
Total for				
Common Functions	40.07	20.96	30.10	30.76
Police	11.43	3.43	7.69	7.47
Fire	10.21	4.69	6.95	6.76

TABLE II (Continued)

	Range		Arithmetic	Median
			Mean	
Highways	8.08	2.52	4.57	4.28
Sanitation	9.77	3.68	6.77	6.86
Recreation	6.27	0	3.76	3.80
Welfare	1.75	0	.37	.13

Source: Computed from data appearing in Bureau of Census, Compendium of City Government Finances, 1960, pp. 36-48.

TABLE III

COEFFICIENTS OF VARIATION IN CITY EXPENDITURES PER CAPITA, 1950
17 CORE-CITIES OF TEXAS

	Third Quartile	Median	First Quartile	Coefficient of Variation*
Total for				
Common functions	17.67	16.85	12.87	14.2
Police	4.22	3.91	2.98	19.4
Fire	4.12	3.61	2.91	16.6
Highways	3.08	2.61	2.05	19.6
Sanitation	4.52	3.72	2.81	23.1
Recreation	2.28	1.49	1.38	30.2
Public Welfare	.41	.17	0	118.0

*--Coefficient of Variation is a measurement of the degree of dispersal around the median.

TABLE IV

COEFFICIENTS OF VARIATION IN CITY EXPENDITURES PER CAPITA, 1960
18 CORE-CITIES OF TEXAS

	Third Quartile	Median	First Quartile	Coefficient of Variation
Total for				
Common functions	32.71	30.76	24.38	13.5
Police	9.06	7.47	6.52	17.0

TABLE IV (Continued)

	Third Quartile	Median	First Quartile	Coefficient of Variation
Fire	7.49	6.76	6.00	11.1
Highways	5.66	4.28	3.50	25.2
Sanitation	7.73	6.86	4.62	22.7
Recreation	5.06	3.80	3.32	22.8
Public Welfare	.43	.13	.01	161.5

The coefficients of variation for public welfare expenditures is enlarged due to the fact that several cities in Texas report no expenditures for this category. The notably higher coefficients of variation for the individual functional categories seems to indicate that many cities may possibly sacrifice expenditures in one area to boost spending in another. It also seems to hold true that the widest variations in spending occur in those functional categories which are usually considered least essential, such as recreation and public welfare.

In the study of the fiscal structure of the cities of Texas in relation to their expenditures, it is hypothesized that the sources of a city's revenue exert influences upon the level of its expenditures. Table V lists the correlation coefficients for each of the three independent variables studied.

TABLE V

PRODUCT-MOMENT CORRELATION COEFFICIENTS OF FISCAL VARIABLES
OF SELECTED CORE-CITIES OF TEXAS
1950 - 1960

	Property Tax Per Capita	Intergovt. Rev. Per Capita	Total Revenue Per Capita
Total Expenditures for Common Functions 1950 (N-17)	.51	-.27	.31
Total Expenditures for Common Functions 1960 (N-18)	.63	-.21	.33

The correlation coefficients for the property tax per capita vary significantly (.51 to .63) from 1950 to 1960, but both indicate a moderate to strong positive relationship of revenue received from this source upon total expenditures for common functions. Coefficients of correlation at these levels indicate that this variable may account for from 26% to 39% of the variations in expenditures. The study by Scott and Feder stated a comparable relationship, finding that equalized property valuations per capita for 192 California cities accounted for a much greater portion of city expenditure variations than any of their other variables.³

The coefficients of correlation for intergovernmental revenue, -.27 in 1950, and -.21 in 1960, indicate a negative relationship

³Scott and Feder, Factors, p. 4.

approaching moderate strength (.30 is considered moderate). This seems to indicate, in Texas at least, that the more funds cities receive from the state and federal governments the less funds are applied to their common functions. This may possibly be accounted for by cities drawing off funds otherwise spent for common functions to qualify for matching programs of state and federal aid in expenditure categories not included under common functions. This finding was in direct opposition to the Brazer study which found, "Intergovernmental revenue per capita is the only one of the six independent variables for which the regression coefficients are statistically significant for all expenditure categories. The association, as we should expect, is consistently positive."⁴ Brazer found this factor in his study of 462 cities to be the strongest indicator of all the variables he considered. It seems, to this researcher, the negative association found in this study merely points out a uniqueness of relationships between Texas cities and their state government.⁵

Correlation coefficients for total revenue per capita, .31 in 1950, and .33 in 1960, indicate a moderate, positive relationship between expenditures by cities and their total revenue

⁴Brazer, City Expenditures, p. 30.

⁵This possibility is intimated by Brazer's discussion of the variations which occur pertaining to this variable within individual states in City Expenditures in the United States, p. 31, and also on p. 42, fn. 42.

available. This is, surprisingly, a weaker measure of association than one might reasonably expect for such an important factor as availability of funds. These coefficients indicate that 10% and 11% of the variations in expenditures for common functions can be explained in terms of total revenue per capita.

The three variables describing the fiscal structures of Texas' cities indicate some important relationships. From the observed data, it may be stated that revenue sources do indeed exert measureable influences upon municipal expenditures. Total revenue is observed to exert moderate influence, yet not nearly as strong an association to the dependent variable (expenditures) is found for total revenue as is found for per capita tax levels. Intergovernmental revenue received per capita is found to possess an inverse relationship to expenditures, and this is the only variable found to differ significantly from the results of comparable studies.⁶

Through linear regression analysis and elimination of variables, (Table VI), further indications of associative strengths of the independent variables to the dependent variable are described.

⁶Brazer, City Expenditures, p. 30; Roy W. Bahl and Robert J. Saunders, "Determinants of Changes in State and Local Government Spending," National Tax Journal, XVIII (March, 1965), 50-57; Seymour Sacks and Robert Harris, "The Determinants of State and Local Expenditures and Intergovernmental Flow of Funds," National Tax Journal, XVII (March, 1964), 76. Hereinafter cited Sacks and Harris, "Determinants of State and Local Expenditures."

Using the 1960 data, the seventeen independent variables are shown to account for 99.4% of the variation in expenditures of the central cities of this study.⁷ With respect to the fiscal variables, this form of analysis again found the level of property taxation as a significant factor of influence upon expenditures, and total revenue was again found to be only moderate to weak in relationship to expenditures. However, intergovernmental revenue was found to have a moderate association to expenditures when analyzed by this method, thus coming more in agreement with earlier studies.

This variance with the findings of the product-moment correlation analysis may suggest that the variable (intergovernmental revenue) is linked with one or several of the other variables to significantly influence expenditures, and thus a situation which is not measured by the simpler "product-moment" correlation technique may exist.

TABLE VI

LINEAR REGRESSION ANALYSIS OF FISCAL VARIABLES
OF SELECTED CENTRAL CITIES OF TEXAS
1960

Variable Eliminated	Coefficient of Determination Remainder of the Model
None	.9943
Property Tax Per Capita	.7064
Intergovernmental Revenue Per Capita	.8281
Total Revenue Per Capita	.9930

⁷The linear regression analysis computed a coefficient of determination of .9943 for the model including all seventeen independent variables.

TABLE VII

PRODUCT-MOMENT CORRELATION COEFFICIENTS OF DEMOGRAPHIC VARIABLES
 SELECTED CORE-CITIES OF TEXAS
 1950 - 1960

Popula- tion	Pop. Density	% Increase	% of Pop. Non-white	% 65 yr. or over	Median Age
.30	.13	-.01	.46	-.04	.71
Total Expenditures for Common Functions - 1950 - (-17)					
.27	-.26	-.10	.64	.13	.60
Total Expenditures for Common Functions - 1960 - (N-18)					

The findings from the group of demographic variables, in comparison with those of other studies using similar factors, are rather misleading unless one considers the differences in techniques of analysis. The early studies which also relied on simple correlations found essentially the same association for population size as does this analysis, i.e., strongly positive.⁸ The more recent research, relying on regression analysis, has disputed this relationship and instead found the ratio of city population to that of its metropolitan area as the more significant indicator of variations in expenditures.⁹

⁸Fabricant, Trend of Government Activity, p. 129.

⁹Hawley, "Metropolitan Population," p. 102; Brazer, City Expenditures, p. 19; and Kee, "Central City Expenditures," p. 344.

The correlation coefficients for density of population, .13 in 1950, and -.26 in 1960, are both neither strongly positive nor negative. These figures indicate no definite direction of association for density of population to expenditures. Again, recent studies have concluded significant relationships to expenditures for this variable.¹⁰ There is some dispute within the modern literature as to whether the relationship of this variable is positive or negative.¹¹ The lack of definite direction for the relationship as computed in this study might possibly be resultant from the isolation of the study to an area which is particularly lagging in the development of government services in adjustment to population changes.

The relationship of population change to expenditures is similar to that of population density, as computed by this study. The correlation coefficients were found to be -.01 for 1950, and -.10 for 1960, which indicates no significant association. Again, this factor may be related to a lag in Texas local governments adjusting to population changes. This finding is substantiated by both Hawley and Brazer,¹² and essentially the same type of

¹⁰Hawley, "Metropolitan Population," p. 103; Brazer, City Expenditures, p. 67; and Kee, "Central City Expenditures," p. 344.

¹¹See Glenn W. Fisher, "Interstate Variation in State and Local Government Expenditures," National Tax Journal, XVII (March, 1965), Table IV, 66; Sacks and Harris, "Determinants of State and Local Expenditures," Table II, p. 77.

¹²Hawley, "Metropolitan Population," p. 103; and Brazer, City Expenditures, p. 46.

association was found by the more recent studies of Fisher and Bahl.¹³ The study by Scott and Feder offered a possible explanation for differences in findings related to this variable, stating that density of population may demonstrate a significant correlation with individual functional costs, although it does not do so for total per capita expenditures.¹⁴

The effect of per cent of urban population of the non-white races is essentially a measure of the influence of Negro migration, as this study of Texas cities samples an area where Negroes are practically the only group of non-whites. This variable is also very closely associated with "median family income" which is discussed later in this chapter. The correlation coefficients computed for this variable were .46 for 1950, and .64 for 1960. This indicates a moderate to strong relationship to level of expenditures, accounting for 21% and 40% of the variation, respectively.

The per cent of the population sixty-five years of age or over is found to have an extremely weak association to expenditure levels by this study, having coefficients of correlation at $-.04$ for 1950 and $.13$ for 1960. Checking for possible curvi-linear relationships by plotting scattergrams of this variable, it was

¹³Fisher, "Interstate Variation in State and Local Government Expenditures," Table IV, p. 66; and Bahl, Metropolitan City Expenditures, p. 124.

¹⁴Scott and Feder, Factors, p. 32.

found to indicate no significant skewness in its distribution. No previous research known to this writer has examined a comparable factor to this one with which to compare findings.

The coefficients of correlation for median age of the population are found to be moderately strong and positive, .71 for 1950, and .60 for 1960. These figures indicate that this factor may account for approximately 50% and 36% of the variations in expenditures for the years studied. This finding is surprising in view of the fact that the other variable related to population age, per cent sixty-five or over, was found to exert little, if any, influence upon expenditure levels.

The associations of this group of variables to levels of expenditures by cities of Texas are very erratic. The factor of size, observed as the strongest correlation, is highly suspect in view of findings of studies using more sophisticated techniques of analysis and thus should be considered open to further investigation. Population density, also of questionable validity, fails, in the findings of this analysis, to demonstrate a definite type of association. The factors of rates of population increase and percentage of the population sixty-five years of age or over demonstrated no significant measures of association. The remaining variables, percentage of the population which was non-white and median age of the population, demonstrated levels of association to expenditures which range from moderate to strong.

Both of these variables need further investigation since there are no other studies available which employed similar factors with which to compare results. As a group, the demographic factors are probably the least indicative of their actual relationships to municipal expenditures. This conclusion is held because of the potentially high associations these variables may hold to other variables which did demonstrate stronger relationships but which cannot be measured by this analysis.

TABLE VIII

LINEAR REGRESSION ANALYSIS OF DEMOGRAPHIC VARIABLES
OF SELECTED CENTRAL CITIES OF TEXAS
1960

Variable Eliminated	Coefficient of Determination Remainder of the Model
None	.9943
Total Population	.7929
Population Density	.9658
Percentage Increase of Population (1950-1960)	.9771
Percentage of Population Which was Non-White	.9747
Percentage of Population Over 65	.8826
Median Age of Population	.9881

Linear regression analysis of the 1960 data by eliminating each variable and measuring the strength of the remaining model in comparison with the full model, suggests some different re-

relationships than those found through simple correlation study (Table VIII). Population and per cent of the population over sixty-five years of age are the only variables of this group which appeared to be exerting any significant influence upon expenditures. This analysis makes the significant relationships of the level of non-white population and median age to expenditures highly suspect.

TABLE IX

PRODUCT-MOMENT CORRELATION COEFFICIENTS OF SOCIO-ECONOMIC VARIABLES
SELECTED CORE-CITIES OF TEXAS
1950 - 1960

Median School Yrs. Comp.	% High School or more	Median Fam. Income	Owner Occ. Homes	Economic Base
.45	.38	.64	-.26	-.53
Total Expenditures for Common Functions - 1950 - (N-17)				
.45	.37	.53	-.21	-.57
Total Expenditures for Common Functions - 1960 - (N-18)				

From the analysis of the variables measuring the educational levels of city populations, it is evidenced that a moderate association to expenditure levels exists. Taken together, median school years completed and percentage of population over twenty-five with at least a high school education account for approximately 20% and 15% of the variation in expenditures, respectively. These

two variables, measured at .45 and .38 for 1950, and .45 and .37 for 1960, may be expected to be closely related to "median family income," on the assumption that higher education levels result in higher incomes. No other study known to this writer has attempted to measure the effects of education levels upon municipal expenditures.

The strength of association of median family incomes to expenditure levels, as measured by this study at .64 for 1950, and .53 for 1960, indicates a moderate relationship. All other studies have found this factor associated to municipal expenditures at a comparable level of correlation.¹⁵ It should be remembered that this variable is closely associated with percentage of the population which is non-white and with the education measurement variables discussed above. These four variables, considered collectively, seem to have significant influence upon the levels of municipal expenditures in Texas.

Another variable of economic character, per cent of housing units which are owner occupied, was found to possess an entirely different association to municipal expenditures. This variable (-.26 for 1950, and -.21 for 1960) was computed to hold a negative, or inverse, relationship to municipal spending. The association is very weak but does evidence a consistent direction for

¹⁵Brazer, City Expenditures, p. 40; Feinberg, "Implications of Core-City Decline," p. 230; and Scott and Feder, Factors, p. 32.

the relationship, indicating that to a small extent, expenditures may increase as owner occupied housing decreases. A similar association was found for this variable by the study of Woo Sik Kee in 1965.¹⁶

The major type of employment existing withing a city was also measured for association to municipal expenditures. For convenience of analysis, the various classification data on employment were reduced to a simple index to indicate whether the city was preponderantly industrial or retail. From the computation of simple correlations, this index (measured at $-.53$ for 1950, and $-.57$ for 1960) indicated that there was a moderate tendency for expenditures per capita to increase (per capita) as the city becomes more industrial. This variable was suspected by Professor Hawley to possibly influence significantly the expenditures of municipal governments.¹⁷

TABLE X

LINEAR REGRESSION ANALYSIS OF SOCIO-ECONOMIC VARIABLES
OF SELECTED CENTRAL CITIES OF TEXAS
1960

Variable Eliminated	Coefficient of Determination Remainder of the Model
None	.9943
Median Family Income	.9755
Per Cent High School or More	.9775
Median School Yrs. Completed	.9759
Percentage of Owner-Occupied Homes	.9735

¹⁶Kee, "Central City Expenditures," p. 344. ($R = -.37$)

¹⁷Hawley, "Metropolitan Population," p. 105.

From the linear regression analysis (Table X), one of the socio-economic variables were found to influence strongly expenditures when they were eliminated from the model. Again, some or all of these variables may be strongly associated with variables of significant influence, a situation unable to be measured by this analysis. This is an occurrence which is highly possible.

TABLE XI

PRODUCT-MOMENT CORRELATION COEFFICIENTS OF POLITICAL VARIABLES
OF SELECTED CORE-CITIES OF TEXAS
1950 - 1960

	Reformism	Voter Participation	Party Preference
Total Expenditures for Common Functions 1950 (N-17)	.26	.04	-.56
Total Expenditures for Common Functions 1960 (N-18)	.51	.26	-.50

To measure the effects of certain political practices and institutions, an index of reformism (not used as a normative term) was designed. The characteristics of a totally "reformed" city were defined as a city using the council-manager form of government, at-large elections, and the short ballot, while a totally

"unreformed" city was defined as a city with a mayor-council form of government, ward elections, and the long ballot. The coefficients of correlation for this variable (.26 for 1950, and .51 for 1960) indicate a weak to moderate influence of the characteristics described above.

The relationship of voter participation, compared as the percentage which voted with those eligible to vote, to municipal expenditures for common functions was found to be measured by correlation coefficients of .04 for 1950, and .26 for 1960. This comparison is very spurious since the voting data compared were drawn from the state-wide elections of 1948 and 1956. The strengths of association are very weak and indicate no real effects of political participation, as measured by this factor, upon municipal expenditures.

The effect of political party preferences, measured by comparing the differences in vote for the Democratic Party from the national average in the Presidential Elections of 1948 and 1956, upon levels of municipal expenditures for their common functions is also a questionable means of testing for association. The results obtained correlation coefficients of -.56 for 1950, and -.50 for 1960. It may be that comparison of political behavior to fiscal performance for differing years does not accurately measure the party preferences for the period studied. However, any selection of national elections would have resulted in a difference

of time to the years of study. The elections which were studied were used so that national and state-wide outcomes favoring both national parties would be analyzed. The strengths of association for this variable to the fiscal performance defined are moderate and inverse. The relationships indicate that there is a tendency for municipal expenditures to increase as municipal polities vote less Democratic than the national average.

Considered as a group, only two of the political variables studied demonstrate through statistical analysis any appreciable amount of influence upon municipal expenditures for common functions in Texas. The degree of "reformism" a city possesses has a weak to moderate association, while party preferences in national elections seem to exhibit a somewhat stronger but still moderate association, and level of voter participation exerts a weak but fluctuating degree of influence upon expenditures.

Very little has been attempted by previous studies to measure the influence of political practices and behavior upon local government expenditures. An exception is an attempt by Professor John Fenton to determine whether or not the degree of party competition has an influence on governmental spending. In a paper read at the 1962 meeting of the American Political Science Association, Fenton tested the hypothesis that inter-party competition causes an increase in governmental spending directed toward the needs of lower classes of society. Using an index, he compared two-party

competition to (1) per capita welfare expenditures, less federal grants, (2) per recipient aid to dependent children payments, (3) per pupil expenditure for education, and (4) per capita general expenditures less federal grants. Fenton concluded that his findings supported his hypothesis but that the degree of association is not as strong as might be expected.¹⁸ This study is the only one known to this researcher which has attempted to measure such political variables to municipal expenditures.

TABLE XII

LINEAR REGRESSION ANALYSIS OF POLITICAL VARIABLES
OF SELECTED CENTRAL CITIES OF TEXAS
1960

Variable Eliminated	Coefficients of Determination Remainder of the Model
None	.9943
Percentage of Voter Participation - '56	.8438
Difference in Voter Participation from the National Average	.9491

Two new political variables were introduced for the linear regression analysis since the previous variables were expressed

¹⁸This study was unpublished, but the description and conclusions of the study were included in the study by Glenn W. Fisher, "Interstate Variation in State and Local Government Expenditures," p. 64.

in ordinal scales and thus not easily adaptable to comparison to interval scales of expenditures. Voter participation of each city for the national election of 1956 and the difference in that participation from the national average were each eliminated from the model. Significance was found to be strong, especially for the actual level of participation (Table XII). This finding is contradictory to the weak relationship found for political participation levels through simple correlation analysis.

In summary of the findings presented here, it appears that though the seventeen independent variables, acting together, account for more than 99% of the variation in the selected Texas cities' expenditures for their common functions, as few as five of these variables account for over 90% of that variation. Specifically, by elimination of each variable, the following variables' explanatory powers were measured to be: (1) level of property taxation -- 28.8%; (2) intergovernmental revenue received per capita -- 16.6%; total population size -- 20.2%; percentage of the population over sixty-five years of age -- 11.2%; and level of voter participation -- 15.1%.

CHAPTER IV

CONCLUSIONS

The demonstrable differences in per capita expenditures among cities in both totals and by selected functions imply that the factors which influence such variances are many and not easily identified. Some variances may possibly be ascribed to the political or social traditions of a given area, and other differences may possibly accrue from factors not yet examined by this study or any other previous research.

The completion of this study of variations in expenditures of selected central cities of Texas requires first, a comparison of findings to those of the major research in the field, notably those of Hawley, Scott and Feder, Brazer, and Bahl, to determine more clearly the specific contributions of this work. Second, this study needs to be analyzed in perspective as to its possible implications for policy-making and potential further research.

The study presented here appears to account for more of the variation in expenditures for common functions than any of the earlier studies. However, Brazer and Bahl predicted that much higher percentages of explanation in variation would normally result from studies limited to a single state, and studies of more

homogenous groupings of cities.¹ The study by Scott and Feder, also limited to cities of a single state, California, also resulted in a larger explanation of variances than have other studies.²

This study, employing seventeen independent variables and 1960 census data, found a coefficient of determination of .9943. Thus, the variables acting together account for over 99% of the variations in expenditures of the selected central cities of Texas. In comparison, the more diversified studies of Brazer and Bahl, using six independent variables each, only accounted for just over 25% and 28% of the variations in expenditures of the cities they studied, respectively.³ However, both of these studies were able to differentiate more accurately the directions of influence of their models, by indicating which categories of common function expenditures were most influenced by each of their variables. This is best exemplified in Table XIII which compares the earlier studies' findings to those of this study.

¹Brazer, City Expenditures, p. 66; Bahl, Metropolitan City Expenditures, p. 125.

²Scott and Feder, Factors, p. 23.

³Brazer, City Expenditures, p. 65; Bahl, Metropolitan City Expenditures, p. 127.

TABLE XIII

SUMMARY COMPARISON OF PRESENT STUDY WITH THOSE OF
HAWLEY, BRAZER, AND BAHL

	Hawley ^a	Brazer ^b	Bahl ^c	Eberhart
Unit of Analysis	Central Cities of SMSA's	All Cities of 25,000 Population	Central Cities	Central Cities of Texas SMSA's
Number of Cities	76	462	193	18
No. Ind. Variables	18	6	6	16
Time Period	1940	1950	1960	1960
Per Capita Expenditure Category	Coefficients of Determination			
Total	.570	n.c.	.4752	n.c.
Operating	.590	.571	.5606	n.c.
Common Functions	n.c.	.251	.2834	.9943
Police	n.c.	.260	.4741	n.c.
Fire	n.c.	.269	.3666	n.c.
Sanitation	n.c.	.095	.1476	n.c.
Highway	n.c.	.162	.2113	n.c.
Recreation	n.c.	.059	.0166	n.c.

^aAmos H. Hawley, "Metropolitan Population and Municipal Government Expenditures in Central Cities," Journal of Social Issues VII (1951), 100-108.

^bHarvey E. Brazer, City Expenditures in the United States, Occasional Paper No. 66 (New York: National Bureau of Economic Research, 1959).

^cRoy W. Bahl, Metropolitan City Expenditures: A Comparative Analysis (Lexington: University of Kentucky Press, 1969).

n.c. = not computed.

When comparing various findings for individual variables, it is difficult to draw specific conclusions for only in a few instances were sufficiently comparable variables used among the various earlier studies and this study. The two studies most easily compared to this one are those of Brazer and Bahl.

The studies of Brazer and Bahl concurred in most instances of comparable variables as both of these studies covered a wide range of interstate cities. They concurred that simply size of population of a city was of small influence upon municipal expenditures per capita, that the percentage of increase in population was also of slight significance, but that density of population was of great influence upon expenditures.⁴ These studies also found intergovernmental revenue received per capita to be a highly significant influence upon expenditures, but only the study of Bahl found the property tax per capita accounting for significant amounts of the expenditure variations.⁵ However, this latter finding was verified by the study of Scott and Feder in their study of variations in expenditures of selected cities of California.⁶

⁴Brazer, City Expenditures, pp. 66-68; Bahl, Metropolitan City Expenditures, p. 64.

⁵Brazer, City Expenditures, pp. 66-68; Bahl, Metropolitan City Expenditures, p. 64.

⁶Scott and Feder, Factors, p. 32.

The study presented here concurs with these findings except for those of total population and density of population. This study, like that of Scott and Feder which was also limited to the cities of a single state, found density of population to possess a spurious association to municipal expenditures, and thus not accurately definable in significance of influence.⁷ Total population was found to possess strong influence upon the expenditures of the Texas cities examined. Though this finding appears contradictory of the earlier studies, it is not necessarily, since several studies which isolated cities within a single state found comparable relationships.⁸

With reference to possible implications for policy-making, the findings of this study indicate that the levels of property tax per capita, intergovernmental revenue received per capita, population size, percentage of the population over sixty-five years of age, and levels of voter participation exert the most significant influences upon the per capita municipal expenditures of the selected cities of Texas. Table XIV presents a comparison of strengths of the variables examined as each variable was eliminated from the model.

⁷Scott and Feder, Factors, p. 32.

⁸Brazer, City Expenditures, pp. 45-47.

TABLE XIV
COEFFICIENTS OF DETERMINATION
18 CENTRAL CITIES OF TEXAS

Variable Eliminated	Coefficient of Determination
Property Tax (per capita)	.706
Population Size	.792
Intergovt. Revenue Received (per capita)	.828
% Voter Participation (1956)	.843
% Population over 65 Years of Age	.882
Voter Partic. Difference from Nat'l Aver.	.949
Population Density	.965
% Owner-Occupied Homes	.973
% Non-White Population	.974
Median Family Income	.975
Median School Yrs. Completed	.975
% High School or More	.977
% Increase in Population (1950-1960)	.977
Median Age	.988
None	.994

Under simple correlation analysis three other variables, economic base, degree of political reformism, and political party preference were found to influence moderately city expenditures in Texas. These variables were by the nature of their measurement, indices incapable of being included in the linear regression analysis. The three factors indicated that industrialization of Texas' cities tended to induce a rise in municipal expenditures; that the greater the number of "reformed" political institutions a city adopts the more likely are its expenditures to increase moderately; and that the less Democratic a city of Texas votes in national elections compared to the national average the greater the tendency to increase its expenditures for its common functions.

In considering these findings as possible indicators for public decision-makers, it should be remembered that many of the other variables studied and possibly many others not included in this study are strongly associated with those variables which have indicated significant influences upon expenditures. Based upon the information of this and other studies of variations of municipal finance, it may be hoped that wise fiscal decisions may be made which will enhance the urban setting and make most efficient use of resources. The urban finance problem, which may be the most perplexing of all urban problems, requires the coordination of political, physical, social, and fiscal planning. Through structural expenditure analysis the identification of problem factors in relation to certain expenditure functions may be ascertained, and thus long-range planning and coordination of political decisions may contribute to more efficient urban growth and resource utilization.

The goal of the fiscal consultant is to distribute the available revenue among a number of functions in such a manner that each functional expenditure yields satisfaction to the residents of the community without an unnecessary expense for any one function. The consultant must be aware of the structure of city expenditures and be able to identify factors which affect fluctuation in levels of public spending in order to prevent inefficient (uneconomical) levels and qualities of any particular service.

It is to aid this understanding that such studies as the one presented here are directed.

It is an acknowledged fact that urban expenditure burdens and fiscal bases are increasingly moving in opposite directions, and the central city suffers most from this serious imbalance. Some reasonable means for deciding upon efficient public service levels must be found. Financial administrators and economists can aid the central city in meeting the crisis of a dwindling tax base. A re-thinking of the role of the property tax may offer answers. For instance, if a city renewal project requires private investment, then the high property tax employed by most central cities may be acting as a deterrent to such redevelopment. The property tax in the central city area then might be revised to encourage redevelopment and thus not make potential suburban sites seem so advantageous. Bahl suggests that distribution of inter-governmental revenue, especially that of state origin, be re-formulated to take into account such variances as cost differences in serving poverty areas in relation to such services as education.⁹

Scott and Feder propose that cities prepare their functional expenditure estimates using the actual regression equations, and thus take into account the variables which significantly influence their levels of services.¹⁰ The potential uses of such research

⁹Bahl, Metropolitan City Expenditures, p. 34.

¹⁰Scott and Feder, Factors, p. 23.

are evident and public decision-makers should consider the information, with its admitted limitations, in the execution of their tasks.

With regard to potential further research, the horizon seems unlimited. There are numerous categories of comparable data constantly being developed both by public and private groups. From this particular research there are several factors which should be suggested for further analysis. First, the ratio of the central city population to its SMSA appears to possess a significant association to municipal finance in view of the growing migration to the suburbs. Second, further investigation of the dominant economic bases of cities and their relation to expenditures may offer insights to variances. Third, the political behavior and political institutions of cities need more thorough and precise testing as to their associations with municipal expenditures.

In conclusion, it should be stated that there is no easy means or completely reliable method of explaining the great range of differences in the levels of city expenditures. In most cases the unexplained variations of these expenditures range from 20% to 90%. Even when a large portion of variation is seemingly accounted for, as in this study, it is accomplished by a large number of independent variables which are inseparably associated with each other in such a manner that valid definitive statements of influence of any particular factor are at the least questionable.

However, in view of the need for more reliable means of reaching solutions to the fiscal problems of government, empirical studies need to continue to probe for possible answers to the perplexing problem of factors associated with variations in public finance.

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APPENDIX I

APPENDIX I

VARIABLE DOMAINS, DATA SOURCES, AND DEFINITIONS

DOMAIN I: MUNICIPAL EXPENDITURES (DS-1, DS-2)*

1. Per Capita Expenditures for Common Functions: as defined by the U. S. Bureau of Census to include expenditures for police and fire protection, streets and highways, sanitation, health other than hospitals, recreation, and public welfare. (Excluding capital outlays).
 - a. Police Protection: expenses incurred in preservation of law and order and traffic safety, including police patrols, crime prevention activities, police communications, detention and custody of persons awaiting trial, and vehicular inspection, excluding capital outlay.
 - b. Fire Protection: city fire fighting organizations and auxiliary services thereof, inspection for fire hazards, and other fire prevention activities, excluding capital outlay.
 - c. Streets and Highways: costs of providing streets, highways, and structures necessary for their use and maintenance, excluding capital outlay.
 - d. Recreation: cultural-scientific activities such as museums and art galleries, organized recreation, including playgrounds, parks, swimming pools and beaches, and special facilities for recreation, such as auditoriums, stadiums, and recreation piers, excluding capital outlay.
 - e. Sanitation: operating expenditures on street cleaning, sewers, and sewage and waste collection and disposal, excluding capital outlay.
 - f. Public Welfare: expenditures in aid or support of persons or members of groups deemed as needy of community support, excluding capital outlay.

DOMAIN II: FISCAL CHARACTERISTICS (DS-3, DS-4)*

2. Property Tax: level of taxation upon real and personal property expressed as a per capita figure.

*The lettered numbers refer to titles in Appendix III.

3. Intergovernmental Revenue: revenue received by the municipal government from federal, state, or other local unit of government expressed as a per capita figure.
4. Total Revenue: sum of all revenue available to the municipal government for expenditure on common functions expressed as per capita amount.

DOMAIN III: DEMOGRAPHIC CHARACTERISTICS OF MUNICIPAL POPULATION
(DS-3, DS-4)*

5. Total Population: total number of persons living within the city limits of the municipality.
6. Density of Population: number of persons living within one square mile.
7. Per Cent of Increase in Population: measurement of increase or decline in total population during a census period.
8. Per Cent of Population Which is Non-White: comparative measure of number of persons residing within the city of non-white origin, basically consisting of a majority of Negroes in Texas with only a nominal amount of Asiatics.
9. Per Cent of Population Sixty-Five Years of Age or Over: descriptive measure of that part of the population which would most likely be non-producers.
10. Median Age of the Population: descriptive measurement of the average age of the city's population.

DOMAIN IV: SOCIO-ECONOMIC CHARACTERISTICS: (DS-3, DS-4)*

11. Median Family Income: descriptive measure of the average income per family of the city's population.
12. Median School Years Completed: average number of years of formal education attained by the city's population.
13. Per Cent of the Population Which Finished High School or More: descriptive measurement of the portion of the city's population which attained the level required for admittance to higher education.

*The lettered numbers refer to titles in Appendix III.

14. Per Cent of Owner-Occupied Homes Within the City: measurement device to describe the degree of home ownership as compared to non-home owners.
15. Economic Base: index measurement to distinguish between those cities whose business activities are more industrial than retail. (0 = industrial; 1 = retail).

DOMAIN V: POLITICAL CHARACTERISTICS: (DS-3, DS-4, DS-5)*

16. Reformism: index measurement of the degree of "reform" (not used as a normative term) political institutions adopted by a city government.
 - a. Form of Government: Mayor-Council = 0; Commission = 1; Council-Manager = 2.
 - b. Type of Elections: Ward or Precinct = 0; At-Large = 1.
 - c. Type of Ballot: Long = 0; Short = 1.
17. Voter Participation: level of voter participation in national election years of 1948, 1952, and 1956, expressed as a percentage of the total eligible to vote.
18. Political Party Preference: measure of political party affiliation of city's electorate expressed as the difference in percentage voting for the Democratic Party in the Presidential Elections of 1952 and 1956 from the national average.

APPENDIX II

DATA ON THE MUNICIPALITY OF Abilene
OF Taylor & Jones COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	12.91	3.91	2.91	1.89	3.84	n.r.	0.36
1960	30.30	6.73	6.20	4.66	7.73	4.55	0.43

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	26.64	16.22	49.11
1960	28.44	2.36	47.11

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	45570	5557	71.2	4.9	6.2	27.2
1960	90368	1446	98.3	5.1	5.8	24.6

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	3162.00	11.3	44.8	54.4	1
1960	5460.00	12.1	53.4	63.4	1

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	2	1	1	4
1960	2	0	1	3

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	74.0%	30.6%
1952	88.4%	1.1%
1956	77.6%	-6.5%

n.r. = not reported.

DATA ON THE MUNICIPALITY OF Amarillo
OF Potter & Randall COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	19.56	5.52	4.12	3.08	4.52	2.32	n.r.
1960	30.31	7.38	6.67	4.41	8.45	3.32	0.08

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	20.40	0.01	33.04
1960	32.07	1.06	57.43

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	74246	3552	43.6	4.9	5.1	28.9
1960	137969	2518	85.8	5.8	5.3	25.2

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	3653.00	11.3	45.0	59.1	1
1960	5877.00	12.1	52.8	63.4	1

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	2	1	1	4
1960	2	1	1	4

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	69.4%	18.1%
1952	88.3%	6.5%
1956	73.7%	-11.0%

n.r. = not reported.

DATA ON THE MUNICIPALITY OF Austin
 OF Travis COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	16.85	4.00	3.71	2.88	3.25	2.60	0.41
1960	32.71	9.84	7.22	3.58	6.67	5.40	n.r.

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	17.81	0.17	32.08
1960	29.71	3.52	60.27

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	132549	4126	50.6	13.4	6.6	27.2
1960	186545	3776	40.8	13.3	7.6	25.1

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	3098.00	11.5	47.3	51.8	1
1960	5119.00	11.9	49.6	59.7	1

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	2	1	1	4
1960	2	1	1	4

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	63.4%	22.4%
1952	84.3%	-3.0%
1956	79.8%	5.1%

n.r. = not reported.

DATA ON THE MUNICIPALITY OF Corpus Christi
OF Nueces COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	17.46	4.22	3.39	2.44	4.87	2.11	0.43
1960	34.21	6.21	7.05	6.63	7.05	5.52	1.75

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	19.20	6.77	36.49
1960	31.76	17.07	77.89

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	108287	5037	89.0	6.6	3.7	26.3
1960	167690	4436	54.9	5.6	4.7	24.0

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	3187.00	9.8	36.3	46.6	1
1960	5221.00	10.7	43.0	62.2	1

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	2	1	1	4
1960	2	1	1	4

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	57.2%	20.4%
1952	77.3%	-6.5%
1956	67.7%	11.0%

n.r. = not reported.

DATA ON THE MUNICIPALITY OF DallasOF Dallas COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	21.39	5.12	5.03	3.34	4.78	2.62	0.50
1960	40.07	11.43	9.61	3.68	8.97	6.27	0.11

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	25.72	0.32	27.60
1960	49.80	1.00	75.19

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	434462	3879	47.4	13.2	6.1	30.9
1960	679684	2428	56.4	19.3	7.0	29.3

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	3526.00	11.6	47.4	53.0	0
1960	5976.00	11.8	48.9	59.7	0

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	2	0	1	3
1960	2	1	1	4

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	65.7%	0.7%
1952	88.7%	7.6%
1956	75.8%	-12.7%

n.r. = not reported.

DATA ON THE MUNICIPALITY OF El Paso
 OF El Paso COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	14.58	4.15	3.65	2.44	1.90	2.28	0.16
1960	23.14	6.64	5.84	2.53	4.62	3.44	0.07

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	21.10	0.03	30.13
1960	39.97	36.23	111.03

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	130485	5097	34.8	2.6	5.5	26.3
1960	276687	2414	112.0	2.7	4.8	22.8

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	3109.00	9.5	38.3	43.3	1
1960	5211.00	11.1	45.4	58.0	1

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	1	1	0	2
1960	0	1	0	1

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	70.2%	21.9%
1952	85.7%	2.6%
1956	75.6%	4.9%

n.r. = not reported.

DATA ON THE MUNICIPALITY OF Fort Worth
 OF Tarrant COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	20.31	4.75	4.78	3.29	4.59	2.59	0.31
1960	36.10	9.93	7.56	5.13	7.79	5.06	0.63

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	22.13	0.05	34.07
1960	36.34	1.32	63.65

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	278778	2975	56.9	13.3	6.6	30.1
1960	356268	2536	27.8	16.0	8.1	29.3

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	3308.00	11.1	43.3	59.4	0
1960	5484.00	11.4	45.7	65.5	0

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	2	1	1	4
1960	2	1	1	4

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	70.7%	10.2%
1952	91.3%	2.9%
1956	78.0%	-5.0%

n.r. = not reported.

DATA ON THE MUNICIPALITY OF Galveston
 OF Galveston COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	19.60	3.87	5.25	4.73	3.75	2.00	n.r.
1960	35.11	7.61	7.49	6.31	9.77	3.93	n.r.

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	21.79	1.20	36.91
1960	33.38	0.60	148.82

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	66568	8218	9.4	26.6	6.5	31.0
1960	67175	798	0.9	27.5	8.7	31.4

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	3112.00	9.1	30.4	36.5	1
1960	4698.00	9.5	33.0	41.0	1

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	1	1	1	3
1960	1	1	1	3

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	55.4%	16.9%
1952	79.2%	-10.1%
1956	68.9%	8.9%

n.r. = not reported.

DATA ON THE MUNICIPALITY OF Houston
 OF Harris COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	17.08	4.50	3.98	2.90	3.72	1.47	0.51
1960	31.70	10.22	7.43	3.50	6.74	3.79	0.02

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	27.62	0.33	36.09
1960	46.72	2.25	67.45

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	596163	3726	55.00	21.1	5.0	29.4
1960	938219	2860	57.4	23.2	5.6	27.5

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	3389.00	10.4	37.8	50.1	0
1960	5902.00	11.3	45.2	60.4	0

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	0	1	1	2
1960	0	1	1	2

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	56.8%	-1.9%
1952	79.2%	2.5%
1956	71.0%	-4.1%

n.r. = not reported.

DATA ON THE MUNICIPALITY OF Laredo
OF Webb COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	9.79	2.11	2.73	2.61	1.88	0.27	0.19
1960	20.96	3.43	5.09	8.08	3.81	0.12	0.43

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	15.57	13.33	34.31
1960	16.73	0.07	32.88

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	51910	3845	32.2	0.2	5.2	23.1
1960	60678	4495	16.9	0.4	6.5	21.3

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	1587.00	5.5	17.5	57.6	1
1960	2935.00	6.4	24.9	59.4	1

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	0	0	0	0
1960	0	0	0	0

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	46.8%	31.1%
1952	57.3%	-14.2%
1956	49.1%	35.1%

n.r. = not reported.

DATA ON THE MUNICIPALITY OF LubbockOF Lubbock COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	13.02	3.72	3.52	1.19	3.04	1.38	0.17
1960	31.46	9.06	6.71	2.52	6.70	6.07	0.40

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	16.77	0.04	23.39
1960	28.66	0.40	41.83

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	71747	4220	125.2	8.7	4.1	25.7
1960	128691	1716	79.4	8.1	4.9	23.5

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	3328.00	11.6	47.5	50.7	1
1960	5582.00	11.9	49.6	60.9	1

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	2	1	1	4
1960	2	1	1	4

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	67.5%	23.5%
1952	85.7%	2.8%
1956	75.7%	-6.6%

n.r. = not reported.

DATA ON THE MUNICIPALITY OF Midland
OF Midland COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.
1960	32.09	8.51	7.98	3.62	7.65	4.33	n.r.

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	n.r.	n.r.	n.r.
1960	25.85	4.33	69.69

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.
1960	62625	2735	188.4	10.0	2.7	25.0

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	n.r.	n.r.	n.r.	n.r.	n.r.
1960	7094.00	12.5	62.7	69.2	1

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	2	1	1	4
1960	2	1	1	4

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	57.0%	3.6%
1952	82.3%	15.9%
1956	65.7%	-16.6%

n.r. = not reported.

DATA ON THE MUNICIPALITY OF Odessa
 OF Ector COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	17.67	5.47	5.44	2.51	4.25	n.r.	n.r.
1960	28.45	7.57	10.21	4.02	6.64	n.r.	0.01

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	17.12	0	40.41
1960	29.71	0.51	51.43

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	29495	4916	208.1	3.4	2.0	26.8
1960	80338	5117	172.4	5.8	2.4	24.2

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	4186.00	10.8	37.7	55.1	1
1960	6210.00	11.6	46.7	68.3	1

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	2	0	1	3
1960	2	0	1	3

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	54.4%	26.0%
1952	69.3%	5.9%
1956	58.6%	-6.2%

n.r. = not reported.

DATA ON THE MUNICIPALITY OF San AngeloOF Tom Green COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	10.33	2.43	2.12	1.60	3.14	1.04	n.r.
1960	25.93	6.65	6.02	4.15	4.49	3.38	1.24

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	10.97	0.33	21.25
1960	26.86	1.67	46.35

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	52093	1809	101.9	5.8	6.2	27.8
1960	58815	1980	12.9	5.4	8.8	27.4

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	2855.00	10.4	38.8	61.2	1
1960	4650.00	10.9	42.2	69.8	1

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	2	1	1	4
1960	2	1	1	4

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	66.5%	24.8%
1952	84.8%	7.4%
1956	76.4%	-3.6%

n.r. = not reported.

DATA ON THE MUNICIPALITY OF San AntonioOF Bexar COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	12.25	2.38	3.22	2.53	2.63	1.49	n.r.
1960	24.20	7.87	4.69	5.32	3.68	2.35	0.29

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	20.10	0.08	27.31
1960	26.64	1.09	38.33

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	408442	5877	60.9	7.2	6.2	27.4
1960	587718	3662	43.9	7.4	7.1	25.2

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	2685.00	9.0	33.3	56.4	1
1960	4691.00	9.6	36.8	63.6	1

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	1	1	1	3
1960	2	1	1	4

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	64.8%	4.7%
1952	88.0%	1.2%
1956	78.3%	4.0%

n.r. = not reported.

DATA ON THE MUNICIPALITY OF TylerOF Smith COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	17.33	2.98	2.96	3.47	5.79	1.72	0.41
1960	31.20	6.62	6.52	5.76	7.47	3.81	1.02

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	32.86	11.60	54.63
1960	28.44	1.66	49.21

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	38968	3093	37.8	26.0	6.1	29.6
1960	51230	2799	31.5	22.3	7.6	29.2

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	3032.00	11.0	42.1	56.1	1
1960	5478.00	12.1	52.6	63.3	1

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	2	1	1	4
1960	2	1	1	4

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	62.7%	7.6%
1952	87.0%	1.3%
1956	75.0%	-8.9%

n.r. = not reported.

DATA ON THE MUNICIPALITY OF Waco
 OF McLennan COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	13.22	3.16	3.61	2.74	2.81	0.90	n.r.
1960	29.50	6.52	6.80	5.66	6.98	3.39	0.15

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	18.36	0.09	24.07
1960	30.26	1.31	48.94

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	84706	3258	51.3	17.3	7.4	29.2
1960	97808	2622	15.5	18.5	10.1	29.6

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	2822.00	10.1	36.2	54.2	1
1960	4859.00	10.7	41.4	61.9	1

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	2	0	1	3
1960	2	1	1	4

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	60.0%	29.9%
1952	86.8%	-8.7%
1956	78.1%	1.5%

n.r. = not reported.

DATA ON THE MUNICIPALITY OF Wichita Falls
 OF Wichita & Archer COUNTY, TEXAS

I. PER CAPITA EXPENDITURES FOR COMMON FUNCTIONS:

	TOTAL	POLICE	FIRE	HIGHWAYS	SANITATION	RECREATION	WELFARE
1950	12.87	3.38	2.78	2.05	3.20	1.40	0.06
1960	24.38	6.19	6.00	2.61	6.56	2.94	0.08

II. INDEPENDENT VARIABLES:

A. FISCAL: (PER CAPITA)

	PROPERTY TAX	INTERGOV'T REVENUE	TOTAL
1950	9.94	0.03	24.03
1960	22.51	0.13	59.48

B. DEMOGRAPHIC:

	POPULATION	DENSITY	% INC.	% NON-WHITE	% 65 YRS.	MEDIAN AGE
1950	68042	4826	50.8	8.8	4.9	25.0
1960	101724	2527	49.5	8.4	6.8	26.0

C. SOCIO-ECONOMIC:

	MEDIAN FAM. INCOME	MEDIAN SCHOOL YRS. COMP.	% HIGH SCHOOL OR MORE	% OWNER OCC. HOMES	ECONOMIC BASE
1950	3269.00	11.1	44.2	54.0	1
1960	5451.00	11.8	48.4	60.0	1

D. POLITICAL:

REFORMISM

	FORM OF GOVT.	ELECTION TYPE	BALLOT TYPE	INDEX TOTAL
1950	2	1	1	4
1960	2	1	1	4

	VOTER PARTICIPATION	DEM. PARTY DIFFERENCE FROM NAT'L AVERAGE
1948	70.2%	27.5%
1952	89.8%	-7.7%
1956	80.3%	3.9%

n.r. = not reported.

APPENDIX III

APPENDIX III

DATA SOURCES

- DS-1. U. S., Department of Commerce. Bureau of the Census. Compendium of City Government Finances in 1950. Washington, D. C.: Government Printing Office, 1951.
- DS-2. U. S., Department of Commerce. Bureau of the Census. Compendium of City Government Finances in 1960. Washington, D. C.: Government Printing Office, 1961.
- DS-3. U. S., Department of Commerce. Bureau of the Census. County and City Data Book, 1952 (A Statistical Abstract Supplement). Washington, D. C.: Government Printing Office, 1952.
- DS-4. U. S., Department of Commerce. Bureau of the Census. County and City Data Book, 1962 (A Statistical Abstract Supplement). Washington, D.C.: Government Printing Office, 1962.
- DS-5. Texas Almanac, 1958-1959. Dallas, Tex.: A. H. Belo Corporation, 1957.

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