THE COMPOSITION OF THE MANAGEMENT NEGOTIATING TEAM AS A DETERMINANT OF OHIO MUNICIPAL EMPLOYEE WAGE OUTCOMES

by

Deborah D. Gross

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Stanley D. Guzell Jr. May 11, 1981

Adviser Date

Leon Rand June 3, 1981

Dean of the Graduate School Date

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Stanley D. Gryll Jr. — May 11, 1981
Adviser — Date

Terry F. Buss — May 11, 1981
Adviser — Date

Kasuganti R. Rao — May 11, 1981.
Adviser — Date

Leon Haney — June 3, 1981
Dean of the Graduate School — Date

YOUNGSTOWN STATE UNIVERSITY

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ABSTRACT

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Deborah D. Gross
Master of Business Administration
Youngstown State University, 1981

The average citizen and his elected government representatives have very little knowledge of the impact of public sector collective bargaining on their lives. Though there is no scarcity of material written about public sector labor relations, there is a lack of empirically-based research concerning the effects of unionism and public employee wages. This information is especially relevant and urgent today when so many cities face financial disaster. In times of rapidly escalating costs, both for individuals as well as state and local governments, the need for additional data regarding determinants of public employee wages is obvious. Particularly important is better data regarding the wage impacts of variables within the scope of control of the public sector manager.

The aim of this research project is to determine if the composition of the management negotiating team has an effect on the outcome of the union's wage demands. The literature indicates that there is a relationship, but the supporting evidence is weak and tends to be anecdotal. We

will seek to test this alleged relationship using a sample of Ohio cities. Our observations will cover a period of four years during the mid-1970s. We will evaluate the compensation (wages plus fringe benefits) paid to police and firefighters. Our hypothesis is that higher union wages are a result of decentralized authority and dispersed power of the management negotiating team.

Winston Churchill, in describing Russian foreign policy, called it "a riddle wrapped in a mystery inside an enigma". The same description could be given to the process of modern labor/management relations in many cities. This paper seeks to unravel some of the mystery by shedding light on how the makeup of the management negotiating team affects wage outcomes for municipal employees. Though many different factors contribute to the wages earned by public sector employees, this study will focus on the significance of policy variables, those over which management does have some control.

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Special thanks are also given to Dr. Kasaganti Rao and Dr. Terry Buss who, despite busy schedules, agreed to serve on this thesis committee. Mary Mislay, who typed this project, worked many long hours. Her help in editing, as well as typing, has been much appreciated.

CHAPTER I

INTRODUCTION

Background of the Problem

In the United States, the municipal budgetary process has long been characterized by uncertainty. There are many reasons for this--legal constraints imposed by the state, limited or inadequate staff and resources, an explosive rate of inflation, and fluctuating or inaccurate revenue estimates.[1] In the midst of all this confusion, a new factor has emerged, one that has far-reaching consequences for local governments--the rise of public employee unions.

According to a 1980 report by the Ohio Municipal League, union membership, both private and public sector, now stands at 22.8 million. This represents 26.6% of the total work force in the U.S. However, membership as a percentage of the total private work force is on the decline. The "new frontier" of unionism is the public sector.[2] Nationwide, by 1976, one out of every three public employees

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[1]Richard C. Kearney, "Municipal Budgeting and Collective Bargaining: The Case of Iowa," Public Personnel Management, March/April 1980, p. 112.

[2]Ohio Municipal League, An Introduction to Ohio Municipal Labor Relations (Columbus, Ohio: Report of the League, 1980), p. 2.

belonged to an employee organization. In contrast, the private sector had a membership rate of only one in four.[3] As of 1970, over 75% of all public employees worked for the approximately 90,000 separate state or local governments in the U.S.[4]

Over the years the role of the public sector employer has changed. Traditionally, governments have held a rather passive and paternalistic attitude towards employees. A century ago, government held full reign over all matters pertaining to wages, hours, and conditions of employment; labor issues were passed over in this unilateral decision-making system. Generally, government employees had received appointments during the early "spoils systems" or were hired because of their expressed dedication to the community. Employees were expected to be untiring servants of the constituency, and if that meant a lesser salary than their counterparts in the private sector, so be it. Such was "the price paid for job security and work value."[5]

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[3]Felix A. Nigro and Lloyd G. Nigro, The New Public Personnel Administration (Itasca, Ill.: F. E. Peacock Publishers, Inc., 1976), p. 11.

[4]Michael H. Moskow and J. Joseph Loewenberg, Collective Bargaining in Public Employment, ed. Clifford Koziara (New York: Random House, Inc., 1970), p. 80.

[5]Joseph D. Levesque, "Municipal Strike Planning: The Logistics of Allocating Resources," Public Administration Review, vol. 34, March/April 1974, p. 62.

The public sector did not break away from this authoritarian structure until about two decades ago. The state of Wisconsin led the way in 1959 with the first legislation requiring the public employer (in this case, municipal governments) to bargain collectively with public employees.[6] Federal employees were given the right to organize in 1962 with the signing of President John Kennedy's Executive Order #1088. This order established a framework and process for collective bargaining, although the Wagner Act, twenty-seven years previously, had established the principle that private sector employees should have the right to bargain collectively.[7]

By 1979, all but eleven states had enacted statutes authorizing some sort of public sector collective bargaining. Those which have not enacted statutes include Arizona, Arkansas, Colorado, Louisana, Mississippi, New Mexico, Ohio, South Carolina, Utah, Virginia, and West Virginia.[8]

Each of the states with statutes has handled public sector labor relations in its own way, resulting in a hodge-podge of common law, executive orders, case law, attorney general opinions, municipal ordinances, and civil service rules.[9] For example, here in the midwest, state collective

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[6]Nigro and Nigro, p. 10.

[7]Levesque, p. 62.

[8]Ohio Municipal League, p. 6.

[9]Ibid.

bargaining statutes cover nearly all municipal employees in Michigan, Minnesota and Wisconsin. Firefighters are singled out for collective bargaining in Illinois. In Ohio, state laws do not require the employer to confer with unions, but this lack of statute has not prevented Ohio localities from negotiating with employee organizations. Section 4117.01 of the Ohio Revised Code states that these organizations have the right to express or communicate "a view, grievance, complaint, or opinion on any matter related to the conditions or compensation of public employment".[10]

What then exactly is collective bargaining? One source explains that a collective bargaining relationship "is one in which employer and employee representatives determine issues affecting employees".[11] The Ohio Municipal League has a more descriptive explanation of collective bargaining:

> Collective bargaining is usually defined as a method-i.e., a process of determining wages, hours, and conditions of employment by the negotiation between representatives of the employer and union representatives of the employees of a bargaining unit. This term may also be defined as a contest-i.e., a competitive struggle between representatives of management and members of the work force. Anyone who is or will be personally involved in collective bargaining is well advised to consider it a contest.[12]

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[10]David T. Stanley and Carole L. Cooper, Managing Local Government Under Union Pressure (Washington, D.C.: The Brookings Institution, 1972), p. 12.

[11]Moskow and Loewenberg, p. 226.

[12]Ohio Municipal League, p. 12.

This "contest" of collective bargaining is still a relatively recent phenomenon, but nevertheless an important one. Today employee compensation typically consumes 60%-90% of a city's total operating budget. The problems associated with such fiscal demands as well as the continued growth of unions, collective bargaining, and more aggressive union behavior has created unprecedented difficulties for governments on all levels.[13] There seems to be no end in sight, either. Public sector employees feel unionization gives them a measure of control over their hours, wages, and working conditions; it offers security and fellowship. Employees join unions for economic security, job satisfaction, grievance procedures and fair treatment, and will continue to do so.[14] Nigro and Nigro sum up the variety of reasons for joining unions into one basic explanation--the public employee's new conception of his role:

> He sees no reason why he should be expected to tolerate pay and working conditions inferior to those of comparable workers in the private sector. He wants to be treated with dignity, which means that he should have a voice in the determination of personnel policies. In the vast government machine, the union has proved an effective instrument for gaining such a voice.[15]

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[13]Stanley and Cooper, p. vii.

[14]Ohio Municipal League, p. 12.

[15]Nigro and Nigro, p. 11.

Public Versus Private Sector Employers

A government's contract with its employees is similar in several respects to that of the private employer. Both shop in the employment market and must pay enough to obtain and keep qualified workers. Both the private and the public employer have to convince their workers to accept certain conditions and limitations--unusual hours, hazardous or disagreeable duties, the keeping of employer secrets. Both types of employers are concerned with meeting basic human needs of security, recognition, affiliation, and advancement.[16]

Despite the similarities, there are many distinct differences between public and private sector employers. In fact, one could say public sector employment has many unique aspects that are important if one is to understand the collective bargaining process.

In the first place, management in the public sector is highly visible at most levels, according to Moskow and Loewenberg. The person ultimately responsible for labor relations in the public sector is undoubtedly an elected official. As such, this person is exposed to media examination and constant public interest. Plans and operations of public managers are likely to be open to inspection.[17]

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[16]Stanley and Cooper, p. 17.

[17]Moskow and Loewenberg, p. 207.

This contrasts vividly with the secrecy in which many private organizations shroud themselves; the decision-making processes of the private employer often aren't known until after the fact, whereas the public watches the wheels of government grind on daily with the evening news.

Another difference between public and private employers is the flow of authority. In the public sector, the people hold the authority and it flows upward to the elected representatives. Public managers then must be responsive directly to the people, but this is certainly not the case with private employers. Management is responsible to the board of directors and stockholders, but not the community per se. Authority flows downward from the top.[18]

Another important difference between public and private employers is that labor relations has an economic foundation in industry but a political base in government. Stanley and Cooper tell us that the private employer must stay in business by selling sufficient goods or services to pay his employees. Unions may make demands, but not usually to the extent that the employer is driven out of business or forced into sharp curtailment of operations. A strike is seen as a test of economic strength or "staying power" and is perfectly legal.

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[18] Ibid., p. 209.

Governments, however, must stay in business, not by selling goods, but by collecting sufficient taxes or fees from the public. Their unions do not hesitate to make extra demands, demands which have to be paid for by the taxpayers (some of whom may also be city employees). When it occurs, a strike becomes a complex political issue involving public indignation over the illegal curtailment of services, pressure on officials to settle quickly, sympathy for legitimate needs of public employees and problems associated with financing an agreement.[19]

The organization of a private enterprise is basically for one purpose--maximizing profits. Although internal policy disputes may occur, the hierarchial structure of a business organization permits it to make final, binding decisions. Thus a private employer is more able to resist union demands than is a political subdivision.

Public employers, of course, are not profit oriented (though they must be concerned with operating efficiently). The public employer is in business to provide services for its taxpayers. When a labor dispute arises, the public sector can rarely present a united front due to the division of power that characterizes state and local governments.[20]

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[19]Stanley and Cooper, p. 19.

[20]Harry H. Wellington and Ralph K. Winter, Jr., The Unions and the Cities (Washington, D.C.: The Brookings Institution, 1971), p. 63.

This checks and balances structure dates back to around 1820 and apparently stems from the traditional American regard for the federal system.[21] Wellington and Winter state that the "principle purpose of these structures seems to be to encourage division and weakness, or at least to prevent ominpotence".[22] Though this divided allocation of power may be necessary in the public sector, it is obvious that such a system is not a planned part of the private sector. Therefore, labor/management relations in the public sector has a different character.

This fragmentation of decision-making authority is one of the most significant differences between the public and private sectors, and is the major focus of this research study. The problem has been dealt with by a number of different authors whose findings will be summarized in the following section.

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[21] Ibid, p. 20.

[22] Ibid, p. 21.

CHAPTER II

REVIEW OF THE LITERATURE

The review of the literature will include six sections with a summary in the final section. First, we will examine relevant literature about public sector collective bargaining and what weaknesses are inherent in the findings. We will next look at specific research on the makeup of the negotiating team, focusing on the role of the chief executive, the role of city council, and the role of the specialist in negotiations. Various authors have various reasons for suggesting who should sit on the management team, and we will examine some of these theories. The last section will briefly summarize our review of the literature.

Weaknesses in the Relevant Literature

As stated above, it is a simple matter to obtain literature on the subject of public sector unionism. Judging by the number of volumes published, and the number of times periodicals and newspapers deal with the topic, public sector labor relations is a very popular issue. Because this topic is written about so frequently, it is logical to assume that much has been "done" in this area, that many answers to labor relations questions exist. This unfortunately is not so. Though there is no scarcity of people willing to philosophize

on public sector unionism, there is a great scarcity of empirically based research in the field.

The research that does exist approaches the topic in a variety of ways. One common assumption held by many authorities is that unions probably do "contribute positively" to employee wages.[23] Although the precise magnitude of this influence is difficult to judge, Methe and Perry make this assertion after reviewing research done by twenty different authors from the period of the 1960s and early 1970s. Smith and Lyons feel that the wage differential for union and non-union government employees is not very large. According to their findings, the average "union impact" on salary increases appears to be about 5%.[24]

Taking this factor into account, there are numerous other variables that may explain the relationship between unionization and public sector wage expenditures. Bent and Reeves indicate that the wage rate for public employees is determined "by the interplay of a host of labor-market variables".[25] Each market situation is influenced by

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[23]David T. Methe and James L. Perry, "The Impacts of Collective Bargaining on Local Government Services: A Review of Research," Public Administration Review, vol. 4, July/August 1980, p. 369.

[24]Russell L. Smith and William Lyons, "The Impact of Fire Fighter Unionization on Wages and Working Hours in American Cities," Public Administration Review, no. 6, Nov./Dec. 1980, p. 568.

[25]Alan E. Bent and T. Zane Reeves, Collective Bargaining in the Public Sector (Menlo Park, Cal.: Benjamin/Cummings Publishing Co., 1978), p. 105.

variables unique to it. Some of the important factors listed by the authors include government policy making, lack of competition from the private sector, ability and/or willingness of a governmental unit to pay, spillover effects, and the presence or absence of monopsony (a buyer monopoly).[26] Smith and Lyons' study of firefighters states that important independent variables to be considered include employee supply, extent of unionization, city government form (mayor/council, city manager/council, etc.), demand for services, and ability of cities to pay.[27] Wellington and Winter are also concerned with the extent to unionization; other relevant factors include size of the city, number of employees who are potential union members, homogenity of the political entity's population, attitude of the community towards collective bargaining, and lastly, the nature and history of the bargaining relationship (militancy, for example).[28]

Some problems exist with these and other variables that have been studied. Most of them cannot be quantified. Many of them are abstract--ability to pay, extent of unionization, community attitude towards collective bargaining, etc. Each researcher has defined the variables in his or her own way so that the generalizability of some of these studies is in question. Ehrenberg and Goldstein assert that

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[26] Ibid., p. 106.

[27] Smith and Lyons, p. 569.

[28] Wellington and Winter, p. 57.

much of the literature on public sector labor relations consists of "anecdotal evidence, unsupported assertion, and loose generalization".[29]

Likewise, Guzell, in his review of pertinent literature from 1960-1979, lists general weaknesses often found. Among the more important deficiencies noted are a severe lack of primary data, findings based upon a single year or findings based on the nation's largest cities only, use of salaries alone as a dependent variable, ignoring fringe benefits, the failure to adequately deal with indirect wage effects (spillovers), and the exclusion of "intuitively significant" variables such as local labor history, local bargaining ordinances, etc.[30]

In one part of his study, Guzell gives a list of twenty-four variables frequently used to explain public sector wage variations, some of which have already been cited. "The outstanding feature which all these variables share (in addition to low explanatory power) is their near-complete lack of policy relevance."[31] Variables such as ability

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[29]Ronald H. Enrenberg and Gerald S. Goldstein, "A Model of Public Sector Wage Determination," in Public Sector Labor Relations by David Lewin, Peter Feuille, Thomas Kochan (n.p.: Thomas Horton and Daughters, 1977), p. 379.

[30]Stanley D. Guzell, Jr., "Municipal Bargaining Laws as Determinants of Municipal Public Employee Wages in Ohio" (Ph.D. dissertation, University of Pittsburgh, 1980), pp. 22-28.

[31]Ibid., p. 14.

of a city to pay or extent of unionism are factors which cannot be modified by administrators. Public management personnel desiring to know how best to bargain with local unions need to understand the variety and complexity of relevant factors, as well as the fact that they can do little about a substantial proportion of them.

In contrast, the makeup of the management negotiating team is a policy variable over which there can be some control. If specific negotiators or combinations of negotiators could be shown to have systematic effects on union wage outcomes, management might be able to avail itself of this information to bargain more effectively with public sector unions. Admittedly, the composition of the negotiation team may play a minor role in the outcome of union wage demands. However, a little control over a minor variable is more relevant to decision-making than no control over a major one.

Research on the Management Negotiating Team

Keeping in mind the previously mentioned inadequacies, we turn our attention to the variety of authors who have written about the composition of the management negotiating team. One does not have to read extensively on the subject before discerning that there are many contradictions in the literature. There is no universal agreement on who should participate in the management negotiations. Because of this lack of agreement and because of the relative newness of public sector unionism, the typical municipality

lacks the experience needed in handling public sector labor relations.[32]

According to a 1978 labor relations report done for the Northeast Ohio Areawide Coordinating Agency, "there is no clear prevailing policy among Northeast Ohio cities as to whether the council or mayor should conduct negotiations.[33] Furthermore, in the majority of cases, the mayor, council or both do conduct negotiations; in 8% of the cities surveyed, labor relations professionals or trained staff members were used.[34]

Lewin, Feuille and Kochan emphasized the lack of agreement in public sector labor relations:

> There is no objective formula by which a city government can decide how much of a voice in labor relations matters shall be given to the mayor, the city council, the city attorney, the civil service commission, and so on.[35]

While both the public and private sectors share the difficult problem of determining the bargaining unit, the

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[32]See, for example, Stanley and Cooper, p. 5 and Wellington and Winter, p. 47.

[33]John Beeker, "Practioner's Report: Labor Relations Policies and Practices Among Northeast Ohio Cities and Villages," Municipal Labor Relations in Northeast Ohio (preliminary version of unpublished thesis, Kent State University, February, 1978), p. 30.

[34]Ibid.

[35]David Lewin, Peter Feuille, and Thomas Kochan, Public Sector Labor Relations: Analysis and Readings (n.p.: Thomas Horton and Daughters, 1977), p. 3.

public sector alone faces the frustrating question of which branch or branches of local government should represent management.[36]

Bent and Reeves tell us that who actually speaks for public sector management varies from jurisdiction to jurisdiction. Negotiations can be carried out by personnel officers, labor relations experts or a specific administrator. Sometimes even the civil service commission becomes involved.[37] In Kearney's 1980 study of Iowa cities, diverse approaches to composing a management team were noted, with the personnel director playing a leading role in most communities.[38]

Several researchers have dealt with the effect of local government form on the structure of the management team. Burton explains that the dominance of the executive or legislative branch varies from city to city; this dominance primarily depends on whether the city has a mayor/council, council/manager, commission or some other form of government. The relative power of the executive or the legislative branches fluctuates within each of the forms of

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[36]Wellington and Winter, p. 117.

[37]Bent and Reeves, p. 57.

[38]Kearney, p. 108.

government.[39] Lyons and Smith assert that mayor/council cities are characterized by more "diffuse decision-making structures" than is true for council/manager cities.[40] Wellington and Winter also deal with the different forms of government including the "strong mayor" and "weak mayor" form. In each government form, administrative authority rests with either the legislative or the chief executive (mayor or city manager). The commission plan is an exception to this, however, because in this form of government there is no separation of power; the commission both administers and legislates.[41]

Moskow and Loewenberg have concluded that the composition of the bargaining team varies according to the size of the city. The roles played by the members of the management team are determined by the power of the departments and the department head, the history of participation, and the relative strength of the chief official as well as the legislature.[42]

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[39]John Burton, "Local Government Bargaining and Management Structure," Industrial Relations, vol. II, May, 1972, p. 124.

[40]Lyons and Smith, p. 570.

[41]Wellington and Winter, pp. 118-120.

[42]Moskow and Loewenberg, p. 108.

A 1980 report from the Ohio Municipal League suggests that the size of the city's bargaining team should be held to a minimum. The only persons absolutely necessary are 1) a financial person who knows the city's fiscal affairs and how to cost-benefit proposals, and 2) a management/supervisory person who understands the function of the members of the bargaining unit. The city's legal advisor should be available whenever necessary, but is not required to be a member of the negotiating team.[43]

Shaw and Clark sum up this lack of a unified approach to public sector bargaining:

> All too often the responsibility for collective bargaining has not been fixed with any degree of certainty, a circumstance which promotes at least 2 unsatisfactory results. First, because responsibility for collective bargaining is not explicitly assigned, no individuals are ascribed the specific obligation to promote and protect management's interests. Second, since labor relations is not recognized as a distinct function, the individual upon whom this responsibility is thrust is still expected to perform their normal duties, a situation which is often less than satisfactory. The need to establish labor relations as a separate function and to develop the competence of the individuals who staff this function must have a high priority if public employers expect to meet the challenge of militant unionism.[44]

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[43]Ohio Municipal League, p. 14.

[44]Lee C. Shaw and Theodore Clark, Jr., "The Practical Differences Between Public and Private Sector Collective Bargaining," UCLA Law Review, vol. 19, 1972, as cited in U.S. Department of Transportation, The Impact of Labor-Management Relations on Productivity and Efficiency in Urban Mass Transit (Washington, D.C.: March, 1979), p. 78.

Role of the Chief Executive

Again there is a divergence of opinion in the literature as the appropriate role of the chief executive. Moskow and Loewenberg state that the mayor of a city is rarely on the municipal bargaining team, but may have a significant effect on negotiations anyway.[45] In Ohio, however, there are many cities in which the chief executive does serve as a member of the negotiating team. The likelihood of such a situation occurring increases as the city size decreases. The reasons for this are related to staff and fiscal limitations. It is preferable, where possible, for the chief executive to remain away from the bargaining table as his presence "can distort" the bargaining process.[46] Presumably this means that the chief executive, by remaining outside the negotiations, can provide a more objective, unemotional appraisal of problems that come up. The chief executive does have the responsibility for putting together the bargaining team and selecting a chief negotiator, if someone other than he is to be the group spokesman. The goal of every chief executive should be to have a staff member that is a qualified negotiator on his staff.[47]

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[45] Moskow and Loewenberg, p. 109.

[46] Beeker, p. 13.

[47] Ibid.

Beeker also states that it is best that the chief executive delegate responsibility for bargaining to a trained staff member or outside consultant with labor relations experience. He goes on to say that the actual conduct of negotiations does fall within a mayor or city manager's responsibilities.[48]

Prevailing management opinion seems to be that the chief executive should not be involved in all details of collective bargaining, but be available to contribute expertise on fiscal and personnel problems. Holders of a different viewpoint point out, however, that if the chief executive is also the chief negotiator, there are some definite advantages. Questions can be answered quickly and authoritatively, which saves time and avoids lower level maneuvering among various city offices. The chief executive can commit the government to decisions which are subject to review only by the legislature.[49] The fact that the chief executive is the only person with accountability to all citizens, lends additional support to his role in collective bargaining.

Burton makes a strong case for assigning responsibility to the executive rather than the legislative branch. Cities with only minor experience in bargaining with decentralized authority have almost invariable reacted by

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[48] Ibid., p. 39.

[49] Stanley and Cooper, p. 55.

attempting to reduce the decentralization. The most important factor which has lead to this centralization of authority within the executive is the "need to coordinate managements' position on all issues".[50]

Cities with the council/city manager form of government vary in the amount of responsibility given to the city manager in collective bargaining. (In the city manager form of government, the manager is the chief administrative officer of the city, serving under the direction and supervision of council.) The city manager's role can range from that of chief negotiator to total non-involvement. However, since the city manager will be extensively involved in administering any collective bargaining agreement, it is necessary that he have effective input into the negotiation process.[51] In order to be effective, the need for competence (experience) in contract negotiations is needed. A city manager who is unfamiliar with the fundamentals of collective bargaining can seriously erode the city's position in negotiations.[52]

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[50] Burton, p. 131.

[51] Peter A. Veglahn and Stephen L. Hayford, "An Investigation into the City Manager's Role in the Collective Bargaining Process," Journal of Collective Negotiations, vol. 5, 1976, p. 290.

[52] Ibid., p. 295.

Role of the City Council

In many cities across the country, the city council is regularly involved in collective bargaining with union representatives seeking higher wages. Beeker's study of Northeast Ohio tells us that council members, being municipal policy makers, are in a good position to establish guidelines for settlement of a labor agreement.[53] The legislative branch has the final authority to legitimize a financial settlement, as they have ultimate responsibility for the resources of the city.[54]

But according to the Ohio Municipal League, the fact that council is a maker of final decisions, makes it unwise for any council member to sit at the bargaining table. Council's role, both before and during negotiations, is to assist the city administration in development of financial guidelines and policy positions. If a council member actively participates in negotiations, it is likely that he or she will become the target of union attention in a strategy of "divide and conquer". There is also the possibility that involvement of council members can destroy the credibility and authority of the administrative staff. It can ensure that the unions, in an effort to play one side against

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[53] Beeker, p. 39.

[54] Bent and Reeves, p. 57.

another, will seek to involve the council in future negotiations.[55]

Burton feels that it is desirable to take responsibility for contract negotiations away from the city council and put it in the hands of the executive branch. The primary reason for this is that most legislators are part-time officials who lack both the time and skill needed to conduct negotiations; this means that council members are ineffective in the role of negotiator. Burton goes on to say that the reliance on city council members to represent the government in labor relations occurs primarily in municipalities that lack executive budgets and/or a chief executive.[56]

As a possible solution to the power struggle between city council and the chief executive, Bent and Reeves suggest the formulation of a special bargaining team. This team would have the authority to speak for both the executive and legislative branches. It would facilitate planning since all parties could negotiate from authority. Furthermore the unions would be prevented from their often used "divide and conquer" tactic.[57]

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[55] Beeker, p. 12.

[56] Burton, pp. 132-134.

[57] Bent and Reeves, p. 131.

Role of the Specialist

Due to the complexities involved with deciding who should negotiate for management, more and more cities are deciding to avail themselves of the services of a specialist. This person may have various titles--director of labor relations, labor negotiator, etc. These chief negotiators may have a variety of backgrounds--they may come from city council, the city's personnel or law department, the labor movement, or private sector labor relations. In his capacity as the city's chief negotiator, he may require assistance from various departments. The chief negotiator cannot be expected to know the details of every department's operations, and so must draw on the general knowledge of the head of each individual department, as well as the specialized knowledge of the finance, legal, and personnel departments.[58] Stanley and Cooper concur with this supportive role of department heads. Though they may sometimes be formal members of the city's negotiating team, their most frequent role is to back up the management negotiators with information about the effects of changes in pay, fringe benefits and working conditions in their departments.[59]

The lack of collective bargaining experience on the part of many chief executives means that outside consultants

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[58]Moskow and Loewenberg, p. 108.

[59]Stanley and Cooper, p. 141.

with labor relations backgrounds are often being used. Veglahn and Hayford cite two areas in which outside expertise is most helpful--1) helping management formulate and achieve its bargaining goal in highly complex or technical areas and 2) during the early stages of the city's collective bargaining experience. The extent of involvement of an outside negotiator is sometimes limited by the fact that as an outsider, the negotiator would lack knowledge of the bargaining priorities of the city and strategies necessary for city officials to follow.[60]

The Ohio Municipal League Manual lists three options in the selection of a chief negotiator for the city--a staff negotiator, a staff negotiator working with an outside consultant-advisor, or a professional consultant-negotiator from outside the city administration. No matter what the option is chosen, the League feels qualities of "integrity, candor, knowledge of labor relations and experience" are essential.[61]

Smaller cities can effectively use the services of one management negotiator, but in larger cities, an entire labor relations agency may be required. In either case, the aim is to centralize authority and therefore, develop expertise in bargaining with the use of full-time personnel.[62]

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[60] Veglahn and Hayford, p. 294.

[61] Ohio Municipal League, pp. 13-14.

[62] Burton, p. 131.

Dispersion of Power and Fragmentation of Authority

By now, it should be evident that one of the major differences between the public and private sectors lies in the area of fragmentation of decision-making authority and dispersion of power. "Unions complain about their inability to deal, as in private enterprise, directly with the source of 'yes' or 'no' final authority"[63], but the source of final authority is a complicated issue in the public sector. The source of decision-making in the public sector is unclear:

> This separation of powers among the executive, legislative, and judicial branches with each branch often having different functional responsibilities and often serving different clienteles makes it difficult, if not impossible, to identify who speaks for management in collective bargaining.....The vagueness about where the final authority in collective bargaining lies in government has fostered the practice of unions of circumventing management bargaining representatives and appealing to other branches and/or levels of government to obtain bargaining advantages.[64]

In the public sector, authority is diffused among levels of government as well as within a single level of government.[65] While this system of checks and balances is a necessary tool of government, it is a prime example of

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[63]John W. Macy, Jr., "The Role of Bargaining in the Public Service" in Public Workers and Public Unions, ed. Sam Zagoria (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1972), p. 10.

[64]Bent and Reeves, p. 81.

[65]Moskow and Loewenberg, p. 16.

the fragmentation of authority between the executive and legislative branches.[66] Although useful, the checks and balances system often makes collective bargaining difficult. Each government body is going to have different goals, be subject to different pressures, and have different perspectives on any given labor issue.[67] When a confrontation arises (as in wage negotiations), the difficulty of presenting a united front to the union results from this fragmentation. Kochan points out this opportunity for unions to maneuver among and with the different segments of management in the furtherance of union interests. Additionally, the dispersion of power and goal incompatibility mentioned above leads to internal conflict for the management negotiating team. This, too, can be beneficial to the unions.[68]

Both Burton and Lewin cite Los Angeles as a prime example of diffused authority.[69] In this city, the mayor and council set salaries for less than 60% of the city employees. Five to six different independent salary-setting authorities all have a voice in wage decisions--the chief administrative officer, the city council, the personnel committee, the Employee Relations Board, and the mayor. This situation is

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[66]Veglahn and Hayford, p. 290.

[67]Wellington and Winter, p. 121.

[68]Kochan, pp. 90-99.

[69]See Burton, p. 26 and Lewin, p. 153.

not unique to Los Angeles; a similar diffusion of authority exists in many large cities.

A 1972 study by Kochan and Wheeler represents one of the first attempts to quantify wage and non-wage terms of union agreements. The authors chose 380 cities from 35 states for the study and evaluated the relationship of wage and non-wage bargaining outcomes to environmental characteristics, the bargaining process, and union/management organizational characteristics. Two findings are particularly relevant to our study. First, the degree to which power was dispersed among management officials was examined. The expectation was that the more dispersed the power, the better the union's opportunity to achieve favorable outcomes. This expectation was statistically confirmed. The second expectation which was researched was that the more power delegated to a single spokesman, the more effectively the city could resist union pressures. This expectation was strongly refuted by data with various explanations possible. "In essence, it appears to be a real source of power for the public employee union to deal with a knowledgeable professional as a representative of management."[70] The results of the Kochan and Wheeler study indicated that

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[70]Thomas A. Kochan and Hoyt N. Wheeler, "Municipal Collective Bargaining: A Model and Analysis of Bargaining Outcomes," Industrial and Labor Relations, vol. 29, October, 1972, p. 58.

management organizational characteristics had a stronger direct effect on wage outcomes than union tactics, such as political pressure and strikes.

The issue of centralization of decision-making authority and urban mass transit is examined in a 1979 government report by the Department of Transportation. With regard to management structure, this study found that centralization of authority in negotiations was a necessary, but not sufficient, condition to achieve organizational goals. The overall finding of this report has implications for those involved in efficient city administration: management structure cannot be divorced from management policy.[71]

Summary of the Literature

We have seen that the literature pertaining to who sits on the management negotiating team is diverse and often contradictory. Additionally, previous studies have a variety of weaknesses associated with them including a lack of empirical base, use of abstract variables that cannot be quantified and the lack of policy relevance.

In the next chapter, we will seek to show the relevance of the variables chosen for this study, and how they are used to test our hypothesis.

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[71] U.S. Department of Transportation, The Impact of Labor-Management Relations on Productivity and Efficiency in Urban Mass Transit, by James L. Perry, Harold L. Angle, and Marke E. Prittel. Washington, D.C., March, 1979, p. 88.

CHAPTER III

METHODOLOGY

Source of Data

The dependent variable, union wages, is secondary data adapted from published wage reports. The composition of the management negotiating team is primary data originally collected during field research for Guzell's unpublished study ("Municipal Bargaining Laws as Determinants of Municipal Public Employee Wages in Ohio"), and amplified by the writer for this study.

Following a preliminary mail survey of all 242 cities having a 1970 population of 5000 or more, Guzell conducted on-site interviews in 49 cities during 1978. Cities interviewed were selected using the following criteria: 1) minimum population of 10,000, 2) the existence of a collective bargaining ordinance or a survey report of "highly formalized labor relations" or 3) a population of over 100,000 whether or not the conditions in category 2 were met. Semi-structured interviews were conducted in the offices of various municipal officials.[72] A copy of the interview form is shown in Exhibit 3A.

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[72]Guzell, p. 74.

EXHIBIT 3A

Interview Form*

City _____ Interviewee _____ Date _____

Non-political Administrator? _____

If so, dates of office: _____

Composition of the typical management negotiating team: _____

_____

What are the union bargaining agents for: Police _____ Firefight. _____

Ref. C._____ Other _____

Has the city ever experienced any strikes or other job actions? List groups, dates, issues _____

_____

_____

Is there a usual sequence to bargaining, or an order in which the city usually settles with the particular groups? What is it? _____

_____

_____

How much do you feel this statement applies to _____(city)_____?

"Wage settlement percentages negotiated with police/firefighters tend to be automatically extended to all other employees."

___not appl. ___strongly agr. ___generally agr. ___gen. disagr. ___strong. disagree

Do employees here ever participate indirectly or covertly in political activities? (lobbying, making it known which candidates/laws they favor, etc.)

_____Never _____Rarely _____Usually _____Always

Do employees here ever participate in overt political activities? (Newspaper ads, sponsoring referendums, public positions on issues, etc.)

_____Never _____Rarely _____Usually _____Always

Does the city have a policy of wage parity? _____ What is it? _____

_____

Does anyone have formal responsibility for labor relations? ____Yes ____No.

Is there anything else about which I should have asked, or about which you feel I should know more concerning bargaining or labor relations in general, here in ___(city)_____?

* Actual size used: 8½ x 14

In addition to the 49 interview cities, 14 other Ohio cities met the three criteria of size, legislation, or labor relations formality, but were not visited by Guzell. This author was able to complete phone interviews with 7 additional cities. In most cases, information was obtained from the mayor's office, but other city officials, such as city administrator, provided assistance also. The only information requested during these phone interviews was, "During the period of the mid-1970s, who generally sat on the management negotiating team in wage negotiations with police and firefighters?" Combining the original interview cities and the subsequent ones resulted in a total sample of 56 cities. A listing of these cities is included in Appendix A.

Preparation of the Variables

The Dependent Variable

The wage data used in this study has been adopted from the comprehensive wage variable developed by Guzell (see Appendix B); it includes salary plus fringe benefits for police and firefighters. The data was gathered from several different annual sources including, The Municipal Yearbook, the Fraternal Order of Police Survey of Salaries and Working Conditions of the Police Departments in the United States, and The International Association of

Firefighters, Annual Fire Department Salaries and Working Conditions Survey in the U.S. and Canada.[73]

Each of these major sources collected their statistics at different times of the year, and occasionally varied the timespan in which information was gathered. No one source included all the information needed, and city years were often missing from one source or another. It was, therefore, necessary to reconcile conflicting data, and it was done using the following assumptions:

> 1) a decrease in reported salary over that from the previous year was probably an error, 2) a sudden large increase for one year relative to other years probably disguised an overlapped intermediary year, and 3) when two sources differed by an amount equal to the increase in the Consumer Price Index for that year, the higher of the two numbers was accepted because it probably reflected a cost-of-living adjustment that the other omitted...Every attempt was made to match up salaries and years in such a way that the three sources agreed.[74]

The salary variable for both police and firefighters was calculated as the mid-point of the minimum and maximum entry levels. Modifications were made in order to standardize fringe benefits and hours from city to city. Lastly, a "deflator-inflator value" was computed from the Consumer Price Index and used to convert all compensation for city employees into the 1967 dollar values.[75]

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[73] Ibid., p. 84.

[74] Ibid., pp. 86-89.

[75] See Guzell, Section 3C, pp. 87-98.

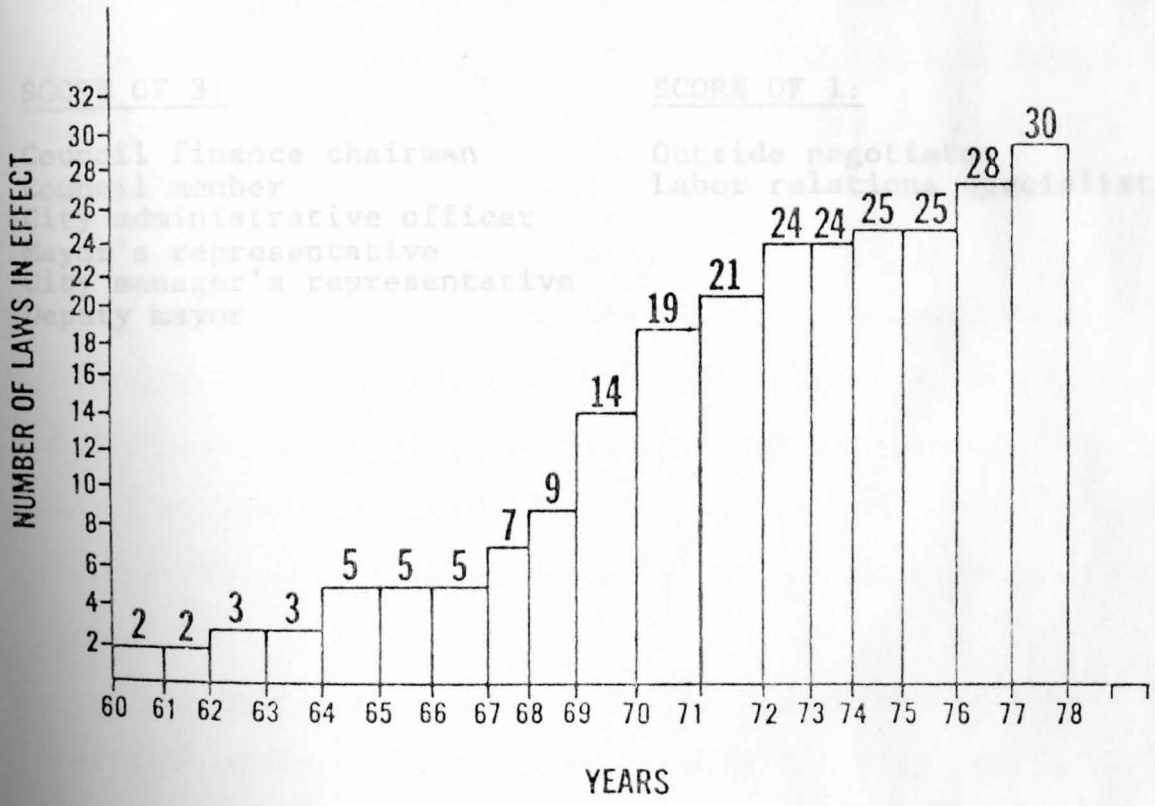
The Guzell study evaluated the years 1960 through 1978. Since the period of the early 1960s, many changes have taken place in public sector labor relations (see Exhibit 3B). Cities have become more formalized in their bargaining with employees, and hopefully, have profited from experiences of other cities in conducting negotiations. If nothing else, we can assume that cities have determined, on a "trial and error basis", the most effective way to negotiate wage contracts in their municipality. For these reasons, it was decided to focus the current study on the most recent years for which wage data had been analyzed. Two practical considerations also make this a desirable approach. First, using more recent years helps to minimize missing wage data and second, the interviews concerning the negotiating team refer only to the period of the mid-1970s. Therefore, the years included in this study are 1975 through 1978. These four years for our sample of 56 cities give a total number of 224 observations for each of the two employee groups, police and firefighters.

The Independent Variables

The principal independent variables of this study concern the power and the sources of authority of the management negotiating team. Power of the negotiators was measured by means of a ranking index with four categories, 4 being the highest (see Exhibit 3C). Each job position in city administration was given a score of 4, 3, 2, or 1.

EXHIBIT 3B

Incidence of bargaining laws in effect in Ohio cities 1960-1978



Source: Guzell's study, "Municipal Bargaining Laws as Determinants of Municipal Public Employee Wages in Ohio".

EXHIBIT 3C

POWER INDEX

SCORE OF 4:

Mayor
City manager
President of Council
Director of Administration

SCORE OF 3:

Council finance chairman
Council member
City administrative officer
Mayor's representative
City manager's representative
Deputy mayor

SCORE OF 2:

Department head
Personnel director
Safety/service director
Budget director
Finance director
Auditor
Law director/solicitor
City attorney

SCORE OF 1:

Outside negotiator
Labor relations specialist

These rankings of most to least powerful were based on job descriptions and duties found in Baldwin's Ohio Revised Code and Service and the Ohio Jurisprudence 3rd. From this index, two measures of power were originally evaluated--Power1, which was a total score for all members of the management negotiating team and Power2, a score for the single, most powerful member of the team. Later, Power1 was recoded into fewer categories for purposes of analysis of variance. Power2 was also recoded in order to run analysis of variance procedures. The mean of Power1 was calculated and categorized in order to obtain multiple regressions as well as analysis of variance. Appendix C shows these modified variables and how they were coded.

The sources of authority of the management team is represented by the variable AUTH. It stands for the number of different areas of authority represented--legislative, executive, judicial, civil service commission, other elected official (such as City Solicitor), or outside negotiator/specialist.

Both power and authority are operationalized as stated in order to test the hypothesis for this study. It should be noted that many different conceptual definitions exist. Other measures may be equally valid, but the author has chosen to evaluate the power and authority of the negotiating team in the manner explained above. Table 3 shows the variables and their recodings; this table is an abbreviated version of Appendix C.

TABLE 3

VARIABLES AND RECODINGS

(Power and Authority Only)

Name	Description	Recodings
Power1	Total power score for the negotiating team (1 to 31)	Power1 = PowerC (1 thru 4 = 1) (5 thru 8 = 2) (9 thru 12 = 3) (13 thru 31 = 4) Power 1 = PowerM mean scores 1.5 thru 3.5
Power2	Score of the person with the highest power (1 to 4)	Power2 = Power3 (1 thru 3 = 1) (4 = 2) (Else = -1)
PowerM	Mean score for Power1	PowerM = PowerM2 (0 thru 1.0 = 1) (1.1 thru 2.0 = 2) (2.1 thru 3.0 = 3) (3.1 thru 4.0 = 4)
$PowerM^2$	Mean score grouped into 4 categories	
Auth	Number of different areas of authority (1 to 3)	

Three variables from the Guzell study were used as covariates in order to explain further variations in the data. None of these variables can be interpreted as policy variables; none can be manipulated by city officials. These variables were selected based on their high correlation with union wages and their statistical significance. They include county value of housing, which Guzell found to be a good measure of ability to pay; city population in 1970, used to control for city size; and job actions, a proxy for union power of city employees. The survey of the literature indicates that these variables (or similar ones) are frequently studied by researchers. All are felt to have relevance to the determination of union wages, but the findings have been inconsistent.

In addition to analysis of variance and multiple regression, crosstabulations, Chi square tests, and contingency coefficients were performed in order to give the reader better perspective of the general character of the data. This information is presented early in Chapter IV.

CHAPTER IV

TESTING THE HYPOTHESIS

It should be clear by now that the composition of the management negotiating team is frequently addressed in the literature. Most authors state their reasons for choosing certain officials on a theoretical rather than an empirical basis. Models are frequently used to predict how the parties ought to behave, rather than how they actually did. Such research is interesting, but adds little to management's need for guidelines for better decision-making.

In order to determine if the makeup of the negotiating team has an effect on the outcome of wage demands, the following null hypothesis will be tested:

> Decentralized authority and dispersed power of the management negotiating team have no effect upon the level of employee wages.

This hypothesis will provide a framework for the conclusions that result from this study.

Statistical Analysis of the Data

Using the Statistical Package for the Social Sciences, numerous tests were performed on the wage data. Analysis of variance and multiple regression, both parametric tests, were the main statistical procedures used to test the hypothesis. Crosstabulations are presented for major variables in the study in order to visualize frequency

distributions of the data. The Chi square statistic, and the contingency coefficient, are included to assist the reader in determining whether or not a systematic relationship exists between variables.[76]

Depending on the requirements of the statistical test, different dependent wage variables were evaluated. In crosstabulations for a single year (randomly selected), the percentage increases in police and fire compensation were used; for crosstabulations for total years of the study, the wage variable was simply the compensation paid to police and firefighters. For multiple regression, police and fire compensation were evaluated; the analysis of variance used percentage increases as the dependent variable.

The crosstabulation tables are presented immediately following. In the first group, the percentage increase in police and firefighters' compensation (IPCA, IFCA) for 1976, is crosstabulated with the highest power score (Power3), the total power score (PowerC), and authority.[77] In these crosstabulations, we find no significant patterns (see Tables 4-A through 4-F). Neither a linear nor a curvilinear relationship seems to be present.

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[76] Norman H. Nie, et al, Statistical Package for the Social Sciences, Second Edition (New York: McGraw-Hill Book Company, 1975), p. 223 and p. 225.

[77] The results of crosstabulations with county value of housing, city population and job actions is shown in Appendices D through I. We find no significant patterns within the data. The Chi square is statistically significant at the .05 level only for county value of housing and IFCA. (See Appendix D).

TABLE 4-A

1976

* C R O S S T A B U L A T I O N O F *

IPCA INCREASE POLICE COMPENSATION CATEGORIZED BY POWERC TOTAL POWER CATEGORIZED

* *

IPCA	POWERC 1 THRU 4	5 THRU 8	9 THRU 12	13 THRU HI	ROW TOTAL
1	3	11	11	7	32
LO THRU -0.151	9.4	34.4	34.4	21.9	57.1
	60.0	50.0	50.0	100.0	
	5.4	19.6	19.6	12.5	
2	2	11	11	0	24
-0.152 THRU -0.0	8.3	45.8	45.8	0.0	42.9
	40.0	50.0	50.0	0.0	
	3.6	19.6	19.6	0.0	
COLUMN TOTAL	5 8.9	22 39.3	22 39.3	7 12.5	56 100.0

4 OUT OF 8 (50.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 2.143
PEARSON CHI SQUARE = 6.18333 WITH 3 DEGREES OF FREEDOM. SIGNIFICANCE = 0.1030
CONTINGENCY COEFFICIENT = 0.31534

TABLE 4-B
1976

* C R O S S T A B U L A T I O N   O F *

IFCA   INCREASE FIRE COMPENSATION CATEGORIZED   BY POWERC   TOTAL POWER CATEGORIZED

IFCA	POWERC COUNT ROW PCT COL PCT TOT PCT	1 THRU 4 1	5 THRU 8 2	6 THRU 12 3	13 THRU HI 4	ROW TOTAL
LO THRU -0.151	1	2 6.7 40.0 3.6	11 36.7 50.0 19.6	11 36.7 50.0 19.6	6 20.0 85.7 10.7	30 53.6
-0.152 THRU -0.0	2	3 11.5 60.0 5.4	11 42.3 50.0 19.6	11 42.3 50.0 19.6	1 3.8 14.3 1.8	26 46.4
COLUMN TOTAL		5 8.9	22 39.3	22 39.3	7 12.5	56 100.0

4 OUT OF 8 (50.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 2.321
RAW CHI SQUARE = 3.50359 WITH 3 DEGREES OF FREEDOM. SIGNIFICANCE = 0.3203
CONTINGENCY COEFFICIENT = 0.24265

TABLE 4-C

1976

* * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N   O F * * * * * * * * * * * * * * * * * *

IPCA   INCREASE POLICE COMPENSATION CATEGORIZED   BY POWER3   HIGHEST POWER CATEGORIZED

IPCA	POWER3: COUNT / ROW PCT / COL PCT / TOT PCT	1 THRU 3 (1)	4 THRU HI (2)	ROW TOTAL
1 LO THRU -0.151	COUNT	17	15	32
	ROW PCT	53.1	46.9	57.1
	COL PCT	56.7	57.7	
	TOT PCT	30.4	26.8	
2 -0.152 THRU -0.0	COUNT	13	11	24
	ROW PCT	54.2	45.8	42.9
	COL PCT	43.3	42.3	
	TOT PCT	23.2	19.6	
COLUMN TOTAL		30	26	56
		53.6	46.4	100.0

CORRECTED CHI SQUARE = 0.0 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 1.0000
RAW CHI SQUARE = 0.00598 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.9383
CONTINGENCY COEFFICIENT = 0.01034

TABLE 4-D

1976

* C R O S S T A B U L A T I O N O F *
IFCA INCREASE FIRE COMPENSATION CATEGORIZED BY POWER3 HIGHEST POWER CATEGORIZED
* *

IFCA	POWER3 COUNT / ROW PCT / COL PCT / TOT PCT	1 THRU 3 (1)	4 THRU HI (2)	ROW TOTAL
1 LO THRU -0.151	COUNT	16	14	30
	ROW PCT	53.3	46.7	53.6
	COL PCT	53.3	53.8	
	TOT PCT	28.6	25.0	
2 -0.152 THRU -0.0	COUNT	14	12	26
	ROW PCT	53.8	46.2	46.4
	COL PCT	46.7	46.2	
	TOT PCT	25.0	21.4	
COLUMN TOTAL		30	26	56
		53.6	46.4	100.0

CORRECTED CHI SQUARE = 0.0 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 1.0000
RAW CHI SQUARE = 0.00147 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.9694
CONTINGENCY COEFFICIENT = 0.00513

TABLE 4-E

1976

* CROSSTABULATION OF *
IPCA INCREASE POLICE COMPENSATION CATEGORIZED BY AUTH NUMBER OF AREAS OF AUTHORITY
* *

IPCA	AUTH 1	2	3	ROW TOTAL
1	11	17	4	32
LO THRU -0.151	34.4	53.1	12.5	57.1
	47.8	63.0	66.7	
	19.6	30.4	7.1	
2	12	10	2	24
-0.152 THRU -0.0	50.0	41.7	8.3	42.9
	52.2	37.0	33.3	
	21.4	17.9	3.6	
COLUMN TOTAL	23	27	6	56
	41.1	48.2	10.7	100.0

2 OUT OF 6 (33.3%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 2.571
RAW CHI SQUARE = 1.41090 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.4939
CONTINGENCY COEFFICIENT = 0.15677

TABLE 4-F

1976

* * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * *

IFCA INCREASE FIRE COMPENSATION CATEGORIZED BY AUTH NUMBER OF AREAS OF AUTHORITY

* *

IFCA	COUNT / ROW PCT / COL PCT / TOT PCT	AUTH 1	AUTH 2	AUTH 3	ROW TOTAL
LO THRU -0.151	1	10	16	4	30
		33.3	53.3	13.3	53.6
		43.5	59.3	66.7	
		17.9	28.6	7.1	
-0.152 THRU -0.0	2	13	11	2	26
		50.0	42.3	7.7	46.4
		56.5	40.7	33.3	
		23.2	19.6	3.6	
COLUMN TOTAL		23	27	6	56
		41.1	48.2	10.7	100.0

2 OUT OF 6 (33.3%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 2.786
RAW CHI SQUARE = 1.70689 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.4259
CONTINGENCY COEFFICIENT = 0.17198

The second group of crosstabulations combines the years 1975-1978. The dependent wage variable is the compensation paid police and firefighters (PCA, FCA). In these crosstabulations (Tables 4-G through 4-L), we find that PowerC, the total power of the negotiating team, has statistical significance for fire compensation. It is the only instance where one of our independent variables is significant. Again, there seems to be no discernable patterns with our data. The percentages between categories are either very similar or quite dissimilar, indicating no relationships are present.

The results of crosstabulations for the covariates are shown in Appendices J through O. County value of housing is shown to be statistically significant both for FCA and PCA. The Chi square is statistically significant for city population as well as job actions.

TABLE 4-G

1975-1978

* * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N   O F *
PCA BY POWERC   TOTAL POWER CATEGORIZED
* *

PCA (POWERC →) COUNT / ROW PCT / COL PCT / TOT PCT	1 THRU 4 (1)	5 THRU 8 (2)	6 THRU 12 (3)	13 THRU HI (4)	ROW TOTAL
2 — 5401 THRU 6800	1 33.3 6.3 0.5	1 33.3 1.2 0.5	0 0.0 0.0 0.0	1 33.3 4.3 0.5	3 1.4
3 — 6801 THRU 8300	5 8.5 31.3 2.4	24 40.7 28.2 11.5	23 39.0 27.4 11.1	7 11.9 30.4 3.4	59 28.4
4 — 8301 THRU 9600	8 11.9 50.0 3.8	31 46.3 36.5 14.9	21 31.3 25.0 10.1	7 10.4 30.4 3.4	67 32.2
5 — 9601 THRU HI	2 2.5 12.5 1.0	29 36.7 34.1 13.9	40 50.6 47.6 19.2	8 10.1 34.8 3.8	79 38.0
COLUMN TOTAL	16 7.7	85 40.9	84 40.4	23 11.1	208 100.0

5 OUT OF 16 (31.3%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.231
RAW CHI SQUARE = 13.88915 WITH 9 DEGREES OF FREEDOM. SIGNIFICANCE = 0.1263
CONTINGENCY COEFFICIENT = 0.25019

NUMBER OF MISSING OBSERVATIONS = 16

TABLE 4-H
1975-1978

* * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F *
FCA BY POWERC TOTAL POWER CATEGORIZED
* *

FCA	COUNT / ROW PCT / COL PCT / TOT PCT	POWERC 1 (1 THRU 4)	2 (5 THRU 8)	3 (6 THRU 12)	4 (13 THRU HI)	ROW TOTAL
2 — 5401 THRU 6800	COUNT	3	0	0	1	4
	ROW PCT	75.0	0.0	0.0	25.0	2.1
	COL PCT	17.6	0.0	0.0	4.0	
	TOT PCT	1.6	0.0	0.0	0.5	
3 — 6801 THRU 8300	COUNT	3	18	21	7	49
	ROW PCT	6.1	36.7	42.9	14.3	26.2
	COL PCT	17.6	26.1	27.6	28.0	
	TOT PCT	1.6	9.6	11.2	3.7	
4 — 8301 THRU 9600	COUNT	8	25	22	9	64
	ROW PCT	12.5	39.1	34.4	14.1	34.2
	COL PCT	47.1	36.2	28.9	36.0	
	TOT PCT	4.3	13.4	11.8	4.8	
5 — 9601 THRU HI	COUNT	3	26	33	8	70
	ROW PCT	4.3	37.1	47.1	11.4	37.4
	COL PCT	17.6	37.7	43.4	32.0	
	TOT PCT	1.6	13.9	17.6	4.3	
	COLUMN TOTAL	17	69	76	25	187
		9.1	36.9	40.6	13.4	100.0

5 OUT OF 16 (31.3%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.364
RAW CHI SQUARE = 27.43016 WITH 9 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0012
CONTINGENCY COEFFICIENT = 0.35766
NUMBER OF MISSING OBSERVATIONS = 37

TABLE 4-I

1975-1978

* * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * *
PCA BY POWER3 HIGHEST POWER CATEGORIZED

PCA	POWER3 COUNT ROW PCT COL PCT TOT PCT	1 THRU 3 1	4 THRU HI 2	ROW TOTAL
5401 THRU 6800	2	1 33.3 0.9 0.5	2 66.7 2.1 1.0	3 1.4
6801 THRU 8300	3	37 62.7 33.0 17.8	22 37.3 22.9 10.6	59 28.4
8301 THRU 9600	4	29 43.3 25.9 13.9	38 56.7 39.6 18.3	67 32.2
9601 THRU HI	5	45 57.0 40.2 21.6	34 43.0 35.4 16.3	79 38.0
	COLUMN TOTAL	112 53.8	96 46.2	208 100.0

2 OUT OF 8 (25.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 1.385
RAW CHI SQUARE = 5.69039 WITH 3 DEGREES OF FREEDOM. SIGNIFICANCE = 0.1277
CONTINGENCY COEFFICIENT = 0.16318

NUMBER OF MISSING OBSERVATIONS = 16

TABLE 4-J

1975-1978

* * * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * * *

ECA BY POWER3 HIGHEST POWER CATEGORIZED

ECA	COUNT / ROW PCT / COL PCT / TOT PCT	POWER3: 1 THRU 3 (1)	4 THRU HI (2)	ROW TOTAL
2	COUNT	3	1	4
5401 THRU 6800	ROW PCT	75.0	25.0	2.1
	COL PCT	2.8	1.3	
	TOT PCT	1.6	0.5	
3	COUNT	29	20	49
6801 THRU 8300	ROW PCT	59.2	40.8	26.2
	COL PCT	26.6	25.6	
	TOT PCT	15.5	10.7	
4	COUNT	30	34	64
8301 THRU 9600	ROW PCT	46.9	53.1	34.2
	COL PCT	27.5	43.6	
	TOT PCT	16.0	18.2	
5	COUNT	47	23	70
9601 THRU HI	ROW PCT	67.1	32.9	37.4
	COL PCT	43.1	29.5	
	TOT PCT	25.1	12.3	
COLUMN TOTAL		109	78	187
		58.3	41.7	100.0

2 OUT OF 8 (25.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 1.668
RAW CHI SQUARE = 6.16194 WITH 3 DEGREES OF FREEDOM. SIGNIFICANCE = 0.1040
CONTINGENCY COEFFICIENT = 0.17861

NUMBER OF MISSING OBSERVATIONS = 37

TABLE 4-K

1975-1978

* C R O S S T A B U L A T I O N O F *
PCA
BY AUTH NUMBER OF AREAS OF AUTHORITY

PCA	AUTH: COUNT / ROW PCT / COL PCT / TOT PCT	1	2	3	ROW TOTAL
5401 THRU 6800	2	1 33.3 1.1 0.5	2 66.7 2.0 1.0	0 0.0 0.0 0.0	3 1.4
6801 THRU 8300	3	23 39.0 26.1 11.1	31 52.5 31.3 14.9	5 8.5 23.8 2.4	59 28.4
8301 THRU 9600	4	28 41.8 31.8 13.5	34 50.7 34.3 16.3	5 7.5 23.8 2.4	67 32.2
9601 THRU HI	5	36 45.6 40.9 17.3	32 40.5 32.3 15.4	11 13.9 52.4 5.3	79 38.0
COLUMN TOTAL		88 42.3	99 47.6	21 10.1	208 100.0

3 OUT OF 12 (25.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.303
RAW CHI SQUARE = 3.98397 WITH 6 DEGREES OF FREEDOM. SIGNIFICANCE = 0.6788
CONTINGENCY COEFFICIENT = 0.13709

NUMBER OF MISSING OBSERVATIONS = 16

TABLE 4-L

1975-1978

* C R O S S T A B U L A T I O N   O F *

FCA ' BY AUTH NUMBER OF AREAS OF AUTHORITY

* *

FCA	AUTH COUNT ROW PCT COL PCT TOT PCT	1	2	3	ROW TOTAL
5401 THRU 6800	2	0 0.0 0.0 0.0	4 100.0 4.5 2.1	0 0.0 0.0 0.0	4 2.1
6801 THRU 8300	3	21 42.9 26.6 11.2	25 51.0 28.1 13.4	3 6.1 15.8 1.6	49 26.2
8301 THRU 9600	4	26 40.6 32.9 13.9	28 43.8 31.5 15.0	10 15.6 52.6 5.3	64 34.2
9601 THRU HI	5	32 45.7 40.5 17.1	32 45.7 36.0 17.1	6 8.6 31.6 3.2	70 37.4
	COLUMN TOTAL	79 42.2	89 47.6	19 10.2	187 100.0

4 OUT OF 12 (33.3%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.406
RAW CHI SQUARE = 7.86071 WITH 6 DEGREES OF FREEDOM. SIGNIFICANCE = 0.2485
CONTINGENCY COEFFICIENT = 0.20085

NUMBER OF MISSING OBSERVATIONS = 37

For each of the four years of the study, analysis of variance tests were done, with and without covariates, for a total of forty-eight analyses. Using the F-ratio, we determine statistical significance of each of the independent variables. The Eta squared statistic indicates the proportion of variation in the dependent variable explained by each factor in the research. The results are shown in Tables 4-M through 4-P. In 1975, we see that the only statistically significant independent variable is PowerC. This variable accounts for over 13% of the variance in fire compensation. None of the analyses for 1976 show any statistically significant variables. Power3 explained 4.29% of the variance in 1977 fire compensation and it was statistically significant. Several independent and covariate variables were found to be significant predictors of the dependent fire compensation variable for 1978; none of these was significant in explaining increases in police compensation. In each of the variance procedures without covariates, Power3 was significant, and its contribution ranged from 9.374% to 6.918%. Power3 was also significant in each of the analyses with covariates. Authority and PowerC also appeared statistically significant in one of the analyses of variance, though they explained a great deal less variance than Power3.

TABLE 4-M

SUMMARY OF ANALYSIS OF VARIANCE: CHANGES IN WAGES WITH AND WITHOUT COVARIATES

1975

Dependent Variable	Independent Variables	F Ratio	Eta^2	With Covariates	F Ratio
IFC	PowerC	2.786*	13.69	Covalhou	1.108
	Power3	0.986	0.49	Citpop	0.003
		d.f.6,42		Jobacts	1.886
				PowerC	2.400
				Power3	1.467
					d.f.9,37
IPC	PowerC	0.623	3.24	Covalhou	0.054
	Power3	0.596	0.64	Citpop	0.094
		d.f.6,45		Jobacts	0.134
				PowerC	0.741
				Power3	0.679
					d.f.9,42
IFC	PowerM2	0.198	1.69	Covalhou	0.886
	Power3	0.114	0.49	Citpop70	0.002
		d.f.4,44		Jobacts	1.507
				PowerM2	0.195
				Power3	0.240
					d.f.7,41

TABLE 4-M
(continued)

Dependent Variable	Independent Variables	F Ratio	Eta^2	With Covariates	F Ratio
IPC	PowerM2	0.792	1.69	Covalhou	0.056
	Power3	1.821	0.64	Citpop	0.097
		d.f.4,47		Jobacts	0.139
				PowerM2	0.712
				Power3	0.712
					d.f.7,44
IFC	Auth	1.027	2.89	Covalhou	1.015
	PowerC	2.664	13.69	Citpop	0.003
	Power3	1.502	.49	Jobacts	1.728
		d.f.6,42		Auth	1.035
				PowerC	2.212
				Power3	1.908
					d.f.9,39
IPC	Auth	0.162	.04	Covalhou	0.054
	PowerC	0.727	3.24	Citpop	0.094
	Power3	0.647	.64	Jobacts	0.135
		d.f.6,45		Auth	0.276
				PowerC	0.920
				Power3	0.821
					d.f.9.42

*Statistically significant at the .05 level
d.f. Degrees of freedom

TABLE 4-N

SUMMARY OF ANALYSIS OF VARIANCE: CHANGES IN WAGES WITH AND WITHOUT COVARIATES

1976

Dependent Variable	Independent Variables	F Ratio	Eta^2	With Covariates	F Ratio
IFC	PowerC	1.039	6.76	Covalhou	0.944
	Power3	0.082	0.25	Citpop70	1.305
		d.f.6,71		Jobacts	0.441
				PowerC	0.622
				Power3	0.001
					d.f.9,38
IPC	PowerC	0.485	2.25	Covalhou	0.002
	Power3	0.461	.25	Citpop70	0.781
		d.f.6,45		Jobacts	0.010
				PowerC	0.653
				Power3	1.076
					d.f.9.42
IFC	PowerM2	0.186	1.21	Covalhou	0.922
	Power3	0.178		Citpop70	1.275
		d.f.4,43		Jobacts	0.431
				PowerC	0.452
				Power3	0.093
					d.f.4,40

TABLE 4-N
(continued)

Dependent Variable	Independent Variables	F Ratio	Eta^2	With Covariates	F Ratio
IPC	PowerM2	0.052	0.25	Covalhou	0.002
	Power3	0.152	0.25	Citpop70	0.782
		d.f.4,47		Jobacts	0.010
				PowerM2	0.061
				Power3	0.259
					d.f.7,44
IFC	Auth	0.265	0.081	Covalhou	0.899
	PowerC	1.033	6.76	Citpop70	1.242
	Power3	0.122	0.25	Jobacts	0.420
		d.f.6,41		Auth	0.205
				PowerC	0.617
				Power3	0.000
					d.f.9,38
IPC	Auth	1.631	8.41	Covalhou	0.002
	PowerC	0.182	2.25	Citpop70	0.829
	Power3	0.171	0.25	Jobacts	0.010
		d.f.6,45		Auth	1.377
				PowerC	0.189
				Power3	0.389
					d.f.9,42

*Statistically significant at the .05 level
d.f. Degrees of freedom

TABLE 4-O

SUMMARY OF ANALYSIS OF VARIANCE: CHANGES IN WAGES WITH AND WITHOUT COVARIATES

1977

Dependent Variable	Independent Variables	F Ratio	Eta^2	With Covariates	F Ratio
IFC	PowerC	0.246	2.25	Covalhou	3.433
	Power3	2.835	7.29	Citpop	0.104
		d.f.6,39		Jobacts	0.264
				PowerC	0.266
				Power3	1.758
					d.f.9,36
IPC	PowerC	0.773	4.84	Covalhou	0.749
	Power3	0.081	0.16	Citpop70	0.123
		d.f.6,47		Jobacts	0.027
				PowerC	0.732
				Power3	0.025
					d.f.9,44
IFC	PowerM2	0.680	1.44	Covalhou	3.711
	Power3	4.643*	7.29	Citpop70	0.113
		d.f.4,41		Jobacts	0.286
				PowerM2	0.886
				Power3	3.533
					d.f.4,38

TABLE 4-O
(continued)

Dependent Variable	Independent Variables	F Ratio	Eta^2	With Covariates	F Ratio
IPC	PowerM2	0.989	4.00	Covalhou	0.783
	Power3	1.019	0.16	Citpop70	0.129
		d.f.4,49		Jobacts	0.028
				PowerM2	0.958
				Power3	0.729
					d.f.7,46
IFC	Auth	1.065	5.76	Covalhou	3.568
	PowerC	0.291	2.25	Citpop70	0.109
	Power3	2.085	7.29	Jobacts	0.275
		d.f.6,39		Auth	1.132
				PowerC	0.247
				Power3	2.240
					d.f.9,36
IPC	Auth	1.130	1.21	Covalhou	0.774
	PowerC	0.693	4.84	Citpop70	0.127
	Power3	0.000	0.16	Jobacts	0.028
		d.f.6,47		Auth	1.019
				PowerC	0.603
				Power3	0.005
					d.f.9,44

*Statistically significant at the .05 level
d.f. Degrees of freedom

TABLE 4-P

SUMMARY OF ANALYSIS OF VARIANCE: CHANGES IN WAGES WITH AND WITHOUT COVARIATES

1978

Dependent Variable	Independent Variables	F Ratio	Eta^2	With Covariates	F Ratio
IPC	PowerM2	0.207	2.56	Covalhou	1.707
	Power3	0.224	1.44	Citpop70	0.004
		d.f.4,39		Jobacts	0.832
				PowerM2	0.251
				Power3	0.702
					d.f.7,36
IFC	Auth	1.707	2.89	Covalhou	0.490
	PowerC	1.628	2.56	Citpop70	0.032
	Power3	9.374*	15.21	Jobacts	0.001
		d.f.6,28		Auth	3.581*
				PowerC	3.104*
				Power3	17.730*
					d.f.9,25
IPC	Auth	0.056	.00	Covalhou	1.670
	PowerC	0.491	3.24	Citpop70	0.004
	Power3	0.724	1.44	Jobacts	0.813
		d.f.6,37		Auth	0.312
				PowerC	0.576
				Power3	0.960
					d.f.9,34

TABLE 4-P
(continued)

Dependent Variable	Independent Variables	F Ratio	Eta^2	With Covariates	F Ratio
IFC	PowerC	0.762	2.56	Covalhou	0.387
	Power3	0.985*	15.21	Citpop70	0.025
		d.f.6,28		Jobacts	0.001
				PowerC	1.079
				Power3	10.253*
					d.f.9,25
IPC	PowerC	0.461	3.24	Covalhou	1.642
	Power3	0.679	1.44	Citpop70	0.004
		d.f.6,37		Jobacts	0.800
				PowerC	0.433
				Power3	0.776
					d.f.9,37
IFC	PowerM2	0.667	2.56	Covalhou	0.384
	Power3	6.918*	15.21	Citpop70	0.025
		d.f.4,30		Jobacts	0.001
				PowerM2	0.454
				Power3	7.814*
					d.f.7,27

*Statistically significant at the .05 level
d.f. Degrees of freedom

Using the mean real wage variables for police and firefighters, the hypothesis was further examined by use of multiple regression. The F-ratio determines the significance of the regression equation, and R^2 is the proportion of variance in the dependent variable statistically explained by the independent variables. None of the F-ratios shown for the following multiple regressions are statistically significant at the .05 level. For all four years of the study, the R^2 statistic is small--under 10%. Only once does R^2 go above 10% to 11.3%. This occurs for Power2 as a measure of fire compensation in 1975.

Beta scores are also given in the multiple regression tables. Betas show the relative contribution of each of the independent variables, expressed as the slope of the regression line. The majority of the Beta coefficients are very low. In 1978, the Beta score for PowerM is -0.482, the largest value for any of the independent variables in the study (see Table 4-T). The mean Beta score, ignoring signs, for all the variables is 0.173.

TABLE 4-Q

SUMMARY OF MULTIPLE REGRESSION: WAGES WITH POWER1, POWER2, POWERM AND AUTH

1975

Dependent Variable	Independent Variables (in stepwise order)	R^2	Beta	F Ratio	Degrees of Freedom
PC	Power1	0.043	0.220	2.310	1,52
	Auth	0.044	-0.044	1.181	2,51
	Power2	not in equation	-----	-----	----
PC	Power2	0.005	0.241	0.253	1,52
	PowerM	0.018	-0.208	0.480	2,51
	Auth	not in equation	-----	-----	----
FC	Power1	0.053	0.353	2.670	1,49
	Auth	0.088	-0.202	2.310	2,48
	Power2	0.113	-0.170	1.998	3,47
FC	PowerM	0.017	-0.265	0.831	1,49
	Auth	0.027	-0.114	0.672	2,48
	Power2	0.036	0.166	0.582	3,47

TABLE 4-R

SUMMARY OF MULTIPLE REGRESSION: WAGES WITH POWER1, POWER2, POWERM AND AUTH

1976

Dependent Variable	Independent Variables (in stepwise order)	R^2	Beta	F Ratio	Degrees of Freedom
PC	Power1	0.022	0.221	1.195	1,52
	Auth	0.048	-0.169	1.272	2,51
	Power2	0.050	-0.053	0.877	3,50
PC	Auth	0.011	-0.116	0.562	1,52
	PowerM	0.013	-0.225	0.353	2,51
	Power2	0.027	0.206	0.461	3,50
FC	Power1	0.031	0.275	1.483	1,47
	Power2	0.053	-0.165	1.290	2,46
	Auth	0.071	-0.135	1.122	3,45
FC	PowerM	0.027	-0.322	1.302	1,47
	Power2	0.037	0.192	0.880	2,46
	Auth	0.042	-0.072	0.657	3,45

TABLE 4-S

SUMMARY OF MULTIPLE REGRESSION: WAGES WITH POWER1, POWER2, POWERM AND AUTH

1977

Dependent Variable	Independent Variables (in stepwise order)	R^2	Beta	F Ratio	Degrees of Freedom
PC	Power1	0.022	0.170	1.215	1,54
	Auth	0.026	-0.068	0.711	2,53
	Power2	not in equation	-----	-----	
PC	Power2	0.003	0.201	0.143	1,54
	PowerM	0.012	-0.178	0.328	2,53
	Auth	0.013	-0.028	0.228	3,52
FC	Power1	0.023	0.244	1.116	1,47
	Power2	0.062	-0.212	1.520	2,46
	Auth	0.065	-0.057	1.040	3,45
FC	PowerM	0.018	-0.080	0.862	1,47
	Power2	0.019	-0.066	0.454	2,46
	Auth	not in equation	-----	-----	----

TABLE 4-T

SUMMARY OF MULTIPLE REGRESSION: WAGES WITH POWER1, POWER2, POWERM AND AUTH

1978

Dependent Variable	Independent Variables (in stepwise order)	R^2	Beta	F Ratio	Degrees of Freedom
PC	Power2	0.006	0.077	0.263	1,44
	Power1	not in equation	-----	-----	----
	Auth	not in equation	-----	-----	----
PC	Power2	0.006	0.353	0.263	1,44
	PowerM	0.040	-0.331	0.892	2,43
	Auth	0.040	-0.022	0.588	3,42
FC	Power2	0.020	-0.147	0.719	1,36
		0.021	-0.052	0.381	2,35
		0.022	0.031	0.257	3,34
FC	PowerM	0.070	-0.482	2.710	1,36
	Power2	0.090	0.264	1.725	2,35
	Auth	0.094	-0.068	1.178	3,34

Results of the Tests

The overall perspective of the statistical testing performed indicates virtually no change in wages attributable to our independent variables. Therefore, we failed to reject the null hypothesis:

> Decentralized authority and dispersed power of the management negotiating team has no effect upon the level of employee wages.

In several of the analysis of variance tests, Power3 was shown to have a small, but statistically significant impact. Power3 is the highest power score categorized. There is no statistical evidence that the numbers of areas of authority have any bearing on employee wages.

Power3 is a modification of Power2, which is, again, the score for the person with the highest power of the team. In the multiple regressions, Power2 has the largest R^2 of any of the independent variables. Again, authority appears statistically insignificant. PowerM, the mean score for the total power of the negotiating team, has the highest Beta score for the variables evaluated by multiple regression. However, even this was quite small compared to some of the other known wage determinants.

Based on the results of our statistical testing, we can put little confidence in this study's measures of "power" and "authority" as predictors of higher employee wages. Though we expected these variables to measure a very small amount of variance, the fact that they are not statistically

significant indicates they have little, overall reliability. Additional support for this conclusion comes from the inconsistencies in the order in which the stepwise regression "chose" the variables, both from one year to the next and from police to firefighters.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Summary of Findings

No single study can hope to resolve the complex issue of what determines higher employee wages. Though we acknowledge the numerous factors relevant to wage outcomes, this study has focused on two major variables, both of which can be manipulated by public administrators. The literature indicates that the power of the management negotiators and the amount of decentralization has an effect on employee wage outcomes. As defined and measured in this paper, however, these variables appear to be unrelated to employee wage outcomes. There are several interpretations possible.

It is reasonable to assume that other, perhaps better, measures of power and authority exist. In fact, we may not even be measuring these factors at all, but some other related variable. Using formal position power as an indicator of amount of power of each of the negotiators may be misleading. There is no way to evaluate the behind-the-scenes relationship that exists in the public (as well as private) sectors. In other words, formal power and exercised, or actual power, may be entirely different. Likewise, counting the different areas of authority represented on the

management team may be an inaccurate way to establish decentralized versus centralized authority; other measures may be more appropriate.

Another problem that may result from this study is the bias that may exist with our sample cities. Using the three criteria of size, existence of bargaining ordinances, or highly formalized labor relations means that we are ignoring cities with less formal labor relations that could be part of the sample. This bias towards "formalized" cities may have an effect on our overall findings.

Using the measures of power and authority as operationalized for this study, and the sample city criteria, raises the question of reliability. Can we generalize the results of this study to other states, or even to other Ohio cities? If the methodology of this study is valid, there is reason to believe that the dispersed power and decentralized authority of the management team do not have an effect on employee wage outcomes. Such a conclusion is contrary to most other assertions (which admittedly are not based on empirical evidence). The results of this study, then, cast doubt upon the validity of existing anecdotal evidence, but should themselves be regarded with caution because of methodological limitations.

Suggestions for Additional Research

This study has failed to connect differences in mean real wage levels with the power and authority of the management negotiating team. We can conclude that either changes in wage levels are random occurrences, or that better independent variables must be developed. This researcher feels that the latter approach makes the most sense.

Future researchers need to find better ways to assess the power of authority of the management negotiating team. Measures of actual versus formal, positional power need to be developed.

Also, new sources of raw data need to be found. Public employee wage studies have for too often been philosophical and subjective. More empirically based research is needed. Time-series analyses, instead of cross-sectional studies, could provide additional useful information.

Final Comments

Public employee unionism is not a passing phenomenon. It will not disappear simply because many public officials choose to ignore it. For too long, those persons who have had responsibility for municipal administration have neglected effective relationships between employee groups and public managers.

Macy feels that the evolving role of bargaining can be either beneficial or destructive. In order to assure a

beneficial result administrators, employees, labor leaders and voters must focus creative energies on the labor/management relationships within their cities:

> It may well be that the demanding challenge to find improved relationships in the public sector may establish new patterns in responsible, peace-making machinery where the balance of justice and fairness to the employee, and responsive service to the public, may be maintained in constructive equilibrium.[78]

Levesque reaches a similar conclusion. As both employer and employee organizations gain more sophistication and understanding of each others' motivations, public labor relations may eventually "evolve to a more balanced alignment of the two interests characterized by bilateral resolution of issues...".[79]

The key to the future for public administrators may well be the extent to which they are able to become proficient in labor relations and collective bargaining matters. Cities will need to candidly share their successes and failures in order to develop new approaches to complicated, often difficult issues. This mutual cooperation, coupled with more and better research, should make public sector labor relations a more responsible, effective process for the future.

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[78]Macy, p. 19.

[79]Levesque, p. 66.

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APPENDIX A

SAMPLE CITIES

(in alphabetical order)

Akron
Athens
Avon Lake
Brook Park
Bucyrus
Campbell
Canton
Cincinatti
Cleveland
Cleveland Heights
Conneaut
Csohocton
Cuyahoga Falls
Dayton
Defiance
East Liverpool
Elyria
Fairborn
Fairview Park
Garfield Heights
Girard
Hamilton
Ironton
Kettering
Lakewood
Lima
Maple Heights
Marietta
Marion
Martins Ferry
Mentor
Mt. Vernon
New Philadelphia
Newark
North Olmsted
North Ridgeville
Norwalk
Norwood
Oakwood
Painesville
Parma
Parma Heights
Piqua
Ravenna
Rocky River
Shaker Heights
Sidney
Springfield
Steubenville
Struthers
Toledo
Wadsworth
Warren
Xenia
Youngstown
Zanesville

APPENDIX B

FORMULAE USED IN COMPUTING WAGES*

Salary =

((((minimum salary + maximum salary)/2) times (40/hours per week)) times (inflation adjuster)), or,

Police Salary (PS) = ((((T4+T5)/2) * (40/T7)) * (YIA))
Fireman Salary (FS) = ((((T25+T26/2) * (56/T28)) * (YIA))

Compensation =

((salary)+((((salary/240) times (median days vacation + annual paid holidays + annual paid sickdays)) + (clothing allowance deflated) + (overtime times 5% of salary) + (shift premium as percent of salary) + (Longevity as percentage of salary) + (percent paid hospitalization times 546) + (thousands of dollars of life insurance coverage times 4.68)), or

Police Compensation (PC) = (PS) + ((((PS/240) * (T8+T10+T133)) + (T11 * YIA) + (T9*(.05*PS)) + (T15*(PCTSFT*PS)) + (T17*(PCTLNG*PS)) + (T12*546) + (T14*4.68)))

Fireman Compensation (FC) = ((FS+((((FS/240)*(T29+T31+T344)) + (T32*YIA) + (T30*(.05*FS)) + (T36*(PCTSFT*FS)) + (T38*(PCTLNG*FS)) + (T33*546) + (T35*4.68)))

*Each formula contained a term (RND) to round the result to the nearest whole dollar. Imperfections in the formulae themselves sometimes failed to recognize compensation as missing when salary was missing but fringe benefits were not. Therefore compensation values of less than $2000 were declared missing.

APPENDIX C

VARIABLES AND RECODINGS

Name	Description	Recodings
Power1	Total power source for the negotiating team (1 to 31)	Power1 + PowerC (1 thru 4 = 1) (5 thru 8 = 2) (9 thru 12 = 3) (13 thru 31 = 4) Power1 = PowerM mean scores 1.5 thru 3.5
Power2	Score of the person with the highest power (1 to 4)	Power2 = Power3 (1 thru 3 = 1) (4 = 2) (Else = -1)
PowerM	Mean score for Power1	PowerM = PowerM2 (0 thru 1.0 = 1) (1.1 thru 2.0 = 2) (2.1 thru 3.0 = 3) (3.1 thru 4.0 = 4)
PowerM2	Mean score grouped into 4 categories	
Auth	Number of different areas of authority (1 to 3)	
PC	Police compensation	See Appendic B, Formulae Used in Computing Wages
FC	Fire compensation	Same as above
PCA	Police compensation, categorized	(Lo thru 5400 = 1) (5401 thru 6800 = 2) (6801 thru 8300 = 3) (8301 thru 9600 = 4) (9601 thru Hi = 5)
FCA	Fire compensation, categorized	Same as above

APPENDIX C
(continued)

Name	Description	Recodings
IPC	Percentage change in police compensation	
IFC	Percentage change in fire compensation	
IPCA	Percentage change in police compensation, categorized	(Lo thru -0.0234 = 1) (-0.02339 thru 0.0099 = 2) (.00991 thru Hi = 3)
IFCA	Percentage change in fire compensation, categorized	Same as above
Covalhou	County value of housing	
Citpop70	City population, 1970 census	
Jobacts	Job actions, strikes	

APPENDIX D

1976

* C R O S S T A B U L A T I O N O F *
IPCA INCREASE POLICE COMPENSATION CATEGORIZED BY COVALHOA COUNTY VALUE HOUSING CATEGORIZED
* *

		COVALHOA			
	COUNT / ROW PCT / COL PCT / TOT PCT	UNDER 15580	15939 TO 18710	18775 TO HI	ROW TOTAL
		1	2	3	
IPCA					
	1	11	8	13	32
LO THRU -0.151		34.4	25.0	40.6	57.1
		61.1	47.1	61.9	
		19.6	14.3	23.2	
	2	7	9	8	24
-0.152 THRU -0.0		29.2	37.5	33.3	42.9
		38.9	52.9	38.1	
		12.5	16.1	14.3	
	COLUMN TOTAL	18 32.1	17 30.4	21 37.5	56 100.0

RAW CHI SQUARE = 1.01607 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.6017
CONTINGENCY COEFFICIENT = 0.13349.

APPENDIX E

1976

* * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * *

IFCA INCREASE FIRE COMPENSATION CATEGORIZED BY COVALHOA COUNTY VALUE HOUSING CATEGORIZED

* *

IFCA (COUNT / ROW PCT / COL PCT / TOT PCT)	COVALHOA UNDER 15580 (1)	15939 TO 18710 (2)	18775 TO HI (3)	ROW TOTAL
1 LO THRU -0.151	10	5	15	30
	33.3	16.7	50.0	53.6
	55.6	29.4	71.4	
	17.9	8.9	26.8	
2 -0.152 THRU -0.0	8	12	6	26
	30.8	46.2	23.1	46.4
	44.4	70.6	28.6	
	14.3	21.4	10.7	
COLUMN TOTAL	18	17	21	56
	32.1	30.4	37.5	100.0

RAW CHI SQUARE = 6.71024 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0349

CONTINGENCY COEFFICIENT = 0.32711

APPENDIX F

1976

* C R O S S T A B U L A T I O N O F *

IPCA INCREASE POLICE COMPENSATION CATEGORIZED BY CITPOPA CITY POPULATION 1970 CATEGORIZED

IPCA	COUNT / ROW PCT / COL PCT / TOT PCT	CITPOPA 1: 10000 TO 25000	2: 25001 TO 50000	3: 50001 TO 100000	4: 100001 THRU HI	ROW TOTAL
1 LO THRU -0.151	COUNT	15	7	6	4	32
	ROW PCT	46.9	21.9	18.8	12.5	57.1
	COL PCT	60.0	46.7	75.0	50.0	
	TOT PCT	26.8	12.5	10.7	7.1	
2 -0.152 THRU -0.0	COUNT	10	8	2	4	24
	ROW PCT	41.7	33.3	8.3	16.7	42.9
	COL PCT	40.0	53.3	25.0	50.0	
	TOT PCT	17.9	14.3	3.6	7.1	
COLUMN TOTAL		25	15	8	8	56
		44.6	26.8	14.3	14.3	100.0

4 OUT OF 8 (50.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 3.429
RAW CHI SQUARE = 1.96389 WITH 3 DEGREES OF FREEDOM. SIGNIFICANCE = 0.5799
CONTINGENCY COEFFICIENT = 0.18407

* CROSSTABULATION OF *
IECA INCREASE FIRE COMPENSATION CATEGORIZED BY CITPOPA CITY POPULATION,1970 CATEGORIZED
* *

		CITPOPA				
	COUNT / ROW PCT / COL PCT / TOT PCT	10000 TO 25000 (1)	25001 TO 50000 (2)	50001 TO 100000 (3)	100001 THRU HI (4)	ROW TOTAL
IECA						
1		15	7	5	3	30
LO THRU -0.151		50.0	23.3	16.7	10.0	53.6
		60.0	46.7	62.5	37.5	
		26.8	12.5	8.9	5.4	
2		10	8	3	5	26
-0.152 THRU -0.0		38.5	30.8	11.5	19.2	46.4
		40.0	53.3	37.5	62.5	
		17.9	14.3	5.4	8.9	
COLUMN TOTAL		25 44.6	15 26.8	8 14.3	8 14.3	56 100.0

4 OUT OF 8 (50.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 3.714
RAW CHI SQUARE = 1.79008 WITH 3 DEGREES OF FREEDOM. SIGNIFICANCE = 0.6171
CONTINGENCY COEFFICIENT = 0.17600

APPENDIX H

1976

* CROSSTABULATION OF * * * * * * * * * * * * * * * * * * *
IPCA INCREASE POLICE COMPENSATION CATEGORIZED BY JOBACTS
* *

IPCA	JOBACTS		
COUNT / ROW PCT / COL PCT / TOT PCT	INCOME IN YEAR 0	YES THAT YEAR 1	ROW TOTAL
1	21	11	32
LO THRU -0.151	65.6	34.4	57.1
	55.3	61.1	
	37.5	19.6	
2	17	7	24
-0.152 THRU -0.0	70.8	29.2	42.9
	44.7	38.9	
	30.4	12.5	
COLUMN TOTAL	38 67.9	18 32.1	56 100.0

CORRECTED CHI SQUARE = 0.01535 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.9014
RAW CHI SQUARE = 0.17057 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.6796
CONTINGENCY COEFFICIENT = 0.05511

* C R O S S T A B U L A T I O N O F *

IECA INCREASE FIRE COMPENSATION CATEGORIZED BY JOBACTS

* *

IECA	COUNT / ROW PCT / COL PCT / TOT PCT	JOBACTS: NONE IN YEAR (0)	YES THAT YEAR (1)	ROW TOTAL
1 LO THRU -0.151		20 66.7 52.6 35.7	10 33.3 55.6 17.9	30 53.6
2 -0.152 THRU -0.0		18 69.2 47.4 32.1	8 30.8 44.4 14.3	26 46.4
COLUMN TOTAL		38 67.9	18 32.1	56 100.0

CORRECTED CHI SQUARE = 0.0 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 1.0000
RAW CHI SQUARE = 0.04199 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.8376
CONTINGENCY COEFFICIENT = 0.02737

COVALHOA

COUNT / ROW PCT / COL PCT / TOT PCT	15580 UNDER 18710 (1)	18710 TO 18775 (2)	18775 TO HI (3)	ROW TOTAL
PCA				
2 (5401 THRU 6800)	3	0	0	3
	100.0	0.0	0.0	1.4
	4.5	0.0	0.0	
	1.4	0.0	0.0	
3 (6801 THRU 8300)	46	6	7	59
	78.0	10.2	11.9	28.4
	68.7	9.7	8.9	
	22.1	2.9	3.4	
4 (8301 THRU 9600)	17	23	27	67
	25.4	34.3	40.3	32.2
	25.4	37.1	34.2	
	8.2	11.1	13.0	
5 (9601 THRU HI)	1	33	45	79
	1.3	41.8	57.0	38.0
	1.5	53.2	57.0	
	0.5	15.9	21.6	
COLUMN TOTAL	67	62	79	208
	32.2	29.8	38.0	100.0

3 OUT OF 12 (25.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.894
RAW CHI SQUARE = 99.18835 WITH 6 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CONTINGENCY COEFFICIENT = 0.56824

NUMBER OF MISSING OBSERVATIONS = 16

* C R O S S T A B U L A T I O N O F *

FCA BY COVALHOA COUNTY VALUE HOUSING CATEGORIZED

* *

FCA	COVALHOA COUNT ROW PCT COL PCT TOT PCT	UNDER 15580 1	15939 TO 18710 2	18775 TO HI 3	ROW TOTAL
5401 THRU 6800	2	4 100.0 6.8 2.1	0 0.0 0.0 0.0	0 0.0 0.0 0.0	4 2.1
6801 THRU 8300	3	37 75.5 62.7 19.8	9 18.4 14.8 4.8	3 6.1 4.5 1.6	49 26.2
8301 THRU 9600	4	12 18.8 20.3 6.4	23 35.9 37.7 12.3	29 45.3 43.3 15.5	64 34.2
9601 THRU HI	5	6 8.6 10.2 3.2	29 41.4 47.5 15.5	35 50.0 52.2 18.7	70 37.4
	COLUMN TOTAL	59 31.6	61 32.6	67 35.8	187 100.0

3 OUT OF 12 (25.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 1.262
RAW CHI SQUARE = 76.26010 WITH 6 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CONTINGENCY COEFFICIENT = 0.53822

NUMBER OF MISSING OBSERVATIONS = 37

APPENDIX E
1975-1978

* C R O S S T A B U L A T I O N   O F *
PCA   BY CITPOPA   CITY POPULATION 1970 CATEGORIZED
* *

PCA	CITPOPA COUNT ROW PCT COL PCT TOT PCT	10000 TO 25000 1	25001 TO 50000 2	50001 TO 100000 3	100001 THRU HI 4	ROW TOTAL
5401 THRU 6800	2	3	0	0	0	3
		100.0	0.0	0.0	0.0	1.4
		3.3	0.0	0.0	0.0	
		1.4	0.0	0.0	0.0	
6801 THRU 8300	3	43	15	1	0	59
		72.9	25.4	1.7	0.0	28.4
		47.3	25.4	3.2	0.0	
		20.7	7.2	0.5	0.0	
8301 THRU 9600	4	32	19	12	4	67
		47.8	28.4	17.9	6.0	32.2
		35.2	32.2	38.7	14.8	
		15.4	9.1	5.8	1.9	
9601 THRU HI	5	13	25	18	23	79
		16.5	31.6	22.8	29.1	38.0
		14.3	42.4	58.1	85.2	
		6.3	12.0	8.7	11.1	
	COLUMN TOTAL	91 43.8	59 28.4	31 14.9	27 13.0	208 100.0

4 OUT OF 16 (25.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.389
RAW CHI SQUARE = 66.12119 WITH 9 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CONTINGENCY COEFFICIENT = 0.49113

NUMBER OF MISSING OBSERVATIONS = 16

* * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * * *

ECA BY CITPOPA CITY POPULATION 1970 CATEGORIZED

* *

ECA	COUNT / ROW PCT / COL PCT / TOT PCT	CITPOPA 10000 TO 25000 (1)	25001 TO 50000 (2)	50001 TO 100000 (3)	100001 THRU HI (4)	ROW TOTAL
5401 THRU 6800	2	4	0	0	0	4
		100.0	0.0	0.0	0.0	2.1
		5.3	0.0	0.0	0.0	
		2.1	0.0	0.0	0.0	
6801 THRU 8300	3	35	12	2	0	49
		71.4	24.5	4.1	0.0	26.2
		46.7	22.6	6.7	0.0	
		18.7	6.4	1.1	0.0	
8301 THRU 9600	4	24	21	12	7	64
		37.5	32.8	18.8	10.9	34.2
		32.0	39.6	40.0	24.1	
		12.8	11.2	6.4	3.7	
9601 THRU HI	5	12	20	16	22	70
		17.1	28.6	22.9	31.4	37.4
		16.0	37.7	53.3	75.9	
		6.4	10.7	8.6	11.8	
	COLUMN TOTAL	75	53	30	29	187
		40.1	28.3	16.0	15.5	100.0

4 OUT OF 16 (25.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.620
RAW CHI SQUARE = 54.57074 WITH 9 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CONTINGENCY COEFFICIENT = 0.47529

NUMBER OF MISSING OBSERVATIONS = 37

APPENDIX N

1975-1978

* C R O S S T A B U L A T I O N O F *

PCA BY JOBACTS

* *

PCA	COUNT / ROW PCT / COL PCT / TOT PCT	JOBACTS: NONE IN YEAR 0	YES THAT YEAR 1	ROW TOTAL
5401 THRU 6800	2	3	0	3
		100.0	0.0	1.4
		1.9	0.0	
		1.4	0.0	
6801 THRU 8300	3	49	10	59
		83.1	16.9	28.4
		30.6	20.8	
		23.6	4.8	
8301 THRU 9600	4	53	14	67
		79.1	20.9	32.2
		33.1	29.2	
		25.5	6.7	
9601 THRU HI	5	55	24	79
		69.6	30.4	38.0
		34.4	50.0	
		26.4	11.5	
	COLUMN TOTAL	160	48	208
		76.9	23.1	100.0

2 OUT OF 8 (25.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.692
RAW CHI SQUARE = 4.70105 WITH 3 DEGREES OF FREEDOM. SIGNIFICANCE = 0.1950
CONTINGENCY COEFFICIENT = 0.14867

NUMBER OF MISSING OBSERVATIONS = 16

* * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F *

FCA BY JOBACTS

* *

FCA	COUNT / ROW PCT / COL PCT / TOT PCT	JOBACTS: NONE IN YEAR 0	YES THAT YEAR 1	ROW TOTAL
5401 THRU 6800	2	4	0	4
		100.0	0.0	2.1
		2.9	0.0	
		2.1	0.0	
6801 THRU 8300	3	42	7	49
		85.7	14.3	26.2
		30.2	14.6	
		22.5	3.7	
8301 THRU 9600	4	49	15	64
		76.6	23.4	34.2
		35.3	31.3	
		26.2	8.0	
9601 THRU HI	5	44	26	70
		62.9	37.1	37.4
		31.7	54.2	
		23.5	13.9	
	COLUMN TOTAL	139	48	187
		74.3	25.7	100.0

2 OUT OF 8 (25.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 1.027
RAW CHI SQUARE = 9.70616 WITH 3 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0212
CONTINGENCY COEFFICIENT = 0.22213

NUMBER OF MISSING OBSERVATIONS = 37

VITA

Deborah D. Gross was born and raised in Norfolk, Virginia. She attended public school, elementary and secondary, as well as college in the city of Norfolk. In 1967, she graduated from Old Dominion University with a B.A. in sociology. That same year, Deborah began work as a professional social worker for the city of Virginia Beach, Department of Social Services. Following three years of employment with Virginia Beach, Deborah worked one year for the Norfolk Housing and Redevelopment Authority.

The next ten years were devoted to raising two daughters and being involved in community affairs. These activities included P.T.A., public speaking for the American Cancer Society, active membership in the League of Women Voters, and holding an officer's position in her church.

In 1978, Deborah enrolled in the M.B.A. program at Y.S.U., attending classes on a part-time basis. Graduation is anticipated in June, 1981, with a degree in management.