Privatization in Higher Education: Contracting for Services at Public Colleges and Universities

Presented to the Public Administration Faculty
at the University of Michigan-Flint
in partial fulfillment of the
requirements for the
Master of Public Administration Degree

W. Matthew Kelley

August 1990

First Reader Charles T. Weber
(Charles T. Weber, Ph.D.)

Second Reader Albert C. Price
(Albert C. Price, Ph.D.)

Privatization in Higher Education: Contracting for Services at Public Colleges and Universities

Abstract

During the Reagan presidency, a wide variety of **privatization** alternatives were examined. Among these was **contracting for services**, an alternative already in use for many years at the state and local level. Contracting for services has also been used by colleges and universities throughout this country, and remains a major focus for facilities managers at these institutions.

Survey data from colleges and universities through this country were examined to determine if: 1) the amount of contracting varied by institution size; 2) the amount of contracting varied by region of the country; and 3) the amount of contracting varied with the relative degree of unionization.

The results of the analysis indicate that 1) large institutions contract to a lesser extent than do small and medium institutions; 2) the extent of contracting does vary by region, with the Midwest region contracting to a greater extent than the Southwestern, Central, Rocky Mountain and Pacific Coast regions; 3) the differences in the extent of contracting for services between institutions with non-union, mixed, or union workforces was not statistically significant.

Table of Contents

Figures and Tables

Figures

Tables

Privatization in Higher Education: Contracting for Services at Public Colleges and Universities

Section I Introduction

When Ronald Reagan came to the White House, one of his avowed purposes was to "get the government off the backs of the people." One of the tools held out to serve this end was Privatization. Although exact definitions vary, the rubric of privatization covers a variety of alternatives for the production and/or provision of traditionally governmental services. These range from the more radical proposals, including divestiture of government enterprises such as the postal service, to the commonplace option of contracting for services, such as waste collection and snow removal. It is largely on the latter alternative, contracting for services, that this research project focuses.

Although the Reagan presidency prompted the examination of a wide range of privatization alternatives, their implementation at the federal level has been limited for a variety of reasons. Contracting for services, on the other hand, has been in use for many years at the state and local level. (Poole & Fixler, 1987) Likewise, this alternative has been used to varying degrees by the publicly funded colleges and universities of this country.

Current literature suggests relationships between the degree of contracting by local governments, and the following variables: the size of communities, the region of the country, and the degree of employee unionization. (Ferris & Graddy 1986)(Poole & Fixler 1987)(Florestano & Gordon 1980) The underlying assumption of this project is that similar relationships may exist for public colleges and universities. Contracting for services remains a major issue for facilities managers in higher education (APPA, 1990), and verification of these relationships provides useful information to those responsible for the provision and planning of services, particularly if we continue to experience the fiscal constraints of recent years.

In the sections that follow, an overview of privatization is presented, followed by a closer examination of the issues related to contracting for services. This provides the background for an explanation of the research undertaken for this project. The research includes the analysis of survey data from institutions throughout the country to determine if the extent of contracting varies with institution size, region, or relative extent of workforce unionization.. The final sections include a discussion of the data analysis, and the results of the analysis. Finally, the conclusions that may be drawn from the data analysis are presented, along with suggestions for future research.

Section II An Overview of Privatization

Since the advent of the Reagan presidency, Privatization has remained a controversial topic of discussion. Its supporters come from a variety of viewpoints. Some are practitioners, seeking ways pragmatically to provide governmental services better or less expensively. Some operate from a strong ideological posture, seeing in privatization methods to reduce the size and scope of government. For President Reagan, privatization was a major tool toward that end, and one that he promoted though the end of his second term. (Reagan, 1988) Starr (1989) states that it "represents the most serious conservative effort of our time to formulate a positive alternative" to the growth of government.

Opponents of privatization likewise have diverse reasons for their position. Public unions oppose privatization because of the loss of union jobs that may occur. Some public administrators see in privatization a threat to their power and position. Other people oppose privatization because of the potential threat to individual rights, or the possibility that privatization will have a disproportionate effect on certain groups, such as minorities or the poor.

This section provides an overview of the various issues involved in privatization. First, "Privatization" is defined; then the Production/ Provision distinction is discussed, followed by an examination of the reasons for the growth of privatization. Next the reasons to avoid

privatization are presented, followed by a review of the types of privatization. Finally, the issues related to privatizing production are more closely examined.

Privatization Defined

The term privatization is a relatively new word; prior to 1979 there was no significant mention of the term in economic or political literature. (Pirie 1988) Savas (1987) notes that the term first appeared in a dictionary in 1983, with a relatively narrow definition concerning a change from public to private ownership. That definition was similar to Hanke's: "The transfer of assets or service functions from public to private ownership or control." (Hanke, 1987) Paul Starr's definition more narrowly address a shift in *production* of goods and services from the public sector to the private sector. (Starr 1987) Savas (1987) suggests that the term has taken on a broader meaning, when he defines it as "the act of reducing the role of government, or increasing the role of the private sector, in an activity or in the ownership of assets." This definition, while admittedly couched in terms that support his perspective, is a useful one nonetheless. It pinpoints the controversy of the broader issue; *the reduction of the role of government, and the increased role of the private sector.*

For the purposes of this project, however, Starr's definition is perhaps of greater utility, because it speaks to the *production* issue. For the public administrator at the local level, be that a municipality

or a university, the shift of production to cheaper or better alternatives (at the same or less cost) is the real issue.

Production and Provision of Goods and Services

One potential area of confusion in any discussion of privatization can result from the failure to distinguish between the *provision* of goods and services and the *production* of goods and services. The two can and should be quite clearly separated. Kolderie (1986) offers an analysis that is useful for distinguishing between provision and production.

Production is concerned with labor and materials inputs that result in some output that is the service or good rendered to the community or individual. It's concerned with the equipment and facilities necessary to do the work, as well as the management of the work. The production can be private or public.

Provision, in comparison, is concerned with policy making, and choosing what and how much to have produced. It is also concerned with regulation and finance, franchising and subsidizing. It too can be public or private, but there are distinctive differences. According to Kolderie (1986), private provision occurs when:

1) Private organizations or individuals make decisions about what goods and services they desire
2) Having made a choice, they pay entirely from their own funds

3) Individuals and private organizations choose the producer themselves

Public provision occurs, in contrast, when:

1) Governmental units make political decisions about what goods and services to provide, to whom and in what quantity
2) The governmental units provide direct financing
3) The governmental units select the producer of the goods and services

We have, then, four potential combinations of public and private production and provision. For Kolderie these represent a four-part topology, which is outlined graphically below.

Case 1 occurs when a governmental unit performs both provision and production. An example would be the situation in which a city owns a steam generating plant which provides heat for municipal buildings.

Case 2 occurs when provision is public, but production is private, as when a privately-owned utility provides steam to a governmental unit.

Case 3 is the reverse, when provision is private and production is public. An example of this occurs in Lansing, MI, where the city

utility produces steam and sells it to private firms in the downtown area.

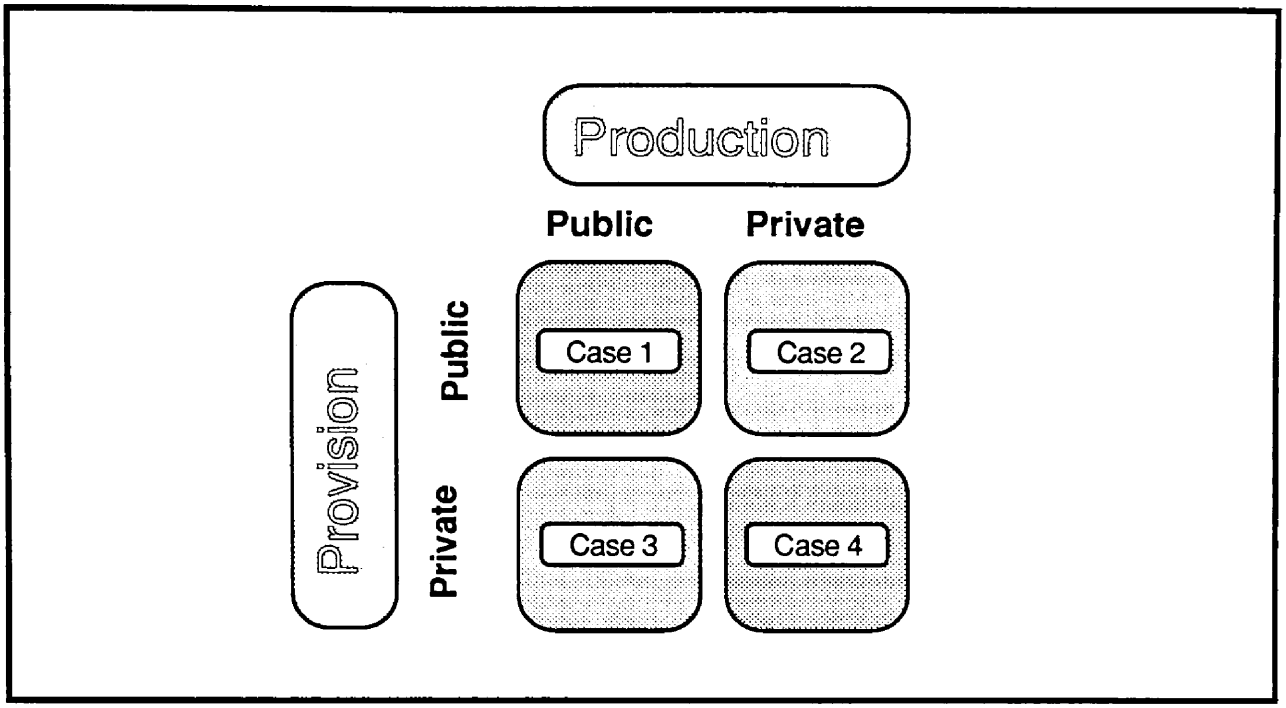

Figure 2-1 Kolderie's Four-Part Topology For The Production & Provision of Services

Case 4 is the purely private case. The GM steam generating plant at Buick City in Flint, MI is an example of this situation, in which provision and production are private.

Kolderie also notes that there can be mixed cases, in addition to the four cases above. For instance, a service could be provided with the governmental unit paying part of the cost, and the consumer directly paying part of the cost.

In addition, Kolderie makes an important point: even when production is privatized, the fact that provision is still publicly directed makes it possible to maintain the same social commitment as if production were still public. (This assumes, of course, that the social commitment existed in the first place.)

Pack (1987), in a similar vein, writes that public intervention has three elements, each of which can be privatized. Her **public finance** and **public production** elements correspond to Kolderie's provision and production, but she adds **regulation** as a third element. **Deregulation** is the result of privatizing governmental regulation, and this past decade has witnessed a significant amount of deregulation.

The topology for service delivery modes developed by Sonenblum, Kirlin and Ries (1977) also contains elements similar to Kolderie's. The four modes of service delivery they developed are 1) Consolidated, 2) Contract, 3) Regulated, and 4) Grant. Each of the modes has three elements that a given actor performs. The elements are a) finance. b) planning and c) production. The actors are different levels of government, or the private sector. The topology is graphically expressed in Figure 2-2.

The consolidated mode, with the actor being either government or private, corresponds to Kolderie's Case 1 and Case 4, respectively. The contract mode, with the governmental unit providing finance and planning (provision) but not production, corresponds to Case 2.

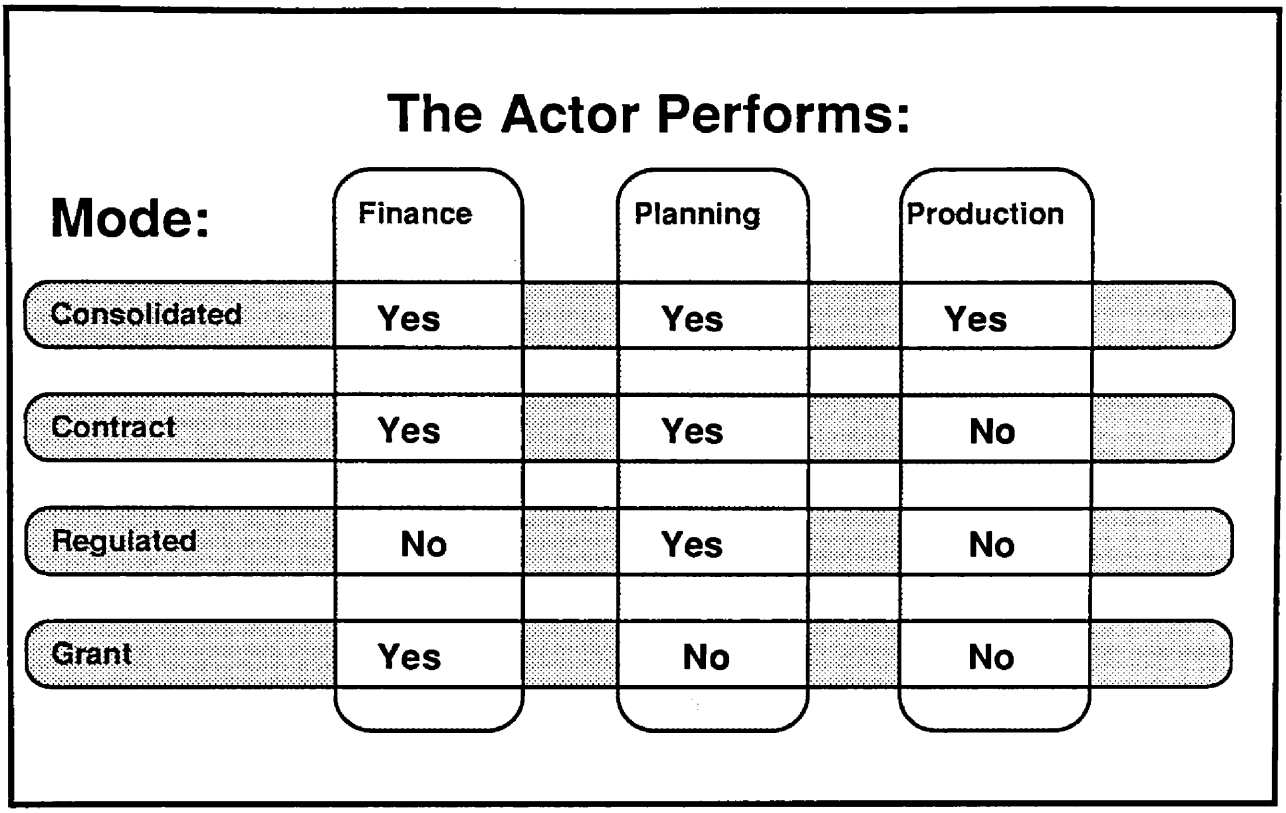

Figure 2-2 Sonnenblum, Kirlin & Ries' Typopogy for Service Delivery Modes

The regulated and grant modes are not as clear cut. The regulated mode, with the governmental unit performing planning, but not finance or production, leans a bit toward Kolderie's Case 3. Grant, depending upon whether finance is governmental or private, leans toward Case 2 or Case 3.

Regardless of whether we are looking at Kolderie's four cases, Pack's three elements, or Sonnenblum et al's three elements, all clearly separate the **production** function from the **provision** function and its parts, that is, finance, planning and regulation. This separation is critical, for it allows an examination of the advantages and

disadvantages of privatizing production versus the advantages and disadvantages of privatizing provision.

Public and Private Goods

A brief discussion of the nature of public and private goods may be of some usefulness here. Public goods, although variously defined, are typically defined as those goods which are indivisible, nonexclusionary and difficult to price in the market place. One common example is a sidewalk on a public street: if it is open to one person, it is open to all, the use by one doesn't diminish the amount available to others, and it is difficult to set a market price on one crossing of a sidewalk. One of the things that makes it difficult to set market prices for public (and private) goods is the extent of externalities present. When the cost of an item doesn't reflect all of the value of the good or the resource inputs, an externality is said to exist. One common example of a positive externality is public education, which has a social value that is very difficult to price in the market. (Bozeman 1987)

Private goods, in contrast, tend to be exclusionary, divisible, and priceable in the market. A piece of pie in a private club coffee shop may not be equally available to everyone, its sale reduces the amount available to others, and it is easily priced in the market.

Bozeman (1987) suggests that most public goods tend to fall somewhere between the pure public good and the pure private good,

and in fact may be more private in some aspects and more public in others.

The Growth of Privatization

That there has been significant growth in privatization is without question. At the municipal level alone, contracting for services, which amounted to $22 billion in 1972, grew to $66 billion in 1980. Further, it has been estimated that contracting with the private sector will reach $3 trillion by the end of the decade if current growth continues. (Moore 1987)

The reasons for the growth of privatization are as varied as its supporters. Some of the reasons are ideological; some are pragmatic, but all have tended to support increased privatization.

The Reduction of Government

Many of those who support privatization do so because they see in privatization methods to limit or reduce the size of government. Among this group are those, such as Savas (1982), who are concerned about the "hazards of an overly dominant government." Others see privatization as a tool to return more control to the citizens at the local level. (Armington and Ellis, 1984) Salamon (1989) has suggested that part of the support for the reduction of government is a "backlash against activist government in the 1980's," due to disappointment with the effectiveness and cost of government programs. This backlash generated support for various types of

privatization. For whatever the specific reason, those wanting to limit government have been supporters of privatization.

Yet despite the support for privatization as a means to limit government, there are those who suggest that government growth has been significant "at the margin," i.e. among the very contractors and consultants who work for government. One estimate suggests that more people work for government under contract through private firms than are employed directly by the government. (Sharkansky 1980) Contracting also enables governmental units to continue to get the work done in the face of personnel freezes or staff reductions. This would seem to suggest that while privatization may reduce the numbers working in government, it doesn't necessarily reduce the numbers of people working *for* government.

The Economic Rational

Much of the broad support for privatization stems from an economic rational. Bailey (1987) notes that the common thread throughout the various concepts of privatization is that of increasing efficiency. Government is perceived, even among government officials, as being less efficient than the private sector. (Pack 1987) A number of elements contribute to the supposed inefficiencies of government. These include the monopolistic nature of government services, the lack of a bottom line in public service provision, and the self-serving behavior of public administrators who lack a vested interest in the efficient operation of their units.

One of the primary dangers of any monopoly is the lack of competition. Without competition, there is little or no incentive toward efficiency and cost control. Savas (1982) calls competition "one of the most fundamental determinants of the efficiency of any (service) arrangement," and suggests that the degree of competition permitted by a service arrangement is a major determinant of the efficiency of that arrangement.

The lack of a bottom line in government service is also of concern. In the government monopoly, cost of operation is simply passed along to the taxpayer; no profit is lost if the bottom line is not met. With no bottom line, there is little incentive to improve, to be more efficient. Public administrators have not been able to find a public sector equivalent of the incentives for efficiency and cost consciousness found in private business. (Campbell 1986) Another cause of inefficiency that goes hand-in-hand with the lack of a bottom line is the lack of a vested interest on the part of governmental officials. Public officials allocate resources that do not belong to them, in which they have little or no vested interest. Compared to their private counterparts, the cost of decisions tend not to bear as heavily upon public officials. Public officials can more easily engage in shirking behavior because "Taxpayer-owners" do not monitor the behavior of public officials to the extent that private owners do. (Hanke 1985) Hence, public managers have less incentive toward efficiency in their operations.

Likewise, public managers engage in self-serving behavior just as their private counterparts do. They tend to increase the size of their operations, because typically a larger department means more pay and status. But unlike the marketplace, there are few available alternatives to the public monopolies, and the public interest is less likely to benefit from the self-serving behavior of public officials (Davies 1977)

The "common thread" of proposals to increase efficiency in the public sector typically translates as the introduction of private competition into government. This takes a number of forms, of which contracting is perhaps one of the most common.

The Taxpayer Revolt

The taxpayer revolts in the late 1960's and early 1970's have also been cited as a contributor in the growth of privatization. The resistance to additional taxes or rollbacks in existing taxes forced government officials to find ways to cut back, and privatization accelerated at the state and local levels during this period. (Kent 1987) Poole and Fixler (1987) found that local governments were more likely to privatize during time of budgetary constraint. Kent (1987) also notes that privatization "works" at the local level, and is less costly and is acceptable to the public.

The net result of all these factors was the massive growth of privatization at the local level, as noted at the start of this section.

Reasons to Avoid Privatization

Several authors have presented reasons to avoid privatization. Written largely from a philosophical or ideological viewpoint, these reasons range from concerns about the blurring of the private/public sectors, to concerns about the threat to constitutional rights.

Private/Public Sector Blurring

The differences, or lack thereof, between the public and private sectors is of some relevance in any discussion of privatization. The move to privatize government functions has the implicit view that the private and public sectors are alike, at least to the extent that both are subject to the same set of economic incentives. (Moe 1987)

Barry Bozeman, in All Organizations Are Public, argues for a lack of difference between the sectors. He proposes the notion of *publicness*, in which all organizations of public to some degree or other. The location of an organization on a *publicness-privateness dimension* is determined by the extent to which it exerts or is constrained by political authority or economic authority. Those organizations (or elements thereof) that are constrained by political authority have a higher degree of publicness. Conversely, those organizations (or elements thereof) that are constrained by economic authority are deemed to have a higher degree of privateness. No organization is

purely public or purely private; the key issue "is to determine the mix of authority for the organization". (Bozeman 1987)
Moe takes quite the opposite view, hewing instead to the more traditional view that "it is in the essentials that they differ, and these distinction cannot be glossed over or taken lightly."

For Moe, the single most important distinction between the sectors is the concept of sovereignty, particularly at the federal level. Private sector organizations do not possess the rights and immunities that a sovereign does. According to Moe, the rights and immunities ascribed to a sovereign generally include the following:

-The sovereign has the legitimate right to use coercion to enforce its will. (Only a sovereign can levy taxes, and impose penalties on those who refuse to pay.)

-Only a sovereign may legitimately go to war with another sovereign. (General Motors cannot legitimately declare war on Japan, for instance.)

-Sovereigns can do no wrong. (A sovereign cannot be sued without its permission; permission is not required to sue a private person or organization.)

-A sovereign is indivisible. Sovereignty cannot be shared. (The American Civil War was fought in part because Lincoln argued

for the concept of indivisible sovereignty and the South argued for dual sovereignty.)

-A sovereign may disavow debits but cannot go bankrupt. (The right to declare bankruptcy is a personal or private right, which doesn't inhere to the sovereign.)

-The sovereign has the right to establish the rules for protection and transfer of property, both public and private. (The sovereign can take property through "eminent domain;" a private party cannot do so. The sovereign also provides the safeguards for the transaction of business.)

Given that Moe is correct in this analysis, the sovereignty issue doesn't necessarily proscribe privatization. While General Motors cannot declare war, its various divisions can and do provide the government with some of the vehicles, electronics and other equipment necessary to engage in warfare. Quite clearly one can list numerous other functions of government which do not require the use of sovereign powers, and which also can be taken over or supplied by the private sector.

Weakening of Political Accountability

The weakening of political accountability when a public function is assigned to a private contractor is also a concern to some. Moe (1987) suggests that holding public officials accountable for their

actions is a "major societal value" in a constitutional democracy, and privatizing a public function leads to an "inevitable" weakening of accountability. A public agency, in theory, is directly accountable to public officials, who are in turn accountable to the voters, but a private firm is at best only indirectly accountable to those same officials. The result, then, is less control over the work being performed, and a lessened ability for citizens to hold public officials accountable when privatized services don't meet expectations.

There are those, of course, who would take issue with the notion that greater accountability exists under direct government provision. Savas (1982) notes that those who fear a loss of accountability "seem unaware of the difficulty of holding anyone accountable in government." Laments about the "faceless bureaucrat" who is insensitive to the plight of citizens are common through history.

There are even those who hold that, at least at the local level, contracting for services can in fact improve responsiveness and accountability to the citizen. (Armington and Ellis, 1984) If the citizens are unhappy with the quality or level of service provided, they can through their local representative choose to rid themselves of the unsatisfactory contractor, and put in its place a better provider. This is a situation unlikely to happen with provision by public employees. (There several unstated caveats in Armington and Ellis's position, the first and foremost being that there are multiple, qualified contractors available to step in. If a monopoly exists, or if there are significant barriers to entry, a change becomes difficult.

Also of importance would be a well-specified contract with short terms or an escape clause.)

Threats to Citizenship and Community

Privatization is viewed by some to be a potential threat to citizenship and community. Morgan and England's (1988) concerns follow these lines: Dramatic changes have occurred in society since World War II. As economic conditions generally improved, technology advanced and mobility increased, people became more concerned with their private activities, with a corresponding decrease in concern for others and a reluctance to sacrifice for social ends. Local government, the dispenser of services social and otherwise, now under increasing economic pressure, examines privatization alternatives as a means of improving efficiency and effectiveness. Increased privatization, with its reliance on the marketplace and self-interest, can further erode citizenship and community.

Morgan and England do not take the posture that all privatization is necessarily hazardous. They acknowledge that arrangements for governmental "housekeeping" activities, such as waste removal, that provide greater competition and result in greater efficiency are useful as long as equity and accountability are not ignored. They are concerned that even contracting this type of service places citizens in a passive mode, which doesn't promote the increase in citizenship and community that are desired.

Threats to Constitutional Rights

Privatization can, under certain circumstances, threaten constitutional rights. Harold Sullivan (1987) makes a cogent argument that some rights protected under the Constitution are not necessarily protected when production and/or provision are shifted to the private sector. Two doctrines that have bearing here are the *State Action* doctrine and the *State Functions* doctrine.

The State Action Doctrine

The Fourteenth Amendment ensures the right to due process, at least as far as actions of the state upon citizens are concerned; but the Supreme Court has found, in its interpretation of the State Action doctrine, that a private agency is free of the restraints placed upon government actions when the agency acts on its own, without government participation.

Based upon his review of pertinent case law, Sullivan draws the clear conclusion that an individual served by or employed by a private agency is not granted constitutional protection, even if the agency is authorized or funded by the government, or if its conduct is directed by state regulation. Constitutional protection applies only if a government official is directly involved in a specific action, or if the state compels a specific determination about a specific client or

employee. The net effect is this; by privatizing public services, a government can avoid most constitutional restrictions on those services.

The State Functions Doctrine

It should be noted that courts continue to recognize some circumstances in which constitutional protections cannot be evaded by privatization. The courts have found that a private agency is restricted by the Constitution, just as the state would be, when it performs "traditional public functions." (Sullivan 1987) In these kinds of cases, the conduct of a traditional public function by the private entity is substituted for the conduct of that function by the government. As a result, no direct involvement of the state is necessary in order for constitutional protections to hold.

As useful as this might sound, however, Sullivan indicates that Supreme Court decisions have severely limited the state functions doctrine. What has emerged from the Court, through the course of several decisions, is a fairly restrictive two-part test that must be met before the actions of a private agency are restricted by the Constitution. Sullivan summarizes the test in this manner:

> First, the power in question is one that has traditionally been exercised by the government alone, and second, the government must have abdicated total and unreviewable control over the

> exercise of the exclusive governmental function to a third party. If the government retains some control over some elements of the function in question, the private party is free from constitutional restraints as it exercises its share of what has been solely a public responsibility.

The second part of this test is the restrictive one. If the government retains any control at all over the function, then constitutional restraints apply only to the state's actions; the private agency operates unfettered.

The result of the Court's actions regarding these two doctrines is this: when a function is privatized, the private agency enjoys wide discretion in its relationship with clients and employees. Neither the person being served or an employee of the agency enjoy the same constitutional protections they would if the function was still performed by the government. Due process in dealing with the agency is not necessarily guaranteed to the client. Due process or free speech in employment is not necessarily guaranteed to the employee. According to Sullivan, if constitutional rights are to be protected, than the discretion allowed private agencies when a public function is privatized must be severely restricted, else "privatization and protections of civil liberties may prove to be mutually exclusive goals." (Sullivan 1987)

Forms of Privatization

There are several forms of privatization. One of the most controversial is **asset divestiture.** Frequently proposed at the federal level, divestiture involves selling government assets and state owned enterprises (SOE's) to the private sector. Federal assets proposed for divestiture have included the Postal Service, Conrail, federal power administrations such as TVA, and FHA and student loan portfolios. (Seader 1986) Sale of SOE's, while not particularly common in the United States, has been much more significant in the United Kingdom through the efforts of the Thatcher administration. (Kent 1987) (Asher 1987) One of the perceived advantages of asset divestiture is at the same time one of its drawbacks. The sale of an asset generates cash flow, and in recessionary times cash can be critical. The other side of this coin, however, is the fact that this cash infusion is a one-time event. The short-term cash flow is traded for potential long-term income.

Load shedding generally involves the reduction or elimination of a function. This may be through complete or partial withdrawal of the function, such as would occur if a city decided to stop picking up waste from commercial customers. Another version of load shedding is reduced financing, with the recipient of the function absorbing a greater portion of the cost. When the county parks systems starts charging user fees for admission to park areas, we experience this type of load shedding.

Contracting for services is the most common privatization option in the United States. In this option, the governmental unit contracts with another entity (most commonly from the private sector) for the production of goods and services. President Reagan and the President's Private Sector Survey on Cost Control (the Grace Commission) focused great attention on the private production of public services, but this option clearly predates the Reagan administration. (Pack 1987) For example, Kolderie (1986) notes that since the 1960's, contracting has been a common part of the growth of human service programs. The tax limitation initiatives of the 1960's and 1970's spurred interest in privatization and contracting as a way to reduce costs. Hanrahan (1983) suggests that there has been "a decisive trend toward government by contract" since the second world war. Despite these more "recent" examples, contracting is really not new; it's been around for many years.

Examples of contracting by government abound. One quite literally needs only look around to find examples. Traditionally, the private sector has been the builder of infrastructure improvements. Private contractors have build the transportation and utility systems in this country. They have built the buildings in which we conduct government and educate our children. In many instances, portions of the infrastructure are maintained by the private sector as well.

Contracting for military supplies and equipment has a long, if somewhat spotted record in this country. In fact, this type of

contracting is as old as the Republic. George Washington complained about military supply contractors long before William Proxmire awarded the first "Golden Fleece." (Sharkansky 1980) In the present day, the Department of Defense issues close to 15 million contracts for the acquisition of materials and services each year. (Kent 1987)

Sharkansky (1980) comments that the extensive use of contractors to do the work of government is "distinctly an American style." Given the American tradition of free enterprise, this observation should not be too surprising. The private production of goods and services through contracting is firmly entrenched at all levels of government. In the next section, the problems and benefits of privatizing production will be examined.

Privatizing Production: Problems and Benefits

The privatization of production, particularly through contracting, carries with it a variety of potential problems and benefits. In this section, the problems will be examined first, along with the response of supporters to the various problems. In a similar manner, the benefits of privatizing production will be presented.

The Problems of Privatizing Production

Monopolies

One of the claimed advantages of contracting is the elimination of government monopolies. We are warned, however, to watch for hidden monopolies when contracting. (Bailey 1987) The problems caused by lack of competition in government are equally troublesome if monopolies develop when a service is turned over to the private sector. The private monopolist will be no more efficient then the public one, because inefficiency is "a natural consequence of a monopoly system." (Savas 1974)

Creaming

Creaming, or cream skimming, in the context of privatization, refers to the situation in which a contractor might prefer to serve the less expensive, more profitable portions of an operation, leaving the more expensive portions to be served by the government, or not at all. A mass transit operation is a frequent example. (Savas 1987) In this scenario, the contractor would bid on what some would consider the "cream"; for instance, peak time supplemental bus service. Creaming frequently has a negative connotation, but in come cases, an agency can actually save money by allowing creaming. In this mass transit example, money can be saved because the agency doesn't have to maintain extra buses and drivers to serve just a few hours of peak load.

To those who suggest that less profitable portions will be neglected by a contractor, Kolderie (1986) responds by noting that the government, as the buyer of goods and services, can get exactly what it wants. The government can specify that services be provided at certain levels at certain times in certain areas. In the mass transit example, the "cream" of the peak time supplemental service can be tied to less profitable routes, like those with lower ridership or odd hours. Even with the less profitable portions of the operation, a good contractor can profit, by carefully matching ridership with equipment size.

Lowball Bidding

Lowball bidding occurs when a contractor bids the first year of a contract low in order to secure the contract, then raises the cost in subsequent years when the governmental unit is locked into using a contractor. This is a particular problem when there are few alternative contractors, or when the cost of entry is high enough to keep out most perspective contractors. Possible solutions include avoiding short term contracts, thereby committing a contractor to provide service over a longer time frame. This could be in the form of multi-year contracts with fixed rates, or strict limits on increases; but care must be taken to ensure that the contract can be terminated if problems occur. Another possible solution is for the governmental unit to retain ownership of the core facilities and equipment, thereby

lowering the cost of entry for new contractors. (Poole and Fixler 1987)

Corruption

Corruption is a problem far older then the Republic. Indeed, a high percentage of the corruption that has occurred throughout American history involved contracts between the government and private providers. (Moe 1987) This doesn't mean that all contractors are dishonest; what it does mean is that the government must be ever vigilant, ensuring that noncompetitive conditions do not occur, and ensuring that its own officials do not fall victim to corrupt practices. Care is required on both the private and public sides, because the problem is, as Savas (1982) notes, a symmetrical one, affecting both sectors equally.

Transition Costs

The potential cost of transition from public to private production is a very real problem, often overlooked. Such costs can include labor problems (including possible lawsuits), failure of the contractor to deliver a satisfactory product, and the disruption that may occur during transition. (Bailey 1987) Careful specification of the contract and planning of the transition should help reduce the impact.

Service Disruption

Disruption of service is another oft-heard complaint against contracting; but here too, the problem is symmetrical. Labor disruptions can occur whether production is public or private. (Ferris and Graddy 1986) A strike by public employees can be as disruptive as a strike by private employees. A strike by private employees can actually be less disruptive if there are multiple contractors with different union contracts, or non-union work-forces. In any case, the public sector has no special advantage in this area, except in those states which prohibit public employee strikes. The effectiveness of such prohibition, of course, is open to question.

Service disruption can also occur if a contractor determines that a contract is unprofitable, and abruptly ceases operations. The problem can be mitigated by having multiple contractors, and through careful specification of the contract to include performance bonds.

Loss of Scale Advantage

The loss of scale advantage is sometimes listed as a problem with contractors. Beyond that statement, however, the discussion is largely a matter of perspective. Bailey (1987) notes that efficiency through competition is best served by small scale contractors, but that efficiency though economies of scale is best achieved by large

scale operations. He cites as an example waste collection in New York City:

Waste collection in New York is a massive operation. As the major purchaser of sanitation trucks in America, New York can negotiate lower per-unit costs through bulk purchases. They have a distinct advantage due to the scale of the operation, compared to a private contractor with a smaller operation.

There is, however, a problem with Bailey's example. New York is a singular entity; even the other major cities might not have such economies of scale. It is most likely that the majority of cities, towns and townships in this country would have quite a different scale problem. Their scale is limited by the political boundaries of the governmental unit, and in many cases those boundaries are too small for economies of scale. Here a private firm has the advantage because it is not limited by political boundaries. (Spann 1977) (See Figure 2-3.)

Residents of a typical township may see an example of this on a weekly basis. Household waste is picked up by a local contractor who, through the course of the week, sends his trucks to a number of cities and townships. The contractor has economies of scale that the township could never hope to achieve.

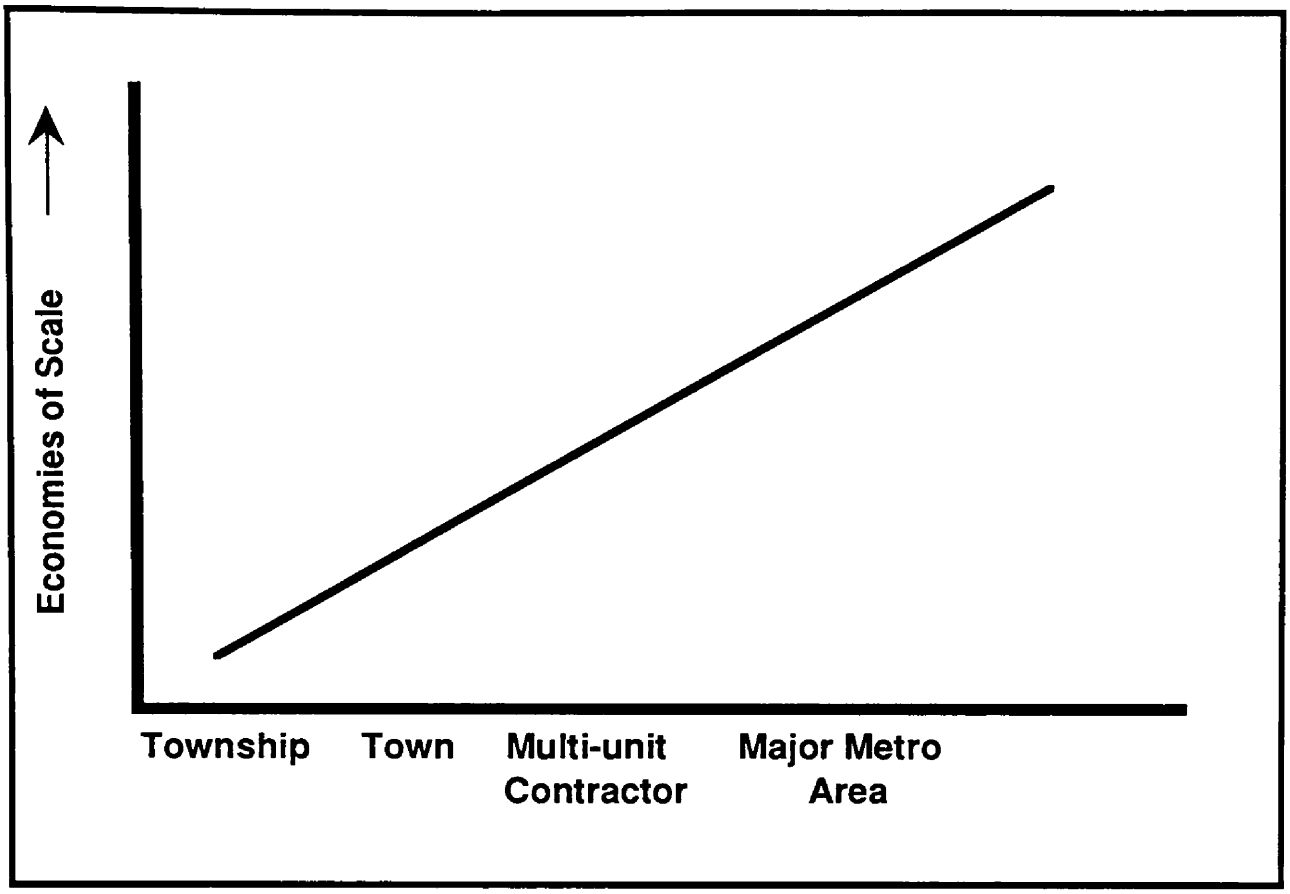

Figure 2-3 Economies of Scale vs. Local Government Size

Community and Equity Problems

Concerns about equity are raised in any discussion about contracting out services used by the poor or disadvantaged. One can find cases in which the poor were treated less equitably by a contractor, but once again we have a symmetrical problem. A contractor can treat certain groups less equitably; so can a government. On the other hand, if the service contracted out is properly specified and delivered, equity can be enhanced, because all people will be treated equally well. Savas (1987) suggests that minority groups are better served by any service arrangement that actually improves efficiency,

so to the extent that contracting out improves efficiency, minority groups are better served.

Quality Control

Anytime you contract for goods and services, quality control is critical. A well-specified contract is required, along with monitoring of the work. We are warned, however, that well-specified contracts are not always easily written , and that proper monitoring can be difficult and expensive (Sappington & Stiglitz 1987) The importance of a well-specified contact cannot be over emphasized, for without such, monitoring is at best problematic and at worst almost impossible.

Ferris and Graddy (1986) suggest that two components of the service output affect specifications and monitoring. These are the tangibleness and complexity of the product. The more tangible the product, the easier it is to specify and monitor. Conversely, the more complex the product, the harder it is to specify and monitor. The relationship is expressed graphically in Figure 2-4.

It doesn't take much reflection to validate this almost intuitive assertion. Clearly a ton of road salt is both a great deal more tangible and a lot less complex then the design of computer software for a multi-site energy management system. Both require a good specification and proper monitoring, but the ton of road salt is significantly easier to specify and monitor.

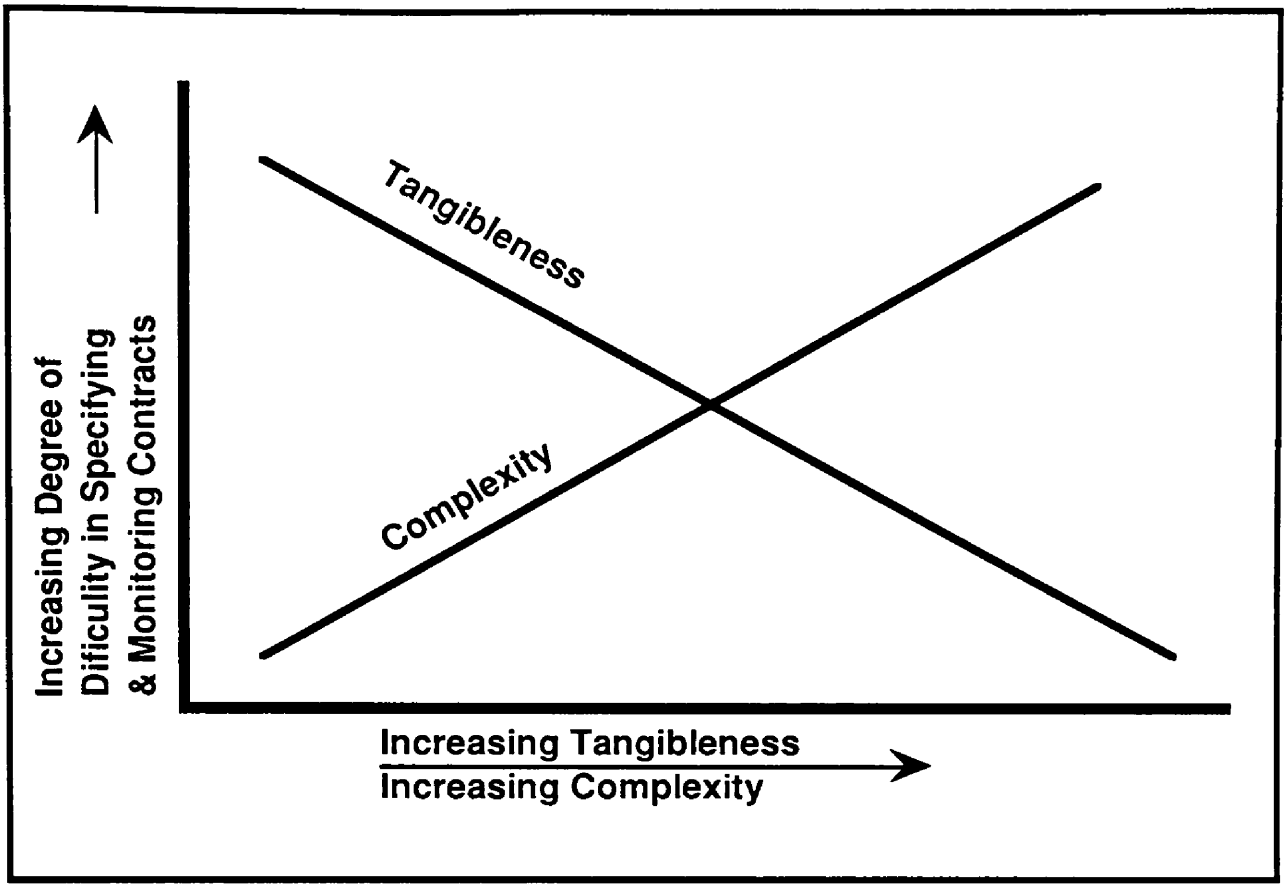

Figure 2-4 Difficulty in Specifying Monitoring Contracts vs Tangibleness and Complexity of Product

Loss of Control

Several writers express concern about the potential loss of control that occurs when contractors are used, particularly for a service. (Ferris and Graddy 1986) The core of this concern is the expectation of an inverse relationship between efficiency and control. The increase in efficiency through the use of a contractor is seen as a tradeoff against the loss of control that occurs. It seems possible, however, that if the product or service is properly specified and monitored, the inverse curve may be considerably flatter than one might expect at first glance. (Figure 2-5.)

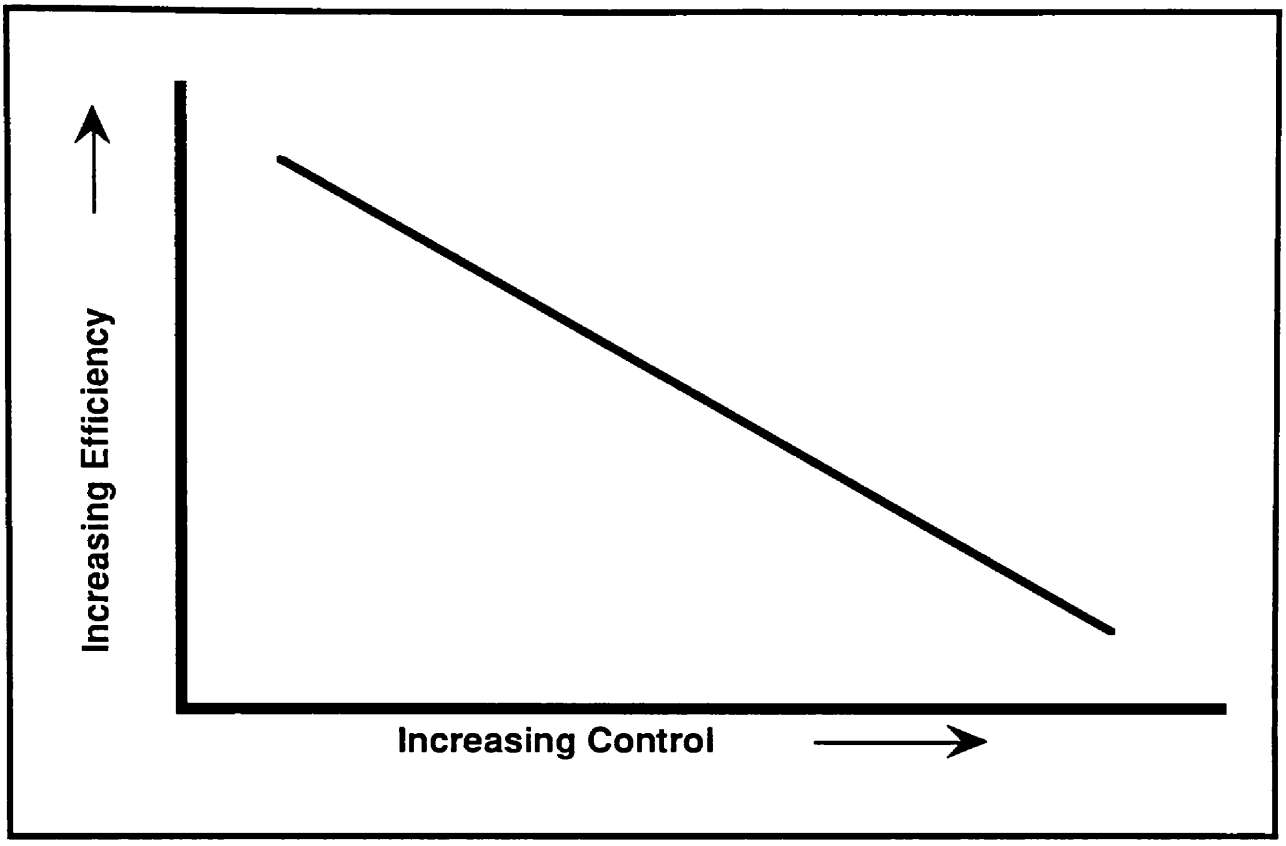

Figure 2-5 Increasing Efficiency of a Contract vs Increasing Control of the Contract

One could speculate that the more complex a service is, the more prone it may be to loss of control. A janitorial contact is not tremendously complex, and one would expect little loss of control. A contract to evaluate and recommend clients for a social services agency is a great deal more complex, and one might reasonably expect some loss of control over the evaluation and recommendation process. The underlying cause of this relationship may be the increasing difficulty in properly specifying a complex product. (Fig 2-6)

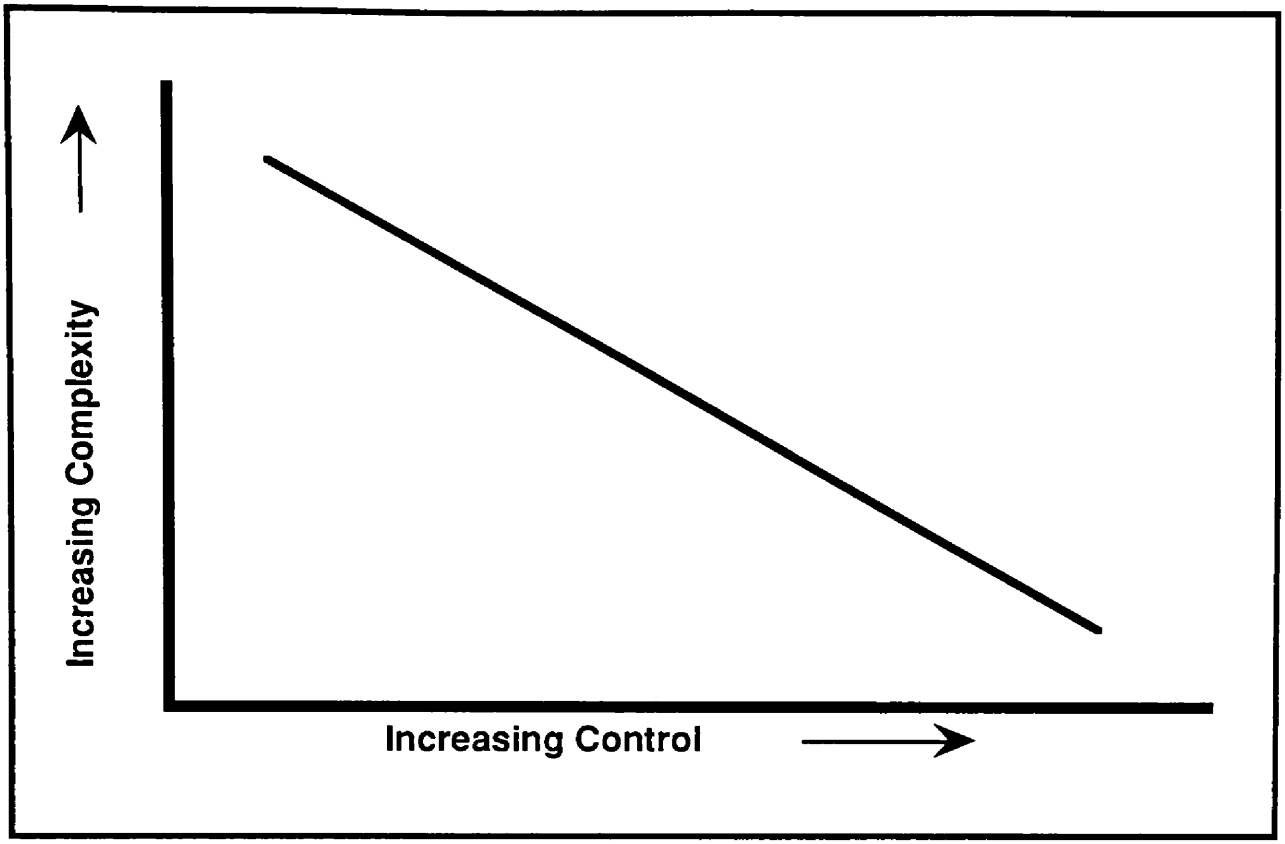

Figure 2-6 Complexity of a Service or Product vs Control of a Contracted Service or Product

The Usefulness of Economic Analysis

Edwin Mills (1987) calls to question the usefulness of economic analysis in support of privatization. In reflecting upon studies that indicate some services are more economically produced by the private sector, Mills suggests the initial change to government production was the result of political decisions, not some analysis that showed government had a comparative advantage. He notes that both the public and private sector share the same problems of cost and demand uncertainty and asymmetrical information; there is

therefore no presumption of comparative advantage for the public sector. Further, Mills suggests that the correct issue in determining which sector should produce a good or services involves relative social efficiency or comparative advantage.

The Benefits of Privatizing Production

Cost savings

Potential cost savings is perhaps the major advantage of privatizing production. Studies reported in a wide variety of articles indicate savings can be realized by shifting production to the private sector. (Spann 1977)(Hanke 1985)(Moore 1987)(Florestano & Gordon 1980)(Seader 1986) Hanke (1985), for instance, noted that a private wastewater operation typically had costs 20% to 50% less than a public wastewater operation. Savas (1987) in summarizing nine comparative studies of private and public residential waste collection, noted that the cost of public collection ranged from about the same to as much as 124% higher then private collection. Moore (1987) noted savings of 37% to 96% for contracted municipal services in summarizing a number of other comparative cost studies. Evidence of this type clearly supports the notion that some contracted goods and services can result in cost savings.

Competition

As noted previously, there is little incentive toward efficiency and cost control without competition. If monopolies both public and private are eliminated, competitive bidding for the production of goods and services in the marketplace should result in the lowest possible price, other things being equal.

Flexibility

Flexibility is seen as an advantage of contracting. (Sharkansky, 1980) Flexibility can be realized through the availability of multiple contractors, which when coupled with well specified contracts, permits rapid changes in the amount and character of services provided.

Efficiency

One of the major benefits assumed with contracting is that the private sector is more efficient than the public sector. Whether this assumption is based upon fact is less certain. Pack (1987) suggests the "belief persists-even among public officials" that the private sector is more efficient than the public sector. Florestano and Gordon (1980) found that the public officials that responded to their survey viewed contracting as costing less and providing better service.

The Contracting Model

The model that supports many of the claimed benefits of contracting is this: "*competitive* bidding by profit-maximizing firms for a well

specified output guarantees that the product will be produced at the lowest cost." (Pack 1989 - author's italic) Elements of this model are reflected in topics discussed previously, such as the need for competitive bidding and a well specified contracts.

Section III Statement of the Problem

Current literature suggests relationships between the degree of contracting by local governments, and the following variables: the size of communities, the region of the country, the incentive to reduce costs, and the degree of employee unionization. (Ferris & Graddy 1986)(Poole & Fixler 1987)(Florestano & Gordon 1980)

Ferris and Graddy (1986) suggest, for example, that small communities would be be more likely to contract for services, because their small size leads to a lack of economies of scale. They also suggest that large communities would be more likely to contract out because a major metropolitan area would have more external options to choose from.

Florestano and Gordon (1980) found a similar relationship in their study. They also noted a relationship between the frequency of contracting and the region of the country, with the North Central region exhibiting a higher rate of contracting. Poole and Fixler (1987), on the other hand, note another study that suggests that local governments located on the western part of the country will be more likely to contract for services.

Ferris and Graddy also suggest that areas with a low proportion of public sector unions will experience greater contracting for services. Their reasoning is that a relatively strong union will be better able to prevent contracting, compared to a smaller, weaker union.

The purpose of this project was to examine data from publicly funded colleges and universities to determine if contracting patterns similar to those noted above are observed. The following hypotheses were examined:

1) The amount of contracting will vary with the size of institution; specifically, small and large institutions should contract more than medium size institutions.

2) The amount contracting will vary with the region of the country, with one or more regions exhibiting a greater extent of contracting.

3) The amount of contracting will vary with the relative amount of unionization, with a inverse relationship between the degree of unionization and amount of contracting.

Section IV Statement of Methods

Introduction

This analytical portion of this project involved the analysis of data collected from colleges and universities throughout the United States. The data included information about the following variables:

1) Location of the institution
2) The size of the institution in terms of physical plant and student body
3) Whether the workforce is unionized
4) Whether contracting is used for over 25 different types of service & maintenance/repair work

The source for these data was the 1986-87 *International Experience Exchange Survey*, conducted by The Association of Physical Plant Administrators of Universities and Colleges (APPA). APPA is, to quote their letterhead, "An association, international in scope, founded in 1914, whose purpose is to develop professional standards in the administration, care, operation, planning and development of physical plants used by colleges and universities. . . " The *International Experience Exchange Survey* is sent periodically to member institutions throughout the United States.

The first step in the analysis was to remove data about privately-funded institutions. The decision to remove private institutions was

driven by the focus of this project upon public sector institutions, as well as a desire to keep the size of the data set manageable. It is recognized that privately-funded institutions may not differ from publicly funded institutions in terms of the amount of contracting undertaken, but that is not the focus of this study.

Data about institutions outside of the United States were also removed from the data set. It was reasoned that foreign institutions could be enough different so as to skew the data analysis. The remaining records were searched to remove any duplicate records that existed.

In the second step, an overall measure of the extent of contracting by each institution was developed, and the total, mean and standard deviation were calculated for each case. In addition, several data elements required transformation or consolidation, in order to provide the appropriate variables for analysis.

In the next step of the analysis, the measure of the extent of contracting for services, as a dependent variable, was tested against several independent variables. The independent variables included the following:

1) The size of the institution in terms of gross square footage, divided into large, medium, and small institutions
2) The size of the institution in terms of enrollment categories, divided into large, medium and small institutions.
3) The relative degree of unionization of the workforce

4) The region of the country

Using *Systat* software on an *Apple Macintosh*, the data were analyzed by each of the independent variables, using the "Statistics" mode. This procedure provided a count of the number of cases, the mean, and standard deviation of the dependent variable.

In the final step of the data analysis, the means and standard deviations derived previously were compared by hypothesis testing procedures using the appropriate *z* score or *t* score. The results of this procedure indicated whether the means were statistically the same or different. The *z* and *t* scores were calculated on a *Wingz* spreadsheet on an *Apple Macintosh*.

Data Preparation

After the private, foreign, and duplicate entries were removed from the data set, 285 cases remained. Prior to data analysis, it was necessary to develop several new data fields. These included a regional designation, a building size index, a FTE index, and an overall measure of the extent of contracting for services.

Regional Designation

Region of the country was used as one of the independent variables in the analysis. A new data field was developed, in which the institutions were grouped into one of five regions, based upon the

regional designations used by APPA. The regions are listed in Table 4-1 and illustrated on Figure 4-1.

Eastern	Midwest	South-eastern	Central	Rocky Mountain	Pacific Coast
Connecticut	Illinois	Alabama	Arkansas	Arizona	Alaska
Delaware	Indiana	Florida	Kansas	Colorado	California
District of Columbia	Iowa	Georgia	Missouri	Montana	Hawaii
Maine	Michigan	Kentucky	Nebraska	New Mexico	Idaho
Maryland	Minnesota	Louisiana	North Dakota	Utah	Nevada
New Hampshire	Ohio	Mississippi	Oklahoma	Wyoming	Oregon
New Jersey	Wisconsin	North Carolina	South Dakota		Washington
New York		South Carolina	Texas		
Pennsylvania		Tenesee			
Rhode Island		Virginia			
Vermont		West Virginia			

Table 4-1 States by Region

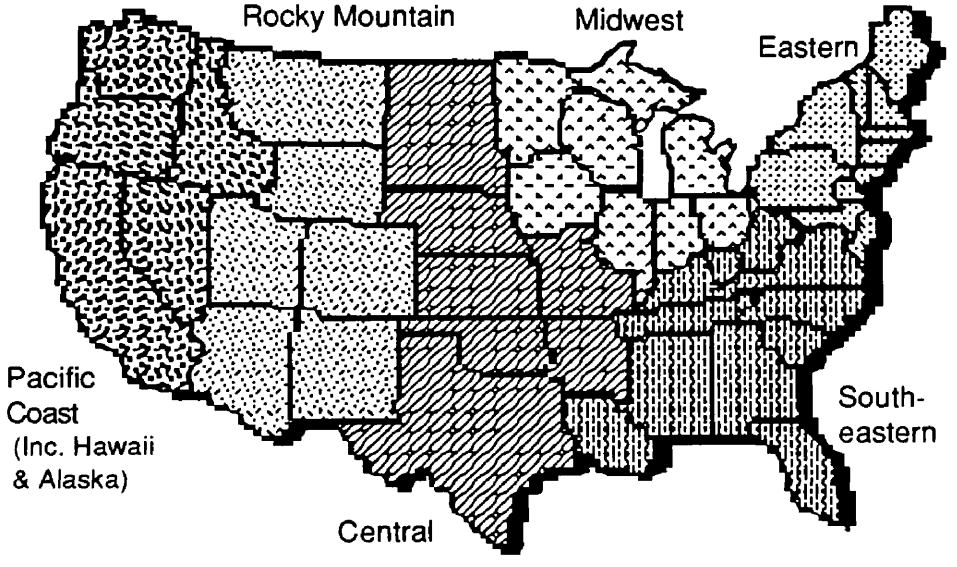

Figure 4-1 Regional Designation

Building Area Index

As an indication of the physical size of the institutions, a variable called BAIndex (Building Area Index) was developed. The building square footage figures were sorted, and graphed to display the frequency distribution of the square footage. It was determined to designate institutions below one million gross square feet as small institutions, those between one and three million gross square feet as medium, and those above three million gross square feet as large institutions. An examination of the distribution by size follows in Section V.

FTE Index

One of the existing data fields in the APPA data base was an indication of Full Time Equivalent enrollment (FTE). In the survey, the FTE ranges noted in Table 4-2 were used. In range 1 through 5, the FTE increased in increments of 1,000. In range 6 FTE the increment increases to 7,000, in range 7 to 10,000 and range 8 is 20,000 and above. Because the increments were not equal, the survey FTE range codes were not used as variables. The FTE range scores were reconfigured into three groups: less than 5,000 FTE, between 5,000 and 11,999 FTE, and greater than 12,000 FTE. This consolidation resulted in three groups representing small, medium and large institutions.

Range	FTE Code
0-999	1
1,000-1,999	2
2,000-2,999	3
3,000-3,999	4
4,000-4,999	5
5,000-11,999	6
12,000-19,000	7
>20,000	8

Table 4-2 FTE Ranges in the APPA Survey

Measure of Overall Contracting

The final data field required was a measure of overall contracting.. The raw data from the survey provided information about the relative amount of contracting.for each institution for a wide variety of services. Twenty-six of these services were selected for this project. The raw data was originally coded so that 0=No/None; 1= In-house provision; 2=Mix of inhouse and contract, and 3= Fully contracted. Using this data, two measures of the relative amount of contracting were developed.

Summary1

Summary1 was developed by giving a 0 if the raw score was 0 or 1, or 1 if the raw score was 2 or 3. That is to say, if the service was not provided, or was provided in-house, the value assigned was 0; if the service was provided completely through contracting, or through a

mix of contracting and in-house, a value of 1 was assigned. This new value for each of the twenty-six services was then totaled to yield Summary1 for each of the 285 cases.

# Services Contracted For	Count	%
1	3.00	1.10
2	26.00	9.10
3	43.00	15.10
4	48.00	16.80
5	48.00	16.80
6	49.00	17.20
7	29.00	10.20
8	20.00	7.00
9	9.00	3.20
10	4.00	1.40
11	2.00	0.70
12	2.00	0.70
13	2.00	0.70

Table 4-3 Count and % of Summary1 Scores

The scores for Summary1 could range from 0 to 26; the observed range was from 1 to 13. The count of cases at each score and the corresponding percent are listed in Table 4-3 and plotted as a line graph in Figure 4-2 The plot is approximately bell-shaped, skewed to the right.

One of the significant advantages of Summary1 is that it directly provides information about the actual number of services being contracted for, fully or in part, by each of the 285 institutions. By

totaling the Summary1 score for each of the 26 services, judgements can be made about the most and least frequently contracted services.

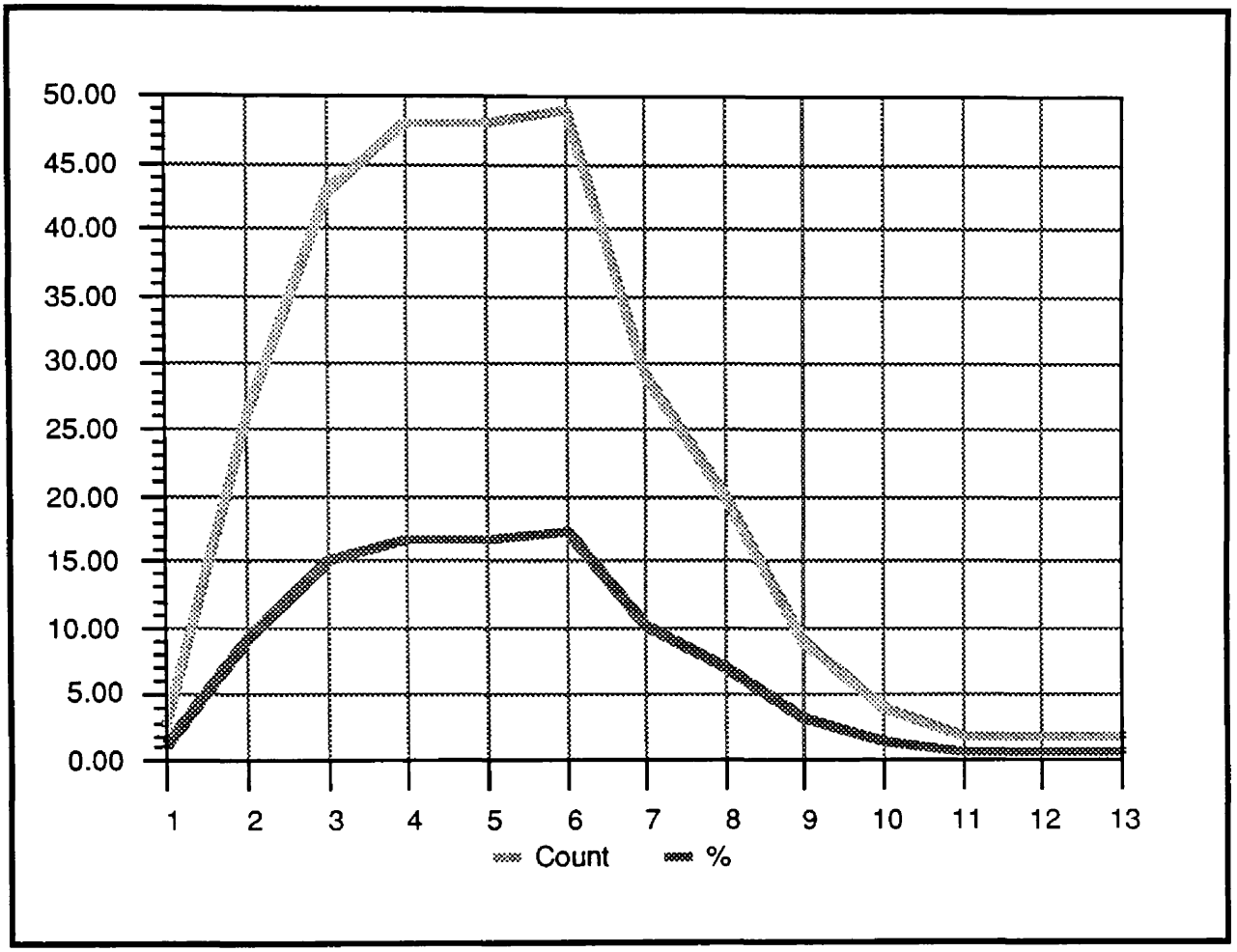

Figure 4-2 Frequency Distribution of Summary1

Summary2

The scores for Summary2 were constructed by transforming the raw data so that a score of 2 represented a mixture of contracting and in-house provision, and a score of 3 represented complete contracting. These scores ranging from 0 to 3 were then totaled for each of the 285 cases to yield Summary2. The values could range from 0, for an

Summary2 Score	Count	%
17	1.00	0.40
18	0.00	0.00
19	0.00	0.00
20	1.00	0.40
21	2.00	0.70
22	3.00	1.10
23	10.00	3.50
24	9.00	3.20
25	13.00	4.60
26	13.00	4.60
27	22.00	7.70
28	13.00	4.60
29	26.00	9.10
30	17.00	6.00
31	26.00	9.10
32	19.00	6.70
33	24.00	8.40
34	23.00	8.10
35	18.00	6.30
36	10.00	3.50
37	12.00	4.20
38	6.00	2.10
39	5.00	1.80
40	4.00	1.40
41	1.00	0.40
42	1.00	0.40
43	2.00	0.70
44	2.00	0.70
46	1.00	0.40
48	1.00	0.40

Table 4-4 Count and % of Summary2 Scores

institution that did not provide any of the 26 services, to 3x26, or 78, for an institution that provided all 26 services via contract. The actual values observed ranged from a low score of 17 to a high of 48. The count of cases for each score, and the corresponding percent are noted in Table 4-4. The count of scores and percent are shown as a

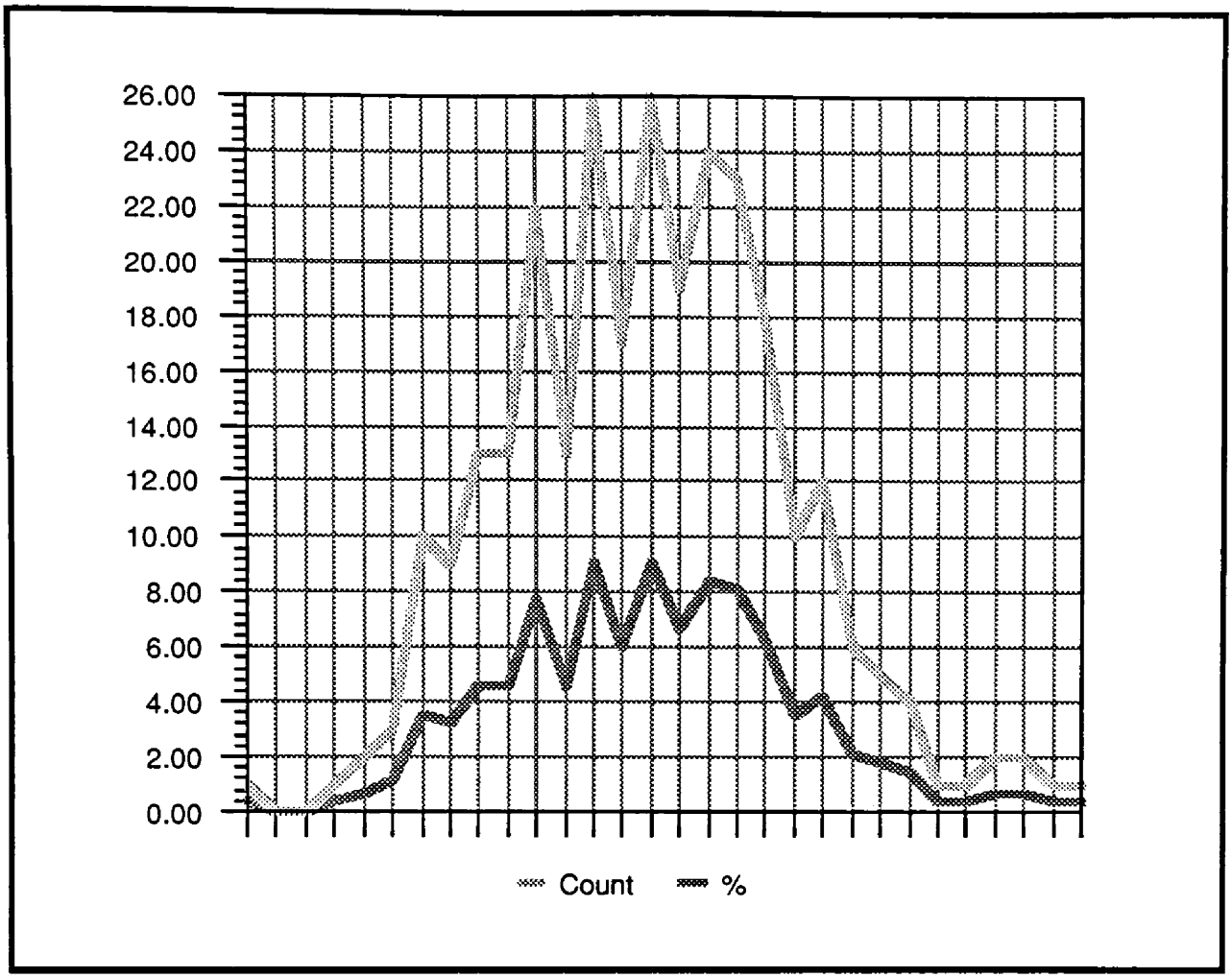

Figure 4-3 Frequency Distribution of Summary2 Scores

line graph in Figure 4-3. The data produce a jagged but roughly bell-shaped curve. One problem with the scores derived from Summary2 is that the total score for each case doesn't necessarily provide significant information about the institution. For example, a score of 30 could mean that 10 services are fully contracted, and the remaining 16 not provided at all. A score of 30 could also represent 22 services provided in-house, with 4 more provided with a mix of in-house and contracted service. This ambiguity led to a decision to use Summary1 for the rest of the analysis.

Section V Data Analysis Results

Composition of the Data Set

One of the first steps in the data analysis was an examination of the various elements of the data set. This step provided information about the composition of the institutions in terms of the regional composition, size, and the extent of contracting.

Regional Composition

Table 5-1 and Figure 5-1 provide information about the distribution of institutions by region. Table 5-1 lists the count of institutions in each region, as well as the percentage. Figure 5-1 illustrates this distribution as a line graph. The largest concentration of institutions in the data set was in the Central region; the smallest concentration was in the Rocky Mountain region.

Region	Count	%
Eastern	46.00	16.10
Midwest	55.00	19.30
Southeastern	57.00	20.00
Central	63.00	22.10
Rocky Mountain	26.00	9.10
Pacific Coast	38.00	13.30

Table 5-1 Count and % of Institutions in Each Region

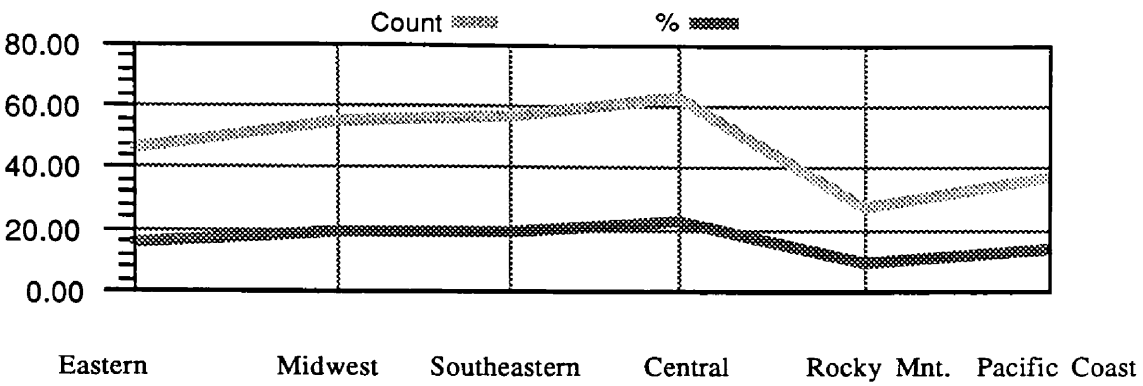

Figure 5-1 Distribution of Institutions by Region

Building Area as a Measure of Size

The count and percent of institutions in each building area category are listed in Table 5-2, and shown graphically in Figure 5-2. Twelve institutions, or 4.2% of the cases, did not indicate their gross square footage.

BAIndex	Count	%
< 1 Million	112.00	41.03
>1 Million & < 3 Million	97.00	35.53
> 3 Million	64.00	23.44

Note: 12 cases were missing data, and are not reflected above.

Table 5-2 Count and % of Institutions in BAIndex

112 institutions, or 41.0% of the remaining 273 cases, fell into the small institution category, while 97 cases (35.5%) ranked as medium size, and 64 cases, or 23.4% were classified as large institutions.

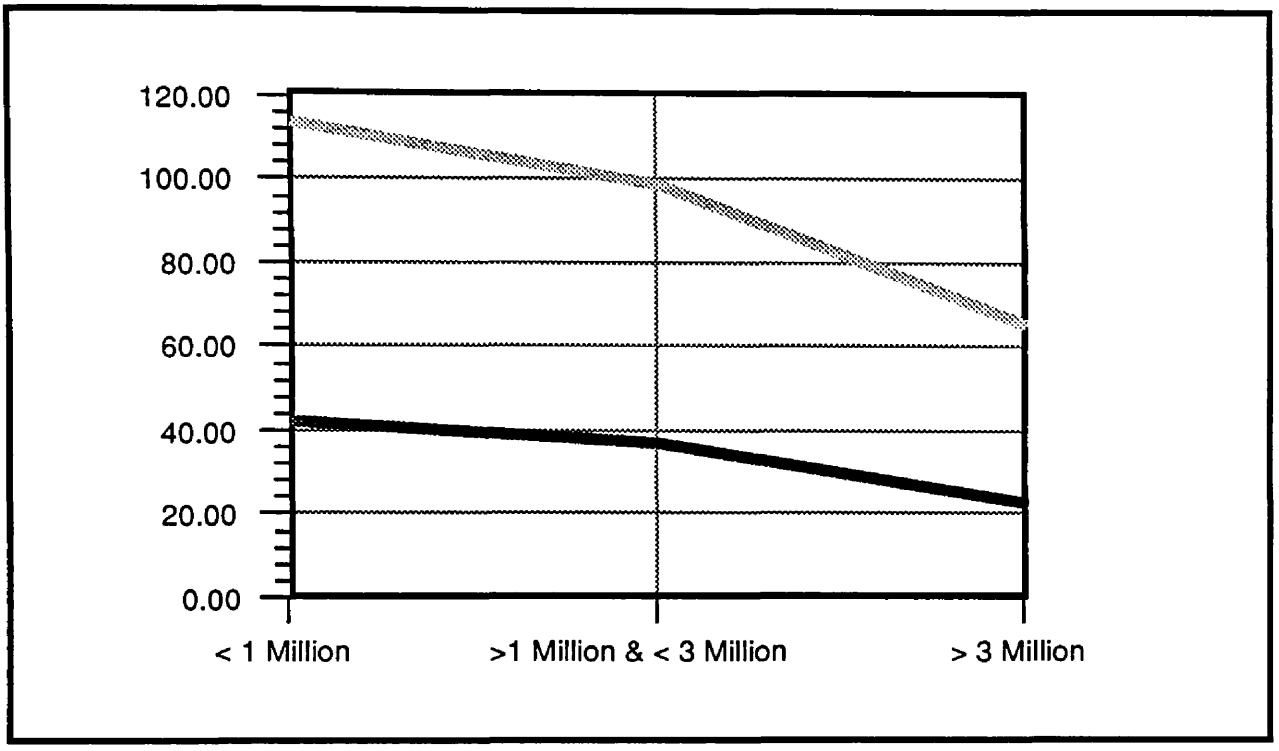

Figure 5-2 Frequency Distribution for BAIndex

FTE as a Measure of Size

The distribution of institutions within the three FTEIndex groups is noted in Table 5-3. The distribution is expressed as a line graph in Figure 5-3. The largest number of institutions were in the <5,000 range at 118 or 41.40% of the total. The Medium size range included 89 institutions, or 31.23 % of the total, with the remaining 78 institutions (27.37%) in the large category.

Range	Count	%
<5,000	118.00	41.40
5,000-11,999	89.00	31.23
>12,000	78.00	27.37

Table 5-3 Distribution of FTEIndex by Count and %

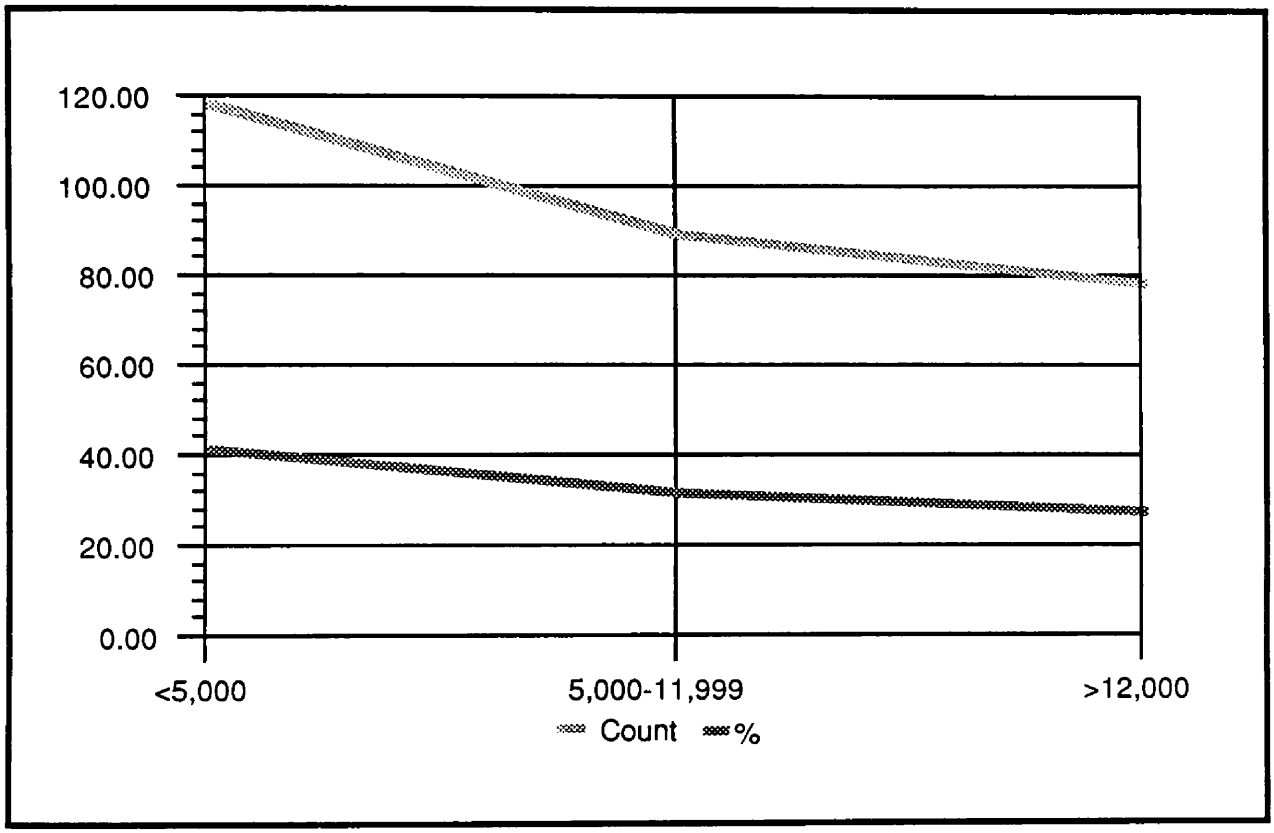

Figure 5-3 Distribution of FTEIndex by Count and %

Extent of Contracting

The extent of contracting for the various services was examined. as part of the data analysis. The scores (1 or 0) for each service category were totaled. This quickly provided a count of the number of institutions that contracted to provide a particular service. The counts were than converted to percents. These are listed in Table 5-4. The distribution of percentages of institutions that contracted is illustrated as a line graph in Figure 5-4.

A brief review of the data in Table 5-4 provides some Interesting insights. Somewhat surprisingly, some eight services were not contracted for by any of the 285 institutions. Only one institution contracted for security services, and one for utility maintenance. Two institutions contracted for pest control, and three for walk and street maintenance. After those services, the numbers begin to increase.

The top three services to be contracted for are not too surprising. Roof replacement was contracted for by 270 of the 285 institutions (94.74%). In second place was elevator maintenance, with 250 institutions (87.72%) contracting. Trash removal was a distant third with 184 institutions (64.56%).

Service	# That Contract	% that Contract
Athletic Facilities	0	0.00%
Labor Pool	0	0.00%
Mail Delivery	0	0.00%
Minor Construction	0	0.00%
Moving/Deliver	0	0.00%
Stu Union/Food Service	0	0.00%
Student Housing	0	0.00%
Trades	0	0.00%
Security	1	0.35%
Utility Maintenance	1	0.35%
Pest Control	2	0.70%
Roads/Walks	3	1.05%
Filter Replacement	15	5.26%
Grounds	18	6.32%
HVAC Maintenance	23	8.07%
Cool Tower Maint	26	9.12%
Custodial	49	17.19%
Water Treatment	69	24.21%
Exterior Painting	82	28.77%
Chiller Maintenance	95	33.33%
Roof Maintenance	98	34.39%
Exter Bldg Cleaning	137	48.07%
Masonry Repairs	142	49.82%
Trash Removal	184	64.56%
Elevator Maintenance	250	87.72%
Roof Replacement	270	94.74%

Table 5-4 Number and % of Institutions That Contracted for Services

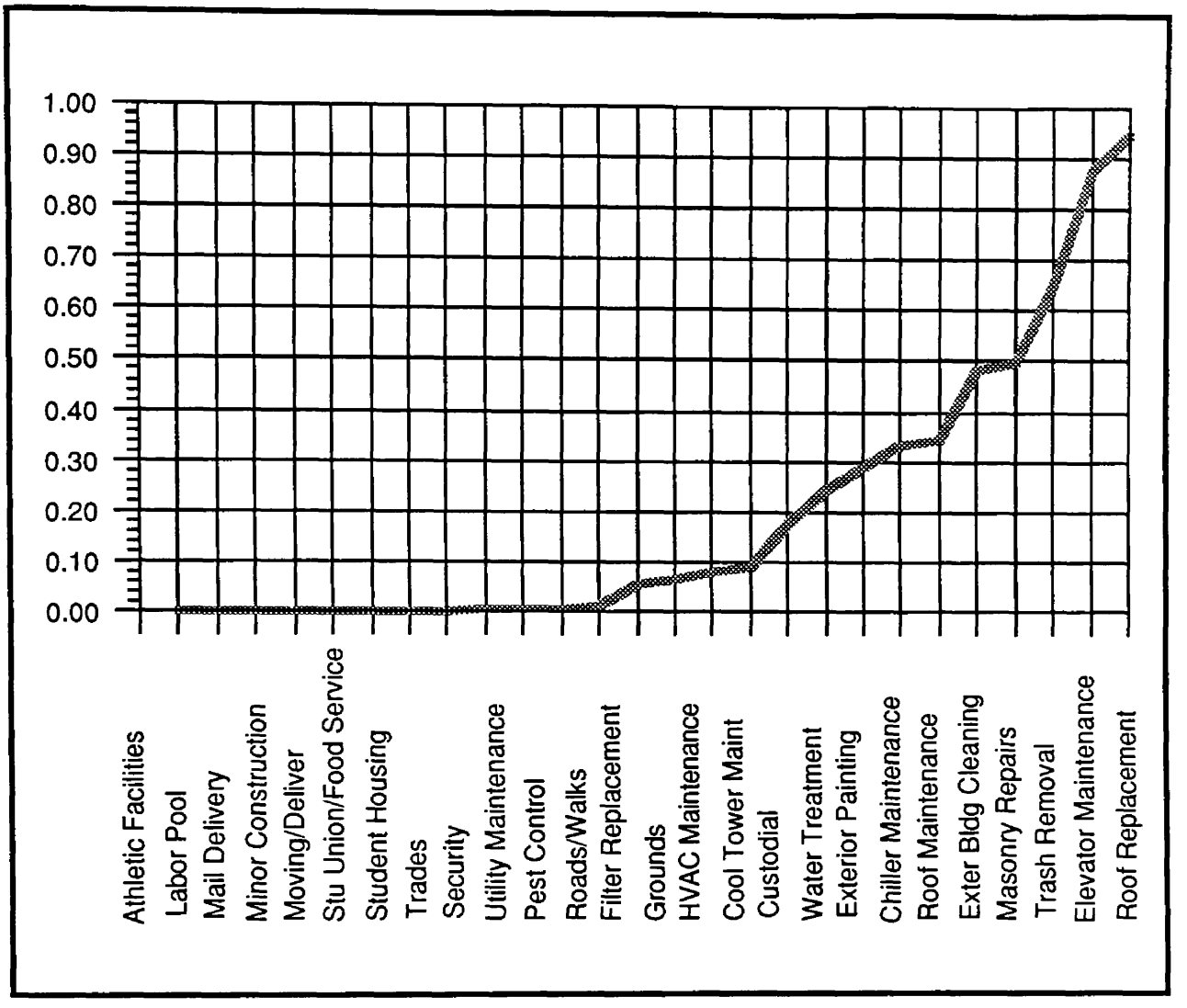

Figure 5-4 Percent of Institutions Contracting For Services

Hypothesis Testing Results

BAIndex as the Independent Variable

The mean scores for Summary1, sorted by BAIndex code were as follows:

Baindex Code	Summary1 Mean
1 Small Institutions	5.411
2 Medium Institutions	5.536
3. Large Institutions	4.188

Table 5-5 Summary1 Mean Scores by BAIndex

Using *z* scores, paired means were tested at the .05 level to determine if the means were statistically the same. The null hypothesis was that *the means were statistically the same*, that is, that variance in the means was the result of chance. The null hypothesis was rejected if the *z* score fell outside of the critical value. The critical value of *z* at the .05 level of significance was $\pm$ 1.96 for this two-tailed test. (Mason, Lind & Marchal, 1983). Rejection of the null hypothesis would indicate that the means were in fact statistically different, and not the result of chance.

The results of the hypothesis testing indicated that the Summary1 means for small and medium institutions were statistically the same. The mean for large institutions was not the same as the other two.

Pair	*z* Score	Critical Value @ .05	Null Hypothesis
1 & 2	-0.401	± 1.96	Accepted
1 & 3	3.953	± 1.96	Rejected
2 & 3	4.146	± 1.96	Rejected

Table 5-6 *z* Scores for Paired Means of Summary1 by BAIndex

The mean for the Summary1 score for large institutions was smaller than the means for medium and small institutions, indicating that, using BAIndex as the independent variable, large institutions contracted for services to a lesser extent.

FTEIndex as the Independent Variable

FTEIndex was the second measure of institute size. The mean scores for Summary1, sorted by BAIndex code were as follows:

FTEIndex Code	Summary1 Mean
1 Small Institutions	5.390
2 Medium Institutions	5.337
3. Large Institutions	4.551

Table 5-7 Summary1 Mean Scores by FTEIndex

The paired means were tested as above. The results are noted in Table 5-8.

Pair	*z* Score	Critical Value @ .05	Null Hypothesis
1 & 2	0.171	± 1.96	Accepted
1 & 3	2.664	± 1.96	Rejected
2 & 3	2.433	± 1.96	Rejected

Table 5-8 *z* Scores for Paired Means of Summary1 by FTEIndex

The results of the hypothesis testing indicated that the Summary1 means for small and medium institutions were statistically the same for this measure of institution size.. The mean for large institutions were not the same as the other two. The mean for the Summary1 score for large institutions was smaller than the means for medium and small institutions, indicating that, using FTEIndex as the independent variable, large institutions contracted for services to a lesser extent.than small and medium sized institutions.

EMPTYPE as the Independent Variable

EMPTYPE was used as a relative measure of unionization. The mean scores for Summary1, sorted by EMPTYPE, are listed in Table 5-9.

EMPTYPE Code	Summary1 Mean
1 Non-Union Employees	5.196
2 Mixed	5.100
3. Union Employees	5.193

Table 5-9 Summary1 Mean Scores by EMPTYPE

The paired means were also tested as above. The results are noted in Table 5-10.

Pair	*z* Score	Critical Value @ .05	Null Hypothesis
1 & 2	0.296	± 1.96	Accepted
1 & 3	0.008	± 1.96	Accepted
2 & 3	-0.314	± 1.96	Accepted

Table 5-10 *z* Scores for Paired Means of Summary1 by EMPTYPE

The results of the hypothesis testing indicated that the Summary1 means were statistically the same for all three pairs. Variances in Summary1 were not the result of differing degrees of unionization. This indicated that, using EMPTYPE as the independent variable, the extent of contracting for services observed was not the result of variations in the relative degree of unionization.

REGION as the Independent Variable

The mean scores for Summary1, sorted by REGION, are listed in Table 5-11. In this case, the paired means were submitted to a *t* test, because one of the regions had less than thirty cases. The results are noted in Table 5-12. The null hypothesis was was once again that *the means were statistically the same*, that is, that variance in the means was the result of chance. The null hypothesis was rejected if the *t* score fell outside of the critical value. The critical value of *t* for this

REGION Code	Summary1 Mean
1 Eastern	5.652
2 Midwest	5.945
3. Southeastern	4.965
4. Central	4.794
5. Rocky Mountain	4.115
6. Pacific Coast	4.921

Table 5-11 Summary1 Mean Scores by REGION

two-tailed test at the .05 level of significance varies with the degrees of freedom. (Mason, Lind & Marchal, 1983). Rejection of the null hypothesis would indicate that the means were in fact statistically different, and not the result of chance.

The results of the hypothesis testing were somewhat mixed. The hypothesis was rejected for Pair 1 & 5 (Eastern and Rocky Mountain). The hypothesis was also rejected for pairs 2 & 3, 2 & 4, 2 & 5 and 2 & 6 (Midwest, Southeastern, Central, Rocky Mountain, and Pacific

Pair	*t* Score	Critical Value @ .05	Null Hypothesis
1 & 2	-0.607	± 1.982	Accepted
1 & 3	1.467	± 1.982	Accepted
1 & 4	1.912	± 1.981	Accepted
1 & 5	2.611	± 1.994	Rejected
1 & 6	1.371	± 1.989	Accepted
2 & 3	2.437	± 1.981	Rejected
2 & 4	3.013	± 1.982	Rejected
2 & 5	3.777	± 1.989	Rejected
2 & 6	2.288	± 1.986	Rejected
3 & 4	0.458	± 1.982	Accepted
3 & 5	1.815	± 1.989	Accepted
3 & 6	0.101	± 1.986	Accepted
4 & 5	1.512	± 1.986	Accepted
4 & 6	-0.306	± 1.982	Accepted
5 & 6	-1.418	± 2.000	Accepted

Table 5-12 *t* Scores for Paired Means of Summary1 by REGION

Coast). This indicated that for Summary1 means sorted by REGION, the Eastern region contracted for services to a greater extend than

the Rocky Mountain region, and the Midwest Region contracted for services to a greater extent than the Southwestern, Central, Rocky Mountain and Pacific Coast regions. The differences in means between the Eastern and Midwest regions was not statistically significant.

Service Category by FTEIndex

To provide an additional view of the affect of size upon the extent of contracting, The services listed in Table 5-4 were sorted by FTEIndex, the number of institutions contracting the particular service were totaled and the means calculated. The paired means for the small, medium, and large institutions were subjected to a hypothesis testing procedure using the z score as noted above. The null hypothesis remains the same as before. The critical value of z for the two-tailed test was again $\pm$ 1.96. The means are listed in Table 5-12. The z scores and results of the hypothesis tests are noted in Table 5-13.

As might be expected, at this micro level the results begin to deviate somewhat from those seen above. Services with clear variations include HVAC maintenance, which small institutions contract for more frequently, chiller maintenance and masonry repairs, which large institutions contract for less frequently, and roof replacement, which medium institutions contract for more frequently than small or large institutions. While the results for HVAC maintenance, chiller maintenance and masonry repairs are not unexpected, this result for

roof replacement seemed anomalous, and would bear further investigation.

Service Category	Institute Size		
	Small	Medium	Large
Athletic Facilities	0.00	0.00	0.00
Labor Pool	0.00	0.00	0.00
Mail Delivery	0.00	0.00	0.00
Minor Construction	0.00	0.00	0.00
Moving/Delivery	0.00	0.00	0.00
Stu Union/Food Serve	0.00	0.00	0.00
Student Housing	0.00	0.00	0.00
Trades	0.00	0.00	0.00
Security	0.01	0.00	0.00
Utility Maintenance	0.00	0.00	0.01
Pest Control	0.02	0.00	0.00
Roads/Walks Maint	0.02	0.00	0.01
Filter Replacement	0.05	0.07	0.04
Grounds	0.06	0.08	0.05
HVAC Maintenance	0.14	0.04	0.04
Cool Tower Maint	0.11	0.09	0.06
Custodial	0.14	0.15	0.24
Water Treatment	0.25	0.26	0.21
Exterior Painting	0.30	0.25	0.32
Chiller Maintenance	0.39	0.36	0.22
Roof Maintenance	0.42	0.35	0.22
Exterior Bldg Cleaning	0.42	0.57	0.47
Masonry Repairs	0.54	0.55	0.37
Trash Removal	0.69	0.66	0.56
Elevator Maintenance	0.91	0.90	0.81
Roof Replacement	0.93	1.00	0.91

Table 5-12 Means for Service Categories, By FTEIndex

Service Category	Pair 1&2		Pair 1&3		Pair 2&3	
Athletic Facilities	0.00	Accepted	0.00	Accepted	0.00	Accepted
Labor Pool	0.00	Accepted	0.00	Accepted	0.00	Accepted
Mail Delivery	0.00	Accepted	0.00	Accepted	0.00	Accepted
Minor Constructio	0.00	Accepted	0.00	Accepted	0.00	Accepted
Moving/Delivery	0.00	Accepted	0.00	Accepted	0.00	Accepted
Stu Union/Food Service	0.00	Accepted	0.00	Accepted	0.00	Accepted
Student Housing	0.00	Accepted	0.00	Accepted	0.00	Accepted
Trades	0.00	Accepted	0.00	Accepted	0.00	Accepted
Security	1.21	Accepted	1.21	Accepted	0.00	Accepted
Utility Maintenance	0.00	Accepted	-0.80	Accepted	-0.80	Accepted
Pest Control	1.67	Accepted	1.67	Accepted	0.00	Accepted
Roads/Walks Maint	1.67	Accepted	0.58	Accepted	-0.80	Accepted
Filter Replacement	-0.60	Accepted	0.34	Accepted	0.88	Accepted
Grounds	-0.55	Accepted	0.30	Accepted	0.79	Accepted
HVAC Maintenance	2.60	Rejected	2.63	Rejected	0.00	Accepted
Cool Tower Maint	0.48	Accepted	1.24	Accepted	0.72	Accepted
Custodial	-0.20	Accepted	-1.71	Accepted	-1.45	Accepted
Water Treatment	0.80	Accepted	-0.29	Accepted	-1.00	Accepted
Chiller Maintenance	0.44	Accepted	2.59	Rejected	2.01	Rejected
Roof Maintenance	1.02	Accepted	3.02	Rejected	1.87	Accepted
Exterior Bldg Cleaning	-2.16	Rejected	-0.69	Accepted	1.29	Accepted
Masonry Repairs	-0.14	Accepted	2.36	Rejected	2.35	Rejected
Trash Removal	0.45	Accepted	1.82	Accepted	1.31	Accepted
Elevator Maintenance	0.24	Accepted	1.90	Rejected	1.63	Accepted
Roof Replacement	-3.04	Rejected	0.50	Accepted	2.74	Rejected

Table 5-13 z Scores for Paired Means of Service Category Scores by FTEIndex

Section VI Summary and Conclusions

Summary

The intent of the analytical section of this project was to examine data about contracting for services by public colleges and universities, in order to test the following hypotheses:

1) The amount of contracting will vary with the size of institution; specifically, small and large institutions should contract more than medium size institutions.

2) The amount contracting will vary with the region of the country.

3) The amount of contracting will vary with the relative amount of unionization, with a negative relationship between the degree of unionization and amount of contracting.

Hypothesis 1 Contracting and Institute Size

Hypothesis 1 held that large and small institutions would contract more than medium size institutions. This assertion was examined by submitting the means of the overall contracting statistic, Summary1, to a hypothesis testing procedure using *z* scores. Two series of tests were run, sorting the Summary1 scores by FTEIndex and BAIndex, and than calculating the means, after which *z* scores were calculated

and compared to the critical value of *z* at the .05 level of significance.

The results of both test procedures indicate that large institutions contract for services to a lesser extent than do small and medium size institutions. Small and medium size institutions contract for services at the same rate. Based upon these findings, Hypothesis 1 is not supported.

The most likely explanation for this result is the economy of scale that large institutions enjoy, compared to medium and small institutions. The University of Michigan-Ann Arbor, for instance, has a sufficient number of elevators to make it economical to directly employ elevator mechanics.

Hypothesis 2 Contracting and Region of the Country

Hypothesis 2 held that the extent of contracting would vary by region throughout the country. To test this assertion, Summary1 scores were sorted by region, and the means of Summary1 calculated for each region. These means were than submitted to a hypothesis testing procedure using *t* scores, at the .05 level of significance. The results of the testing procedure indicate that the Eastern region contracted for services to a greater extend than the Rocky Mountain region, and the Midwest Region contracted for services to a greater extent than did the Southwestern, Central, Rocky Mountain and

Pacific Coast regions. Based upon this result, Hypothesis 2 is supported.

No clear explanation presents itself for this result; it could be speculated, however, that relative population and manufacturing concentrations may have some influence on the number of contractors available to provide services.

Hypothesis 3 The Extent of Contracting and Degree of Unionism

Hypothesis 3 asserted that the amount of contracting will vary with the relative amount of unionization, with a inverse relationship between the degree of unionization and amount of contracting. That is to say, as the relative degree of unionization increases, the extent of contracting should decrease. This assertion was test by sorting the Summary1 scores by relative degree of unionization scores, calculating the means for each of the three categories, and submitting these means to a hypothesis testing procedure using z scores at the .05 level of significance. The results indicate no statistically significant difference in the extent of contracting for services between institutions with non-union, mixed, or union workforces. Hypothesis 3 is not supported.

The Extent of Contracting for Services

A brief review of the extent of contracting for services is of interest. For the 285 cases in this study, the mean number of services contracted for is 5.144 of the possible 26 services (19.78%). The minimum number contracted for was one, and the maximum 13. The standard deviation was 2.207.

Of the 26 services, 8 were not contracted for at all, and another 4 were contracted out by 3 or less institutions. The 3 services most contracted for, trash removal, elevator maintenance, and roof replacement, are not surprizing to this writer, and are the services most facilities managers would place on a "most likely to contract" list.

Suggestions for Future Study

Further study on this topic could follow several courses. A replication of this study could be undertaken after APPA's next collection of data. Some refinements in the data gathered would be of benefit to future research, particularly more specific information about the extent of unionism, FTE enrollment, and the extent particular services are contracted for. Cost data for inhouse and contract provision of services would also be of interest. A second possibility for research would be a comparison of the extent of contracting between public and private institutions.

Bibliography

Armington, Raymond Q. & William D.Ellis: *This Way Up: The Local Officials Handbook for Privatization and Contracting Out* Chicago: Regnery Gateway Inc., 1984

Association of Physical Plant Administrators (APPA). "Towards the 21st Century: A Long-Range Plan for APPA." *APPA Newsletter*, June 1990: pp 16-19

Ascher, Kate. *The Politics of Privatization: Contracting Out Public Services* London: MacMillan Education Ltd., 1987

Baber, Walter F. "Privatizing Public Management: The Grace Commission and Its Critics." in Steve H. Hanke, ed. Proceedings of the Academy of Political Science, Vol. 36 No. 3. New York: The Academy of Political Science, 1987: pp. 154-64

Bailey, Robert W. "Uses and Misuses of Privatization." in Steve H. Hanke, ed. Proceedings of the Academy of Political Science, Vol. 36 No. 3. New York: The Academy of Political Science, 1987: pp. 138-152

Bozeman, Barry. *All Organizations Are Public.* San Francisco: Jossey-Bass Publishers: 1987

Buchanan, James M. "Why Does Government Grow?" in *Budgets and Bureaucrats: The Sources of Government Growth,* Thomas E. Borcharding, ed. Durham, NC: Duke University Press, 1977: pp. 2-18

Butler, Stuart M. *Privatizing Federal Spending* New York: Universe Books, 1985

Campbell, Alan K. "Private Delivery of Public Services: Sorting Out the Policy and Management Issues." *Public Management*, 68 (December 1986): pp. 3-5

Davies, David G. in *Budgets and Bureaucrats: The Sources of Government Growth,* Thomas E. Borcharding, ed. Durham, NC: Duke University Press, 1977: pp. 2-18

Ferris, James & Elizabeth Graddy. "Contracting Out: For What? With Whom?" *Public Administration Review*, 46 (July/August 1986): pp. 332-44

Fisk, Donald, Herbert Kiesling & Thomas Muller. *Private Provision of Public Services: An Overview.* Washington, D.C.: The Urban Institute, 1978

Florestano, Patricia S. & Stephen B. Gordon. "Public vs. Private: Small Government Contracting with the Private Sector." *Public Administration Review,* 40 (January/February 1980): pp.29-34

Fraser, Robert, ed. *Privatization: The UK Experience and International Trends* Harlow, Esses, England: Longman Group UK Limited,1988

Hanke, Steve H. "Privatization: Theory, Evidence, and Implementation." in *Control of Federal Spending,* Lowell C. Harris, ed. Proceedings of the Academy of Political Science, Vol. 35 No. 4. New York: The Academy of Political Science, 1985: pp.010-113

Hanke, Steve H. "Privatization versus Nationalization." in *Prospects for Privatization*, Steve H. Hanke, ed. Proceedings of the Academy of Political Science, Vol. 36 No. 3. New York: The Academy of Political Science, 1987

Hanrahan, John D. *Government By Contract* New York: W.W. Norton & Co., 1983

Hartle, Terry W. "Sisyphus Revisited: Running the Government Like a Business." *Public Administration Review,* 45 (March/April 1985): pp. 342-43

Kent, Calvin A., ed *Entrepreneurship and the Privatizing of Government* Quorum Books, New York:1987

Kolderie, Ted. "The Two Different Concepts of Privatization." *Public Administration Review,* 46 (July/August 1986): pp.285-90

Mason, Robert D., Douglas A. Lind & William G. Marchal. *Statistics - An Introduction* Harcourt Brace Jovanovich, Inc., New York: 1983. Table of Normal Probability Distribution p. 612 reprinted from *CRC Standard Mathematical Tables, 15th Edition* CRC Press, Palm Beach FL. Table of Critical Values of Student's t Distribution p. 613 reprinted from *The Ways and Means of Statistics,* Leonard J.Tashman & Kathleen R. Lamborn, Harcourt Brace Jovanovich, Inc: 1979

Mills, Edwin S. "Comment" on Poole & Fixler, "Privatization of Public-Sector Services in Practice: Experience and Potential." *Journal of Policy Analysis and Management,* 6 (1987): pp. 625-27

Moe, Ronald C. "Exploring the Limits of Privatization." *Public Administration Review,* 47 (November/December 1987): pp.453-60

Moore, Stephen. "Contracting Out: A Painless Alternative to the Budget Cutter's Knife." in Steve H. Hanke, ed. Proceedings of the Academy of Political Science, Vol. 36 No. 3. New York: The Academy of Political Science, 1987: pp. 60-73

Morgan, David R. & Robert E. England. "The Two Faces of Privatization." *Public Administration Review,* 48 (November/December 1988): pp. 979-87

NACUBO. *Contracting for Services.* Washington, D.C.: National Association of College and University Business Officers, 1982

Pack, Janet Rothenberg. "Privatization of Public-Sector Services in Theory and Practice." *Journal of Policy Analysis and Management,* 6 (1987): pp. 523-40

Pirie, Madsen. *Privatization* Aldershot, Hants, England: Wildwood House Limited, 1988

Poole, Robert W. "The Political Obstacles to Privatization." in Steve H. Hanke, ed. *Privatization and Development.* San Franciso: ICS Press 1987: pp. 34-45

Poole, Robert W. & Philip E. Fixler. "Privatization of Public-Sector Services in Practice: Experience and Potential." *Journal of Policy Analysis and Management,* 6 (1987): pp. 612-25

"Reagan's Last Wish-List?" *Economist,* 26 March 1988, p. 23-4

Salamon, Lester M. Salamon, Ed. *Beyond Privatization: The Tools of Government Action.* Washington, D.C.: The Urban Institute Press, 1989

Sappington, David E. & Joseph E. Stiglitz. "Privatization, Information and Incentives." *Journal of Policy Analysis and Management,* 6 (1987): pp. 567-81

Savas, E.S. "Municipal Monopolies Versus Competition in Delivering urban Services." in Willis D. Hawley & David Rogers, eds. *Improving the Quality of Urban Management* Vol. 8 Urban Affairs Annual Reviews Beverley Hills, CA: Sage Publications, 1974

Savas, E.S. *Privatizing the Public Sector: How to Shrink Government* Chatham, NJ: Chatham House Publishers, Inc., 1982

Savas, E.S. *Privatization: The Key to Better Government.* Chatham, NJ: Chatham House Publishers, Inc. 1987

Seader, David. "Privatization and America's Cities." *Public Management,* 68 (December 1986): pp. 6-9

Sharkansky, Ira. "Policy Making and Service Delivery on the Margins of Government: The Case of Contractors." *Public Administration Review,* 40 (March/April 1980): pp. 116-23

Sonenblum, Sidney, John J. Kirlin & John C. Ries. *How Cities Provide Services.* Cambridge, Mass.: Ballinger Publishing Co. 1977

Spann, Robert M. "Public vs. Private Provision of Government Services." in *Budgets and Bureaucrats: The Sources of Government Growth,* Thomas E. Borcharding, ed. Durham, NC: Duke University Press, 1977: pp. 71-89

Starr, Paul. "The Limits of Privatization." in Steve H. Hanke, ed. Proceedings of the Academy of Political Science, Vol. 36 No. 3. New York: The Academy of Political Science, 1987: pp. 124-37

Starr, Paul in Privatization & the Welfare State Shelia B.Kamerman & Alfred J. Kahn, eds. Princeton, NJ: Princeton University Press, 1989

Sullivan, Harold J. "Privatization of Public Services: A Growing Threat to Constitutional Rights." *Public Administration Review,* 47 (November/December 1987): pp. 461-67

Townsend, Marvin. "Privatization - May the Word Die in Peace But Quickly." *Public Management,* 68 (December 1986): pp. 28-9