EDUCATION FINANCE RESEARCH CONSORTIUM

CONDITION REPORTS

PROCUREMENT PRACTICES IN NEW YORK STATE SCHOOL DISTRICTS

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Executive Summary[1]

The planning, purchase, and delivery of goods and services for school districts are managed by school business officials through a procurement process. The environment that school business officials face when managing procurement is challenging, because it is governed by a complex set of state and local laws and regulations designed to promote three goals: 1) ensuring the best price; 2) providing open and fair competition; and 3) preventing favoritism and corruption. The key objective of procurement is "to buy materials, supplies, and equipment of the right quality in the right quantity from the right source at the right price at the proper time." (Wood, et al., 1995) However, efficiency objectives can conflict with financial and legal accountability. The tension created when choosing among goals implies that right answers to procurement pressures or problems are rarely clear and non-controversial.

Very little scholarly research exists about what policies and practices promote effective and efficient procurement management. Professional procurement organizations have documented the latest trends in procurement. However, information on actual practices used by school districts is limited, and evidence in support of the efficiency of "best" procurement practices remains anecdotal, at best. To understand how school districts manage procurement, a survey was administered to 679 school districts in New York State. The objectives of the survey were threefold: 1) to document important procurement practices used by New York school districts, including emerging innovations; 2) to analyze how adoption of practices is related to district characteristics; and 3) to provide district business officials and procurement staff an opportunity to identify the major procurement constraints they face.

Results from the survey indicate that procurement practices vary among school districts in New York, and this variation is most frequently associated with a district's enrollment size. Our multivariate analysis hints that other factors may be at work as well, including proximity to other districts using certain purchasing practices and the presence of a planning process in the district. The following are more specific findings:

Procurement Methods. Most districts use a variety of methods for procurement, and these methods tend to vary by commodity, service, and size of the district.

- Competitive bids and request for proposals (RFPs) are important procurement methods for several categories of commodities, but are not the primary procurement methods in most districts. As expected, the use of competitive sourcing goes up with enrollment size due to bidding requirements under General Municipal Law (GML).
- The use of informal sourcing (price quotes, negotiation, sole sourcing) is most common for a number of materials and supplies (e.g. computer software, library books), and a number of services (e.g. financial services, travel services). Small districts are 2 to 4 times more likely to use informal sourcing as large districts, and districts tend to view competitive sourcing and informal sourcing as direct substitutes for several commodities.

[1] Please see Appendix F for a glossary of commonly used procurement terms.

- All districts have the option of purchasing commodities via the New York State Office of General Service's (OGS) contracts, in lieu of using competitive sourcing, to take advantage of the state's purchasing power. OGS contracts are a leading procurement method for a number of equipment, furniture, and supply categories. While OGS contracts would seem especially advantageous for small districts, their use of OGS contracts was limited by lack of information on available contracts and the complexity of contracts.

- The use of cooperative purchasing groups is important for food and dairy products and maintenance supplies. Very small districts are less apt to participate in cooperatives, possibly due to the lack of procurement staff to work with a cooperative.

- Use of cooperative service agreements (CoSer) with a BOCES is another procurement option, which a number of districts use for services, computer software, and food commodities. Small and medium sized districts are more frequent users of BOCES for materials, supplies, and some services than large districts. Over 80 percent of districts use BOCES for information technology (IT) services, with use linked significantly to district wealth and presumably to availability of state aid.

- Small purchases can pose a challenge for formal procurement systems, because they are often unplanned, of small dollar value, and difficult to control. Use of credit cards (procurement cards) by authorized users has been promoted as a way to maintain flexibility, keep transaction costs low, and provide some control over small purchases. Only one-fifth of New York districts use procurement cards, and their use goes up with enrollment.

E-procurement. E-procurement refers to a range of functions including electronic requisitions, use of the internet for product research and ordering, use of email and/or a government's website to communicate with potential vendors, solicit and process bids, and use of integrated databases for vendor, product, purchase order, and financial information. E-procurement is often touted as a way to reduce unit costs by expanding access to vendors, and decrease administrative costs by reducing paperwork and processing time. The following is a summary of e-procurement practices used by New York districts:

- Procurement staff in most districts use the internet to research price estimates, OGS contracts, or city and county contracts. Internet use for product and vendor research goes up with district size, but small districts are more apt to use the internet for small purchases.

- A much smaller share of districts accept bids online or use an electronic requisition system. Electronic-requisition use increases dramatically with the size of a district.

- Only a few districts have a website devoted to procurement for communication and interaction with vendors, and most of these districts are large in size. Some districts use a regional purchasing group or BOCES to post solicitations on the web as an alternative.

Constraints, Training, & Support. The survey asks several questions about the constraints faced by districts in managing procurement, what resources they presently use from the New York State Education Department (SED), and their interest in training and support on procurement topics.

- Approximately two-thirds of the districts responding to an open-ended question on constraints cited resource constraints (time, staff, and money) as affecting their procurement practices. Small districts frequently cited district size and rural locations as constraints. Large districts are more apt to cite legal restrictions and staff expertise as constraints.

- Over 70 percent of districts use SED procurement services, primarily the SED website. Large districts are much more apt to contact SED staff about procurement issues than small districts.

- Close to half of district respondents expressed an interest in general training and support, and over 80 percent are interested in training on OGS contracts. Training materials, a website on procurement practices, and conferences on procurement topics were requested by a number of districts.

- Small districts are less apt to be interested in training and support, despite the fact that they are less apt to use practices considered innovative among procurement professionals. The lack of trained procurement staff in these districts may partially account for this pattern.

Conclusions & Recommendations

Procurement in New York State school districts is one of many tasks school business officials perform in managing their districts' resources. School business officials procure goods and services through a variety of mechanisms to ensure that teachers, support staff, and administrators are getting the goods and services they need in a timely and cost-effective way.

The legal and institutional environments that govern and support procurement in New York State school districts have several strengths. The legal foundation for procurement in state and education law encourages open and fair competition through bidding requirements, and promotes district accountability through the designation of purchasing agents. State law permits districts to take advantage of economies of scale by buying from state, county or city contracts, forming cooperative purchasing groups with other public entities, and using BOCES to contract for administrative and educational services. To support these practices, the New York State Association of School Business Officials (NYSASBO), the New York State Council of School Superintendents (NYSCOSS), and the New York State Association of Municipal Purchasing Officials (SAMPO) assist school business officials by notifying them about changes in procurement laws and regulations and sharing good practices through conferences and training sessions. SED and the Office of the State Comptroller (OSC) also offer advice about how to interpret laws and set up sufficient control mechanisms to prevent fraud and corruption.

As independent public entities, however, school districts must cultivate their own expertise to manage procurement. Although the state agencies and associations listed above are available to guide procurement decisions, school districts lack a clear source of information and assistance with buying and contracting for goods and services. Our survey results suggest that school districts could benefit from a unified effort by state agencies and associations to clarify legal requirements, provide training assistance, and increase awareness of good practices for procurement. Examples of such efforts include:

- **Increased staffing within SED to provide technical assistance to school districts on procurement policies and practices.** The Office of Education Management (OEM) in SED is not sufficiently staffed to provide the assistance school districts need with procurement policies and practices. To the extent that New York State deems it important that school districts use efficient and effective procurement practices, it is important that SED has enough qualified staff to provide such guidance. Increased staffing within SED is crucial for the successful implementation of the other recommendations discussed below.

- **A website hosted by SED that acts as a central resource about procurement policy, legal requirements, and preferred practices.** OEM currently hosts a website with helpful information about procurement practices for school districts (http://www.emsc.nysed.gov/mgtserv/gemsho.htm). However,

districts could be better served by a website that acts as an information repository compiling procurement guidance provided by state agencies and professional organizations. The website should include SED's procurement policy handbook, training materials, information about and links to OGS contracts, examples of cooperative purchasing groups and contact information, information on BOCES procurement services, guidance on procurement innovations (such as procurement cards), model RFPs and bid solicitations, and links to national and state professional organizations that offer training for procurement personnel. Content for the website should be developed and maintained collaboratively by representatives from SED, OSC, OGS, and the School District Procurement Advisory Council (recommended below).

- **An annual procurement conference organized by SED.** These conferences should bring together procurement experts from SED, OSC, OGS, and professional organizations to present emerging issues in procurement practices to school district personnel. Districts could benefit from training on how to use OGS contracts, organize cooperative purchasing groups, and use e-procurement practices. Panels should address needs and concerns of districts of different sizes, recognizing that practices vary based on enrollment. Proceedings and materials from the conferences should be posted on SED's procurement website (discussed above).

- **An advisory council made up of representatives from school districts and professional organizations to inform state agencies (SED, OSC, OGS) about procurement problems and policy issues.** The council and agencies should meet quarterly to address concerns and develop advisory notices for all school districts. Our survey responses suggest an immediate agenda could include:

  1) *Consideration to revise GML bidding requirements.* The council should consider GML bidding requirements relative to size of district operating budgets. For example, procurements exceeding $10,000 or 0.1 percent of operating expenditures in the previous year (whichever is higher), could trigger competitive bidding requirements instead of uniformly requiring districts (regardless of size) to bid for goods exceeding $10,000 (and $20,000 for public works contracts).

  2) *Clarification on the legal use of procurement cards*. The council should evaluate the use of procurement cards for low value, high volume purchases to reduce transaction costs.

  3) *Recommendations on procurement of professional services.* The council should determine if it is desirable to encourage periodic competitive sourcing of most professional services and develop model RFP documents for these services (e.g. auditing).

  4) *An investigation into the under-utilization of OGS contracts, especially among small districts.* If under-utilization is due to complexity of or lack of information about OGS contracts, then improvements should be considered in training materials and simplification of the contracting process. If lack of use is due to price, quality, or lack of delivery, then recommendations should be made on how SED can assist OGS in better matching contracts to meet the needs of school districts.

  5) *The development of easy-to-use, pre-packaged e-procurement tools* such as a software package that interacts with school districts websites to post procurement information and solicitations for vendors and bidders lists.

  6) *Recommendations on how procurement assistance can be provided to small districts with limited procurement staff.* Consideration should be given to expanding the role of BOCES in providing technical procurement services, or assisting small districts in sharing professional procurement staff.

  7) *Recommendations on procurement training courses.* The council should evaluate training material available from public procurement organizations, such as the National Institute for Government Procurement (NIGP) and National Association of State Procurement Officials (NASPO), and develop recommendations about courses that are appropriate and useful for school districts.

I. INTRODUCTION

New York State school districts spend over $5 billion on goods and services (non-personnel) each year. This figure represents 14 percent of statewide educational expenditures and supports essential instructional services.[2] The planning, purchase, and delivery of goods and services are managed by school business officials through a procurement process. A key objective of procurement is "to buy materials, supplies, and equipment of the right quality in the right quantity from the right source at the right price at the proper time." (Wood, et al., 1995)

Procurement in New York State school districts is one of many tasks school business officials perform in managing their districts' resources. Governed by a complex set of state and local laws and regulations, school districts' procurement systems are designed to promote three goals: 1) ensuring the best price for a good or service; 2) providing open and fair competition among local vendors; and 3) preventing favoritism and corruption (NYS GML §104-b). Although these goals support responsible use of public funds, they frequently lead to time-consuming, duplicative processes that frustrate school business officials and end-users.

School districts are not alone in facing these challenges. Public entities across the nation have implemented reforms in procurement, including streamlining laws and processes, applying more flexible acquisition methods, and harnessing e-government applications for purchasing functions. These efforts have, in some cases, been rewarded through better prices, lower transaction costs, and faster acquisition cycles without sacrificing necessary safeguards for public funds (Abramson and Harris, 2003).

As school districts across New York State seek more resources to meet performance standards, the success of other public entities' procurement reforms could help guide school districts toward similar benefits. To assess opportunities for improved procurement management, it is necessary to know what practices are used by New York State's school districts. The purpose of this report is to present findings from a statewide survey that documents procurement practices of school districts (including use of emerging practices), and documents the major constraints school business officials identify as limiting their ability to purchase goods and supplies efficiently.

The report is organized into seven sections. The first three sections discuss the key components of procurement management, the strategic choices governments make when deciding on procurement practices, and emerging practices and innovations in public procurement. The second half of the report describes the survey, reports responses from New York State school districts, analyzes practices of these districts, and offers conclusions and recommendations that could lead to better procurement management across the state.

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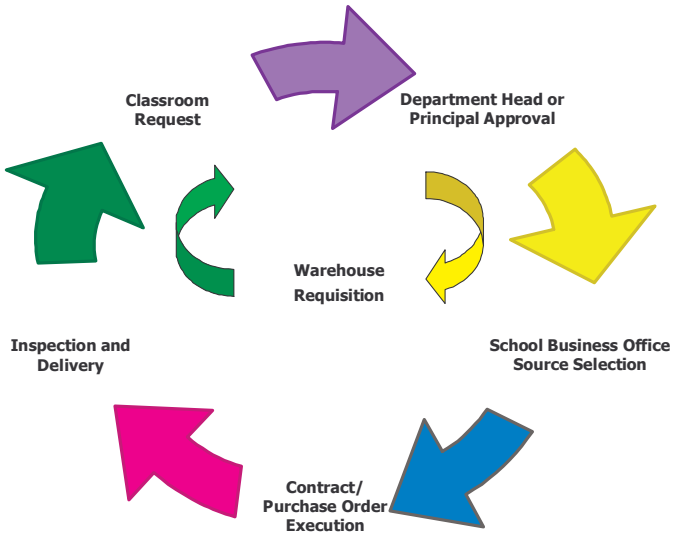
[2] These figures exclude teacher salaries, tuition paid to BOCES and other districts, and non-instructional expenditures including transportation and debt service. New York State Education Department, Office of Management Services, Fiscal Analysis and Research Unit, *Fiscal Profile Reporting System Masterfile for 2001-02*. Available from the website of the New York State Education Department: http://www.oms.nysed.gov/faru/Profiles/profiles_cover.htm.

II. Key Components of Procurement Management[3]

Procurement encompasses "the combined functions of purchasing, inventory control, traffic and transportation, receiving and inspection, storekeeping, and salvage and disposal operations." (National Institute of Government Purchasing (NIGP), 1996). It involves the entire lifecycle of an organization's assets, supplies, and contracted services. The procurement process can be viewed as a bottom-up and top-down process. Requests for goods and services travel up the hierarchy for approval and payment, and back down for delivery and use. Figure 1 depicts the procurement process, from requisition to delivery, in a typical New York State school district. The major components of the process include planning, source selection, contract management, and delivery and inspection (Learn, 1994).

Figure 1
Procurement Process in a Typical NYS School District



Planning

Procurement planning is a strategic process that works in tandem with executive and curricular planning to identify instructional objectives, potential programs to achieve these objectives, and resource requirements. The National Association of State Purchasing Officials (NASPO, 2001) recommends that procurement staff be a central part of an organization's strategic management team. Linking procurement to a district's strategic goals requires developing estimates of district needs, researching product specifications,

[3] Please see Appendix F for a glossary of commonly used procurement terms.

devising a schedule for purchases, and building relationships with vendors who will supply the goods and services.

Estimates of Requirements. The first step in the procurement process is identifying purchasing requirements—what commodities are needed for daily operations. Requirements can be determined based on staff requisitions or periodic surveys of staff. A purchasing management information system can be used to complement planning by providing information on historical buying patterns and projections of future requirements (NASPO, 2001). Accurate needs assessment can help districts reduce costs and comply with state procurement law by identifying opportunities for pooling purchases. New York General Municipal Law requires that commodity purchases with an estimated value over $10,000 ($20,000 for public works contracts) be competitively bid (NYS GML §103(1)). If no planning takes place to determine the potential for pooled purchases, the district is at risk of violating state law.

Product Specification and Research. An important element of planning is product specification and research. Districts have quality requirements for supplies, materials, and equipment that are reflected in the cost (e.g. American Disabilities Act compliance). These standards are considered when developing specifications for bid documents, determining price estimates, and investigating the market that can supply the good or service. Good specification writing is the key to acquiring a suitable product or service and avoiding disputes with vendors when end users are not satisfied with the type or quality of good or service under contract. Writing specifications too narrowly, however, may discourage competition (Gretton, 1994; Finkel, 1998). Procurement officials must weigh these factors when determining the design, performance, and brand specifications for desired products.

Scheduling. The demand for materials and supplies fluctuates throughout the school year. However, districts can control the timing of orders and deliveries by proper scheduling. Use of purchasing calendars to notify schools and vendors when the business office expects to procure certain goods and services can reduce the burden on the business office during peak periods of the year, give vendors reasonable time to stock and deliver the needed good or service, can reduce unit prices through off-peak purchasing, enable the business office to combine similar purchases across schools to get a better price through bulk purchasing, and reduce administrative costs of multiple purchase orders (SED, 2004). The use of purchasing calendars requires careful planning, and is effective when proper authority is granted to procurement officials to enforce compliance to the schedule among school staff.

Vendor relationships. The success school districts have in getting the lowest price will depend in large part on attracting a group of vendors to compete for provision of the commodity or service. Districts first need to identify potential vendors, and then actively solicit their bids. The maintenance of vendor or bidders lists is the most common approach for identifying potential vendors. An important task of the procurement officer is the maintenance and expansion of the bidders list. Governments can encourage new vendors to bid through pre-solicitation conferences, which solicit information from vendors on possible specifications, and pre-bid conferences which provide vendors the opportunity to ask questions prior to the bid (NASPO, 2001). Keeping

vendors informed of district practices can be aided by a vendor's manual that explains the laws and regulations governing a district's procurement process.

Source Selection

A second component to procurement management is determining how to acquire the good or service. Source selection can depend on the volume and price of the goods purchased. Methods for large volume and/or high price purchases may not make sense for small volume and/or low price purchases.

Small purchases. Procurement of some materials and supplies can be in low volume and/or low value, particularly in small districts. While districts can formally source these purchases, the transaction costs associated with bidding and proposals can outweigh the potential cost savings. Thus, districts have developed a variety of alternative methods for small purchases.[4] District can competitively bid a one-year contract for the provision of a group of commodities at a set unit price from one vendor, commonly called requirements contracts. Schools that need goods in amounts less than competitive bidding requirements put in a requisition to buy off the requirements contract as needed throughout the year. Districts can also institute purchasing policies that require a certain number of verbal or written price quotes (typically 3) for commodities above specified amounts but below bidding requirements. Requirements contracts and price quotes can be combined with the use of credit cards ("procurement cards") to reduce the processing time for small transactions (more on procurement cards later).

Competitive Bids. Formal competitive sourcing involves soliciting vendors to offer bids on very specific types and quantities of goods and services.[5] Competitive bidding is the preferred sourcing method in New York State, because it assumes that market forces will assure the lowest price given enough vendors bidding to supply a good or service. In New York State, competitive bids are to be awarded to "lowest responsible bidder," where the commodity meets the defined specifications and the vendor is determined to be reputable and reliable. Competitive bidding is also structured to be an open and impartial process through solicitations for bids via public media and the public opening of bids. Districts can comply with competitive bidding requirements without soliciting bids themselves by using state contracts from the New York State Office of General Services (OGS), or by joining with other districts or localities to cooperatively bid a contract to pool their purchasing power.

Request for Proposals. Formal sourcing can also include requests for proposals (RFPs). Generally the scope of work for RFPs is more complex and requires evaluation of criteria deemed important to the end product or service. RFPs are more time-consuming than competitive bidding, because significant effort goes into developing evaluation criteria, selecting an evaluation committee, assessing the proposals, and asking for best

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[4] Small purchases fall under the dollar limits set by New York State General Municipal Law (GML) for competitive bidding. GML requires districts to develop written procedures for procurements that fall below these thresholds as to "assure the prudent and economical use of public moneys in the best interest of the taxpayer." (NYS GML §104(b)).

[5] Some services are competitively bid when the scope of work is easily specified. Commonly bid services include custodial, maintenance, and painting services.

and final offers among the vendors that the committee selects for final evaluation. In New York State, RFPs cannot be used for materials, supplies, and equipment exceeding $10,000 or $20,000 for public works contracts. (Competitive bidding is required under GML.) RFPs are generally used for professional services, such as financial, engineering, and legal services, that are not required to be competitively bid under GML.

Informal Sourcing. As discussed briefly under small purchases, district boards of educations must specify what procurement methods are preferred when competitive bidding is not legally required. These methods can include written or verbal price quotes, negotiation with select vendors, or sole sourcing. Negotiation and sole sourcing are used when there are only a few vendors (or just one) that can supply a good or service. Typical negotiation contracts include the provision of telecommunication services and auditing services. Districts are discouraged from using negotiation or sole sourcing unless the goods or services they need have a small market or rapid delivery is required because of an emergency. The most frequently used informal sourcing method is price quotes, especially among small districts, when the good or service is not of high enough value or volume to trigger competitive bidding requirements.

Other Procurement Functions

Contract Management. A third, often neglected, component of the procurement process is contract management. Once a contract is in place, the school business official, or an appointed project manager administers it by coordinating work requirements, resolving disputes, monitoring performance, ensuring prompt payment when milestones are reached, and enforcing contract penalties when terms are violated. A procurement official can be involved in contract administration by monitoring compliance of the contract in terms of product quality, price, and delivery date. Product quality can be determined by soliciting feedback from end users, or carrying out product tests to evaluate compliance with specifications, and variance in product quality (NASPO, 2001).

Warehouse and Inventory Management. A final component of managing procurement is the storage of commodities before distribution to schools. Some districts receive materials, supplies, and equipment from vendors through a central warehouse, while others choose to have goods delivered directly to the end user (typically a school). Operating a warehouse involves developing a system of requisitions and deliveries, tracking the number of items available in storage, and determining when to commit resources to bulk orders. Central warehousing is potentially advantageous, particularly for large school districts, due to lower prices from bulk purchases, discounts for ordering at off-peak times, and improved data collection from centralized tracking and inspection. However, more decentralized distributions systems, such as “just in time”(JIT) ordering, can eliminate holding and delivery costs for inventories, reduce administrative and clerical costs of central warehouses, and allow more flexibility for school officials to match end user demands (Woods, et al., 1995). Decentralized options, however, require careful planning if the district is going to avoid costly last minute purchases.

III. STRATEGIC CHOICES

School business officials make strategic choices when designing their procurement systems and managing day-to-day purchasing. These choices can promote all three goals of public procurement, or favor one goal over another.[6] The tension created when choosing among goals, implies that right answers to procurement problems are rarely clear and non-controversial. School business officials attempt to balance the demands of teachers, support staff, administrators, and vendors while trying to get the best value for their districts' dollars. The guiding principles outlined by the NASPO (2001) highlight the many demands of public procurement:

> (The) fundamentals call for a public procurement program where public business is open to competition; where vendors are treated fairly; where contracts are administered impartially; where value, quality and economy are basic and equally important aims, and where the process is open to public scrutiny. (p. 4)

Centralization vs. Decentralization

A fundamental decision that school business officials make in designing their procurement processes is how much to centralize the purchasing function. Clearly assigning responsibility to one official or office promotes standardization, which should reduce price and maintenance costs. Centralization can also increase control over unnecessary, excessive, or potentially fraudulent spending. Conversely, decentralization promotes end user satisfaction by giving schools authority to select the type of good or service that is unique to their needs, and increases flexibility to acquire goods and services in a timely manner (McCue, 2001). Formal rules and procedures surrounding a centralized process can make the process slower and less flexible, which increase processing time and transaction costs. The key tradeoff is between the control and price advantages of centralization compared to the speed, flexibility, and end-user satisfaction of decentralized process.[7] NASPO and NIGP recommend that state and local governments have a central procurement office run by a chief procurement official (CPO), who should report directly to the CEO. All procurement decisions should ultimately pass through the procurement office, although the CPO can choose to delegate parts of the procurement function to other organizations.

The small size of many school districts implies that organization of the procurement process is less formal than recommended by NASPO, and the assignment of the procurement function is often one of many functions performed by school business officials. In New York State, a degree of centralization is required legally. Regulations of the Commissioner of Education require all school districts to designate a purchasing agent, who is the only person authorized to approve procurements—from paper to school buses. General Municipal Law also requires "boards of education to adopt internal policies and procedures governing all purchases of goods and services not required to be competitively bid." (SED, 2004, p. 39) School business officials can introduce varying degrees of decentralization into the system by setting dollar thresholds for

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[6] State and local procurement laws and regulations are designed to promote three goals: 1) ensuring the best price; 2) providing open and fair competition; and 3) preventing favoritism and corruption.

[7] As discussed later in the report, the introduction of e-procurement applications can mitigate this tradeoff.

small purchases and making the requisition process more user-driven; but ultimately, the responsibility for procurement lies with the designated purchasing agent.

Control vs. Flexibility

Designating a purchasing agent is a good practice that promotes clear responsibility and accountability for procurement within a school system. The degree to which this authority is managed, however, is played out in the amount of control that the purchasing agent exerts over day-to-day operations. Control mechanisms are built into the procurement process from requisition to payment. Control can vary based on dollar thresholds for small purchases, the extent to which a school must justify a requisition, the number of signatures required to approve purchase orders, the limitation of vendors that schools can use, etc. (NASPO, 2001). Although a district aims to prevent fraud and waste through these control mechanisms, there is an explicit cost to the system—time, administrative burden, and transaction costs. Managers of procurement must weigh the value of these safeguards with timeliness and flexibility. These are not mutually exclusive outcomes, but generally a high degree of control leads to longer procurement cycles. Control mechanisms can be self-defeating when end users look for ways to circumvent them to get goods and services in a more timely way (Anechiarico and Jacobs, 1996).

In addition to accountability, control mechanisms are designed to keep costs low. As mentioned above, competitive bidding is the statutorily required method of procuring large volume, high priced goods and services because it is believed to result in the best price from a competitive market. However, there are numerous factors that influence price and ultimately best value. Price depends on quantity of goods purchased, location, market conditions, timeliness of delivery, insurance requirements, maintenance, and disposal costs. Value is generally a function of quality, including durability, functionality, performance, and tastes. Unit prices, evaluated in isolation, obscure these determinants of price.

Lowest Price vs. Best Value

Choosing between lowest price and best value is an important tradeoff that often does not receive adequate attention in procurement decisions. Business officials should consider which factors are important in a purchase and weigh lowest unit price versus long-term value.[8] Best value takes into account the purchase and delivery price, the quality and performance of the item purchased, other costs associated with operations and maintenance, and product support (McCue, Buffington, and Howell, 2003). The concept of "life cycle costs" (LCC) is often used to describe the total cost of ownership of a commodity. LCC includes purchase

[8] The difficulty of comparing unit prices of similar commodities across districts is illustrated in an audit of school districts by the Auditor General for the State of Florida. The report revealed that districts were paying a range of prices for similar goods. When these differences were reported, school districts defended their unit prices on grounds of diverse preferences and circumstances (State of Florida OAG, 1996). An item was cheaper in one district versus another because of access to more vendors, fewer quality constraints, storage availability, lower disposal costs, and less demanding preferences of the end-user. Some districts chose more expensive goods, because they had calculated the total cost of ownership to be less expensive over 20 years.

price, maintenance costs and operating costs over its lifecycle, and any disposal cost (Coe, 1993). However, the use of best value analysis in procurement among school districts is probably limited, because state procurement laws typically require lowest price. Another constraint is the added time and information required to determine the quality and life cycle costs of vendor bids. In the area of information technology in school districts, for example, there has been a recent initiative to develop tools for school districts to consider "total cost of ownership," which is "generally defined as assessing all costs associated with operating and maintenance of a computer network." (Fitzgerald, 2004, p. 5).

IV. EMERGING PRACTICES & INNOVATIONS

Recent reviews of emerging trends in government procurement have emphasized several areas: 1) a broader procurement function and an increasing need for professionalism among procurement staff; 2) increasingly computerized procurement management and electronic commerce applications (e-procurement); 3) strategic alliances among buyers to get the best price; 4) streamlining small purchases; and 5) increasing partnerships among governments and vendors to provide better value (Learn, 1994; Dobblin, 2000; Thai and Grimm, 2000; NASPO, 2001). However, the evidence in support of the efficiency benefits of these reforms remains anecdotal, at best.

Professionalism of the Procurement Function

The term "supply chain management" describes the broad role of procurement in school districts (Dobbin, 2000, NASPO, 1999), including purchasing, strategic planning, inventory control, quality assurance, distribution, salvage and disposal, and contract management. Despite the increasing complexity of procurement, it is frequently marginalized as a clerical function requiring little skill (Coe, 1993). Changing technology and the expanded role for procurement imply the need for increasing professionalism among procurement staff. To develop such expertise, NIGP and NASPO support professional certifications in public procurement. The Certified Professional Public Buyer (CPPB) and Certified Pubic Purchasing Officer (CPPO) designations require formal college education, coursework in procurement, and work experience in purchasing. The CPPB and CPPO certifications are "meaningful standards for employment and advancement of public procurement personnel." (UPPCC, 2004, p.5) Some states have developed complementary or supplementary programs of their own to enhance the professionalism of their procurement officers and target training relative to state specific codes and statutes. The New York State Office of General Services offers training seminars for procurement staff, but it does not have its own certification program.

E-Procurement

The reform cited most frequently as changing the nature of public procurement is the use of digital information and the internet in the procurement process. A 2001 survey of local government chief purchasing officers asked what trends would impact the purchasing function over the next decade, and 96 percent indicated that the use of the internet would be a major strategy (McCue, 2001). E-procurement can refer to a range of functions including electronic requisitions, use of the internet for product research and ordering, use of email and/or a government's website to communicate with potential vendors, solicit and process bids, and use of integrated databases of vendor, product, purchase order, and financial information. More sophisticated systems use electronic tools to make the purchasing process paperless from requisition to payment. Advocates of e-procurement envision that it will revolutionize procurement by reducing paper work and transaction costs for purchase orders, reducing processing time, increasing the list of potential vendors, improving planning

and product research through integrated databases, and increasing the choices and flexibility for end users through access to electronic catalogs (Corvino, 2000; Neef, 2001; Moon, 2002).

Despite the popularity and perceived benefits of e-procurement, its implementation in government has been slow. MacManus (2002) argues that the delayed implementation has been due to lack of trained staff and available software for government applications, but also due to conflicts between common e-procurement applications and traditional components of government procurement systems (separation of vendor and user, fixed price and term contracts, and open access). Implementing an e-procurement system involves more than the application of technology to a district's current purchasing system. It requires process reassessment and redesign, commitment of financial resources, legal framework changes, and expertise of IT project management (Moon, 2002). These challenges can be daunting for any size of government, much less for a busy school business official.

Cooperative Purchasing & Use of State Contracts

Managing a competitive bidding process requires identifying and communicating with vendors, developing specifications, advertising bidding opportunities, evaluating bids, awarding the contract, and managing the contract. The costs of managing competitive bids are more burdensome for very small districts relative to those of moderate to large size. In part to recognize the financial constraints that small governments face and the administrative costs of bidding, procurement laws typically set a fixed dollar threshold for competitive bidding. Not surprisingly, small governments are much less apt to use competitive bidding than larger governments, because their purchase contracts fall below bidding requirements. Instead, they frequently use informal sourcing methods such as price quotes and negotiation.

Small districts, however, can get the price advantages from competitive bidding without having to manage the bidding process themselves by "piggybacking" on contracts of larger governments or working with other governments to bid cooperatively for contracts (Coe, 1993). Many states allow their local governments to buy off of state contracts or contracts of larger local governments (such as cities or counties). One disadvantage to piggybacking is that districts have little opportunity to change the types and quality of commodities available through existing contracts. An alternative, which might better match the needs of districts, is to work cooperatively with groups of governments with similar needs to develop joint solicitations. Known as cooperative purchasing, this method can reduce unit price and may encourage governments to share other procurement practices. If districts have sufficient staff resources to coordinate and maintain cooperative contracts, it is an ideal opportunity to realize economies of scale among districts that have similar needs.

Strategic Sourcing

The traditional view of vendor relations involves a formal structured relationship, where the vendor is kept at arms-length. Contact with vendors in the selection process is limited to identifying potential vendors and providing information on contracting with the school district through a vendor manual or pre-bid conference. Vendor selection through open competition is based on lowest price among responsible bidders. The traditional view of vendor relations has been challenged as inefficient, because it ignores the benefits of a long-term and strategic relationship. Kelman (1990) concluded, based on a review of information technology contracts in the federal government, that typical controls on competitive bidding and vendor relations "are more often the source of the problem than the solution…public officials cannot use common sense and good judgment in ways that would promote better vendor performance." (p. 1)

Kelman is echoing a trend toward the use of "strategic sourcing." There are several components to strategic sourcing—knowing what it being purchased, who is doing the purchasing, and where items are being purchased.[9] The objective is to create better value by capturing purchasing trends within an organization, consolidating and standardizing commonly purchased items, and developing partnerships with vendors, which includes working closely with a few vendors in the planning and design, stage to take full advantage of vendors' expertise and resources to supply a good or service. Partnerships may involve longer-term contracts, where the vendor shares in part of the risk. While this type of negotiation opens up a school district to inflated prices, (if the vendor feels they have a monopoly on provision), the potential of getting future contracts from the organization may provide strong incentives for vendors to provide the most reasonable offer.

Procurement Cards

Public entities have realized that low dollar, high volume purchases can incur transaction costs that are expensive relative to the price of the item because of the time associated with processing requisitions and purchase orders. A study done by American Express for New York State agencies found that almost 50 percent of its small purchases were under $100, but it costs approximately $67 to process each invoice for payment (NYSOSC, 2004). To reduce these costs, many state governments, including New York, now use procurement cards issued through credit card companies.[10] Procurement cards, often called P-cards, permit authorized users to buy directly from a vendor (in person, by fax, or online) without issuing a purchase order or voucher. The benefits include lower transaction costs, greater flexibility for end-users to purchase goods

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[9] California's Strategic Sourcing Initiative is described as, "an approach where the buyer (California) analyzes what it's buying, what the market conditions are and who can supply those goods or services. Then the buyer uses that information—plus innovative contracting techniques—to find the best values available in the marketplace" (State of California DGS, 2004).

[10] For more information on the contract between Citibank and New York State see State of New York Executive Department, Office of General Services Procurement Services Group. 2003. *Contract Award Notification: Award 02837, Contract No. PS60443*. August 22, 2003. Available on OGS' website: http://www.ogs.state.ny.us/purchase/snt/awardnotes/7900802837can.htm.

and services quickly, and improved record-keeping of what was purchased, who completed the transaction, and the specific time and location of the procurement (Moon, 2002).[11]

Although most state governments have adopted the use of P-cards (40 states as of a 2001 NASPO survey), local governments may be hesitate to use them, because of concerns about control and accountability, fraud and abuse (Daly and Buehner, 2003). These concerns are likely to apply to school districts as well. In addition, New York State General Municipal Law and State Education Law do not explicitly address whether or not school districts may use P-cards. The Office of the New York State Comptroller (OSC) introduced legislation in 2002 to clarify the appropriate use of procurement cards, but the bill is pending approval by the Assembly and Senate. Guidelines contained in the pending bill direct localities and school districts on the appropriate uses of P-cards, mechanisms for effective internal controls, and cautions on contract language needed to comply with state finance laws.[12]

[11] The Office of the New York State Comptroller recognizes the benefits of using P-cards for low dollar purchases and encourages their use among state agencies with appropriate internal controls in place to prevent fraud and abuse of public moneys (NYSOSC, 2004).

[12] Assembly Bill 11347 (2002). Information about the bill was obtained during a conference call with John Traylor, Assistant Director, Office of the State Comptroller Local Government Services unit on December 10, 2004.

V. Survey Design and Implementation

Survey Objectives

The literature on procurement practices in school districts is largely prescriptive and anecdotal in nature.[13] The primary objective of this survey is to document procurement practices used by school districts in New York State. Examining actual practices is important for several reasons. First, it is valuable to provide baseline information on present practices used by districts before evaluating the impacts of future policy changes or training programs. To the extent that practices vary significantly across districts due to characteristics that are outside of district control (such as enrollment), recommendations for policy changes and training programs may also vary. Second, we want to document dissemination of emerging procurement trends by school districts in New York.

A second objective of the survey is to provide district business officials and procurement staff an opportunity to identify the major constraints and challenges they face in efficiently procuring commodities and services for their school district. Subsequently, the survey also asked business officials about what additional training and support would be valuable to them. It is an aim of the survey to provide information to organizations such as SED, NYSASBO, OGS, and SAMPO on the types of training and outreach that would be valuable to school district staff.

Survey Design

The range of topics that could be included in a survey of procurement practices is broad. To keep the length manageable, we limited the survey to important practices and emerging trends as identified in the procurement literature. In selecting questions, we eliminated ones eliciting responses with little variation across New York school districts. We also removed questions that required significant research for a meaningful response and questions vulnerable to misinterpretation.

Most survey questions are of three types: simple binary response categories, multiple response (check all that apply), and ordinal scales. For some questions we allowed respondents to select "other" and provide a description or explanation. A few open-ended responses were included at the end of the survey. For these open-ended responses, we wrote detailed questions so that responses might be comparable across surveys. The full survey instrument is available in Appendix A to this report.

The first draft of the survey was reviewed by several school business officials,[14] and staff members at SED and OGS. Based on the feedback we received from reviewers, modifications were made to the survey instrument. A mailing list of school business officials was developed using the mailing list of NYSASBO and

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[13] The Association of School Business Officials International (ASBO) has published a number of case studies of school district procurement practices through its monthly magazine, *School Business Affairs*. ASBO has published a manual on good procurement practices (Munsterman, 1978), but it has not been updated in decades. The principal textbook for training of school business officials published by ASBO (Wood, et al., 1995) focuses on the legal aspects of procurement rather than what districts actually do.

[14] NYSASBO's finance committee reviewed the survey during a committee meeting in early February. The survey was also sent to several business officials that were recommended to us, or were chapter presidents of NYSASBO.

SED. The final list of districts excluded New York City, districts with less than 8 teachers, and "special act" districts resulting in sample of 679 districts.

Survey Implementation

A number of steps were taken to maximize the response rate to the survey. NYSASBO and NYSCOSS were asked to sponsor the surveys which involved using their logo on the survey instrument and sending a joint cover letter of endorsement with the survey. NYSASBO also allowed us to put a link to the survey on their website and mentioned the survey in their electronic newsletter.

To provide the greatest flexibility possible, the survey was available in both hardcopy and online.[15] We sent several waves of mailings to school business officials or superintendents. The first mailing was sent in early April of 2004, and included a copy of the survey, a sheet of instructions on how to use the online survey, a postage paid return envelop, and a cover letter explaining the objectives and importance of the survey. (A copy of the cover letter is available in appendix B.) Approximately10 days after the first mailing we sent out a postcard to all districts on our mailing list, reminding districts about the survey that had been sent out and encouraging completion. Three weeks after the first mailing we sent a second full packet to non-responding districts, and two months after initial mailing, we sent out a third packet of the same material to non-respondents.

Several other strategies were taken to encourage response. We sent chapter presidents of NYSASBO a list of business officials in their area that had not responded to the survey, and asked them to send an email to these members encouraging participation. Finally, we sent emails to non-respondents for whom we had email addresses in late June encouraging their participation before the survey closed in early July. The survey was formally closed in late July, and a thank you letter was send to respondents in late August.

Characteristics of the Sample

From the initial set of responses, we removed districts with significant missing observations or where the survey was entered twice (both paper and online). The resulting sample included 431 responses for a response rate of 63.5 percent. However, 4 of these districts removed their district identifier so we could not merge the survey information with other district data. While most respondents (61.5 percent) completed the paper survey, a sizeable share seemed to prefer the online survey. The response rate to the survey was excellent, especially considering the busy schedules of school business officials.

To examine how representative the sample is of all school districts in New York we compared average district characteristics for districts completing the survey and those not completing the survey. Included in our comparison are enrollment, student characteristics, fiscal capacity, expenditures and revenues, and SED district classifications. The results of this comparison are presented in Table 1.

[15] The survey package, Survey Monkey, was used to design the online survey and store survey results.

Table 1
Evaluation of Whether Sample Is Representative of All Districts In New York School Procurement Practices Survey[1]

	All Districts	Districts In Survey	Districts Not in Survey
Enrollment Variables:			
Enrollment (dcaadm)	2,676	2,723	2,596
Percent nonwhite enrollment	11.5	10.6	13.1
Percent Hispanic enrollment	4.5	4.1	5.1
Percent LEP students	1.4	1.2	1.6
Percent of free lunch students	29.4	29.5	29.1
Child poverty rate (2000)	11.6	11.8	11.3
Percent single mother families	6.3	6.4	6.1
Financial Variables:			
Per pupil total spending	$16,565	$16,294	$17,026
Per pupil operating spending	***$14,389***	***$14,047***	***$14,972***
Per pupil non-salary instructional spending	***$621***	***$595***	***$666***
Per pupil operating and maint. spending	$890	$870	$925
Per pupil state aid	$5,680	$5,795	$5,485
Per pupil local taxes	***$7,940***	***$7,500***	***$8,690***
Local property tax rate (per $1000 of MV)	17.1	16.4	18.2
Combined wealth ratio (CWR)	**1.19**	**1.08**	**1.38**
Per pupil income (AGI)	$142,584	$136,128	$153,540
Per pupil market property values	$657,545	$553,414	$834,693
District Classifications (Percent of all districts):			
SED regions			
Large and small city districts	8.8	9.4	8.0
Upstate and downstate suburban districts	60.8	60.2	61.8
Upstate rural districts	30.4	30.4	30.3
Downstate districts	***26.1***	***23.2***	***31.1***
Upstate districts	***73.9***	***76.8***	***68.9***
Need/resource capacity categories			
High need urban districts[2]	6.0	5.9	6.4
High need rural districts	23.6	23.7	23.5
Average need districts	50.4	52.5	47.0
Low need districts	19.8	18.0	22.7

Sources: New York State Education Department, Office of the New York State Comptroller, U.S. Census Bureau.

Notes: [1]Bold and italics indicates a statistically signficant difference between districts completing the survey and those not completing survey (at 5% level). [2]Includes the categories for large cities and other high need urban districts.

Districts in the survey tend to be slightly larger, and less racially and ethnically diverse, although these differences are not statistically significant. Regarding district finances, districts in the survey tend to have lower spending, especially for operating expenses, and lower revenue due to both lower tax rates, and lower fiscal capacity, particularly property wealth. Several of these differences are statistically significant. Respondents and non-respondents tend to be distributed evenly among city, suburban, and rural districts. Respondents are less likely to be located in downstate districts than non-respondents. A slightly higher share of districts completing the survey are average need districts, and a lower share are low need districts, although these differences are not statistically significant. With the exception of financial variables, the sample of districts responding to the survey shares similar characteristics to non-respondents.

VI. SURVEY RESULTS

The high response rate and representative nature of the sample permits an in depth examination of the procurement practices of New York school districts. In the basic analysis of survey results, we have three objectives. First, we want to document the use of various procurement practices. Second, we are trying to identify patterns in the use of practices. For example, do districts using purchasing calendars also tend to have a central warehouse? Third, is the use of procurement practices influenced by external characteristics of the district, such as enrollment.[16] We might expect that district size could be an important determinant of the use of some practices, but district fiscal capacity, student socio-economic characteristics, and district location could also affect choices. In this section, we will examine simple bivariate relationships between procurement practices and district characteristics. In the next section, we present a model of procurement practice adoption, and estimate multivariate regressions. Basic results for each survey question are presented in Appendix C.

Resources, Planning, & Vendor Relations

Procurement can be labor intensive for school districts, especially if the district integrates it into planning and uses competitive or cooperative bidding as principal purchasing methods. Due to space limitations in the survey, we did not ask about the organizational structure of district procurement offices. Instead, districts were asked several indirect questions about staffing, planning, and vendor relations. The results of the staffing question will be covered in the section on constraints.

We asked several questions related to the involvement of procurement staff in planning and research functions. Approximately half of the districts use purchasing calendars, which is recommended to reduce unit costs. Over two-thirds of districts use the internet to research price estimates and OGS contracts online. The share of districts using these practices goes up significantly in large school districts,[17] and is higher in high need urban and average need districts.[18] Over 75 percent of districts have a common standard for computers, which is part of a comprehensive IT strategy. The use of planning practices, such as purchasing calendars and the internet for research, is not related to the total size of the procurement staff, and is negatively related to procurement staff per pupil. The effective use of a procurement calendar may require a central warehouse for storing bulk purchases if districts want to order during off-peak times. The use of purchasing calendars (and use of internet for research) is positively related to the existence of a warehouse, even controlling for district enrollment.[19]

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[16] For this report, we have chosen to use a measure of average daily membership (dcaadm) as the enrollment measure, because it reflects average enrollment over the course of the year. Results would change little if fall enrollment counts were used.

[17] In this report, we divide enrollment into five categories: 1) Very small—less than 10th percentile (530 pupils); 2) Small—10th to less than 30th percentile (531 to 1,141 pupils); 3) Medium—30th to 70th percentile (1,142 to 2,788 pupils); 4) Large—above 70th to 90th percentile (2,789 to 5,733 pupils); and 5) Very large—above the 90th percentile (5,734 pupils and above). On a few tables we will use only three categories: 1) Small—under 30th percentile; 2) Medium—30th to 70th percentile; and 3) Large—above 70th percentile.

[18] Tables with information categorized by other factors besides enrollment are in Appendix D.

[19] Estimated with logistic regression. The section on multivariate analysis will present these results in more detail.

Turning to vendor relations, we examined whether the district maintains a vendor list, provides a vendor manual, and uses the internet to provide vendor manuals and communicate with vendors. Close to 80 percent of districts have a bidders list, although this share is only 53 percent in the smallest districts. For those districts with a bidders list, most of the vendors on the list came from either previous bids or the vendors were asked to be put on the list. There is relatively little sharing of bidders lists across districts. Only a small share of districts (14 percent) have a vendor manual to inform potential vendors about district procurement policies. Half of the districts use the internet to communicate with vendors, staff, and other districts on procurement issues. The use of bidders lists, vendors manuals, and the internet for communication with vendors rises significantly with district size. The number of cancelled contracts averages 1.5 in total, and 0.1 per 100 students.[20] The number of cancelled contracts per student is significantly higher in the smallest districts (and high need rural districts). Cancellations per pupil are not related to procurement staffing, use of vendor manuals, or bidders lists when controlling for enrollment.

Table 2
Resources, Planning and Vendor Relations by Enrollment Size[1]

		Enrollment Size				
	All Districts	**Very Small**	**Small**	**Medium**	**Large**	**Very Large**
Resources and planning:						
Use procurement calendar (percent)	50.4	***40.0***	***29.8***	***45.9***	***74.1***	***72.5***
Research price estimates online (percent)	74.2	***76.3***	***66.7***	***70.2***	***84.7***	***83.7***
Research OGS contracts online (percent)	67.9	***50.0***	***56.7***	***66.1***	***80.0***	***90.7***
Have a common standard for computers (percent)	77.0	68.4	71.1	78.4	81.2	83.7
Computer standards are part of a comprehensive IT strategy (percent)	92.6	96.2	91.9	91.8	95.5	88.9
Vendor relations:						
Have a bidders list (percent)	78.5	***52.6***	***64.4***	***79.5***	***91.8***	***100.0***
Have a vendors' manual (percent)	13.8	***16.2***	***11.1***	***9.5***	***20.5***	***21.4***
Communicate with vendors online (percent)	54.6	**47.4**	**50.0**	**50.3**	**58.8**	**79.1**
Communicate with staff, other districts online (percent)	57.4	**44.7**	**52.2**	**50.9**	**67.1**	**86.0**
Average cancelled contracts per 100 pupils	0.1	**0.3**	**0.1**	**0.1**	**0.1**	**0.0**

Notes: [1]Bold and italics indicates that there is a statistically significant difference between the categories (10% level). "Very small" enrollment is below 10th percentile, "small" is enrollment from 10th to 30th percentile, "medium" is 30th to 70th percentile, and "large" is 70th to 90th percentile, and "very large" is above the 90th percentile. The enrollment measure is dcaadm.

Procurement Methods

The heart of the survey is question 18, which asks business officials to identify the procurement method used "most frequently" for 26 different goods and services. Table 3 presents the responses to this question organized into three categories—materials and supplies, equipment and furniture, and services. Several conclusions are clear from Table 3. First, most districts use a variety of methods to procure their

[20] The calculation of the number of cancelled contracts is based on a weighted average with the midpoints used for the categories "1-2" cancellations, and "3-4" cancellations, and 8 used for the category "more than 5" cancellations.

commodities, and these methods tend to differ across commodities. State OGS contracts are most frequently used for automotive commodities, computer software, fuel, office supplies, and most equipment and furniture categories.[21] Cooperative bidding is an important procurement method for dairy products and other food. Informal sourcing (price quotes, negotiation, sole sourcing) is important for library books, instructional material, building maintenance supplies, and grounds maintenance supplies. BOCES' cooperative service agreements (CoSers) are the primary procurement method for telecommunications, computer technical support, and training services.

Table 3
Procurement Method Used for Various Commodities and Services[1]

		Percent of Districts Responding To: "Indicate Which Procurement Method You Use Most Frequently for the Following Goods and Services"					
Commodity	Percent of Districts Procuring Good/Service[2]	State OGS Contracts[3]	BOCES (Coser)	City/County Contracts	Cooperatively Bid Contracts	Competitive Bidding/ RFP	Informal Sourcing[4]
Material and supplies:	87.0	**23.0**	18.3	2.3	16.9	18.5	21.0
Automotive commodities	73.8	**33.0**	4.8	6.3	5.1	14.3	**36.5**
Building maintenance supplies	90.2	11.9	23.6	2.1	20.8	**24.4**	17.1
Computer software	91.1	**32.4**	29.3	0.3	3.9	7.2	27.0
Dairy products	82.4	7.1	28.1	0.6	**33.0**	26.7	4.5
Food (not dairy products)	80.3	7.9	28.3	0.6	**31.5**	23.0	8.7
Fuel (gas, heating oil, etc.)	96.5	**40.3**	18.0	5.8	19.4	13.3	3.2
Grounds maintenance supplies	90.9	11.6	17.3	4.1	16.8	24.2	**26.0**
Instructional materials	89.0	26.3	10.3	0.5	14.5	21.6	**26.8**
Library books	82.7	28.6	7.4	0.0	3.7	10.2	**50.1**
Office supplies	93.0	**30.7**	16.1	2.5	20.4	20.2	10.1
Equipment and furniture:	90.9	**46.5**	18.1	1.1	5.0	19.7	9.7
Athletic equipment	93.4	10.3	15.8	0.5	15.8	**38.1**	19.5
Buses	82.9	**78.5**	1.1	0.3	2.3	15.5	2.3
Computer hardware	96.0	**47.8**	40.5	0.5	2.9	3.9	4.4
Furniture (classroom)	92.3	**57.1**	8.1	1.5	4.8	20.1	8.4
Furniture (office/computer)	92.3	**51.5**	9.1	3.6	4.8	19.5	11.4
Office equipment (e.g. copiers)	94.8	**56.3**	15.3	0.5	2.7	16.5	8.6
Telecommunications equipment	84.5	23.8	**36.6**	0.8	1.4	24.4	13.0
Services:	66.0	6.1	32.9	1.0	2.3	18.8	**38.8**
Building & security services	62.3	12.0	3.8	0.8	6.0	**39.8**	37.6
Computer technical support	76.1	5.5	**65.2**	0.3	1.2	5.5	22.2
Financial services	74.5	2.2	10.7	0.6	1.6	35.8	**49.1**
Human resource services	37.9	1.2	31.5	0.0	0.6	6.2	**60.5**
On-line library databases	77.0	7.6	**75.4**	0.3	1.2	1.8	13.7
Telecommunications services	84.3	17.5	**42.8**	0.8	1.9	16.7	20.3
Training services	61.1	1.9	**58.6**	0.0	0.0	3.1	36.4
Travel services	34.2	3.4	0.0	0.0	0.7	6.8	**89.0**
Waste removal	86.7	3.8	8.4	5.9	7.6	**53.8**	20.5

Notes: [1]Bold indicates the method used most frequently for each commodity or service. [2]Percentages may be underestimated due to blank responses or responses that had to be throw out because more than one method was selected as the "primary" method. [3]OGS contracts include the use of state preferred sources such as CORCRAFT and Industries for the Blind. [4]Informal Sourcing includes the use of price quotes, negotiation, or sole sourcing. Informal sourcing is typically used because the estimated price and volume of a procured good or service falls below or is not subject to bidding requirements under GML, or the good or service is unique and can only be purchased from one vendor.

[21] The OGS category included the use of state preferred sources such as CORCRAFT and Industries for the Blind.

To examine procurement methods in more depth, we looked at several methods individually to get a better understanding of the type of goods and services they are used for and why districts use them. The results of question 18 are combined with information from specific questions about the use of state OGS contracts, cooperative purchasing, and BOCES (for information technology services).

Competitive Bidding vs. Informal Sourcing

A basic procurement decision that a district faces is whether to use competitively bidding or to directly solicit quotes from or negotiate with select vendors (informal sourcing). Given the $10,000 threshold under GML for competitive bidding, we would expect smaller districts to use competitive bidding less frequently than large districts. Table 4 (next page) presents the use of competitive bidding versus informal sourcing by district size for goods or services where either of these methods represents the principal procurement method in at least 20 percent of districts. Competitive bids are an important procurement method for a number of categories of materials and supplies, and equipment and furniture. Only a few services are commonly procured this way—building security services, financial services, and waste removal. On average, districts competitively bid 3 out of the 26 commodity categories, and less than 10 percent use competitive bidding as the principal procurement method for 8 or more commodity categories. As expected the use of competitive bidding goes up with district size, and is 2 to 3 times more likely in large districts than small districts. High need urban districts are 60 to 100 percent more likely to use this method than other types of districts. Controlling for enrollment, use of competitive bidding does not appear related to district fiscal capacity or student need.

The use of informal sourcing is most common for some categories of materials and supplies (automotive commodities, computer software, ground maintenance supplies, instructional materials, and library books), and a number of services. On average, districts use informal sourcing 40 percent of time for services in our list. Informal solicitation for materials, supplies, equipment, and furniture declines sharply with the size of the district. Small districts are 2 to 4 times more likely to use informal sourcing for these commodities than large districts. Informal solicitation does not vary as much between SED need/resource capacity categories. More than half of the respondents use informal sourcing as the major procurement method for 4 or fewer commodities (out of 26), and 10 percent use it for 8 or more commodities.

Pattern of informal sourcing are similar to competitive bidding in that similar types of commodities are typically procured in the same way. Districts appear to treat competitive bidding and informal sourcing as direct substitutes, especially for services such as building and maintenance services, financial services, and waste removal. The total number of services competitively bid is negatively related to informal solicitation even controlling for enrollment. If the choice between these methods is directly related to the fixed dollar limit in GML, we might expect that districts indicating that the GML limit is too low (question 36) would be more apt to use competitive bidding and less apt to use informal sourcing. However, there is little difference in the use of either method between those saying the limit was too low, and those that did not.

Table 4
Use of Competitive Sourcing and Informal Sourcing by Commodity and Enrollment Size[1]
(As percent of districts procuring commodity or service)

	Competitive Bidding/RFP				Informal Sourcing[2]			
	All	Enrollment Size			All	Enrollment Size		
Commoditiy/Service	**Districts**	**Small**	**Medium**	**Large**	**Districts**	**Small**	**Medium**	**Large**
Overall average	21.1	12.3	20.5	30.4	29.3	35.9	29.7	22.7
Material and supplies:	19.2	7.9	19.1	30.1	23.1	31.3	22.2	16.5
Automotive commodities	14.5	***5.3***	***12.8***	***25.0***	36.7	***41.5***	***41.0***	***27.0***
Building maintenance supplies	24.6	***8.9***	***23.6***	***40.2***	17.3	***30.4***	***14.2***	***9.0***
Computer software	7.3	4.3	7.2	10.1	27.2	***36.5***	***23.7***	***22.7***
Dairy products	27.0	***11.3***	***28.1***	***41.1***	4.6	3.8	3.7	6.5
Food (not dairy products)	23.0	***4.9***	***23.8***	***39.6***	8.8	11.7	8.5	6.6
Grounds maintenance supplies	24.2	***7.2***	***25.8***	***37.8***	26.0	***41.4***	***23.2***	***15.1***
Instructional materials	21.7	***8.9***	***21.6***	***34.5***	27.0	***38.4***	***22.9***	***21.2***
Library books	10.3	8.3	10.9	11.4	50.3	***56.5***	***54.0***	***39.0***
Office supplies	20.1	***12.3***	***17.6***	***30.8***	10.2	***21.9***	***8.2***	***1.7***
Equipment and furniture:	27.4	20.0	27.3	34.5	13.8	24.4	13.0	4.6
Athletic equipment	38.0	***18.3***	***39.0***	***55.4***	19.7	***33.9***	***20.1***	***5.8***
Furniture (classroom)	19.7	20.7	18.8	20.0	8.5	***19.0***	***5.8***	***1.7***
Telecommunications equipment	24.4	21.2	24.0	28.2	13.1	***20.2***	***13.0***	***6.4***
Services:	21.0	14.3	19.6	29.2	42.1	45.4	44.4	36.4
Building & security services	39.9	***27.0***	***37.5***	***54.1***	37.6	***47.3***	***38.5***	***28.2***
Computer technical support	5.6	***2.0***	***5.3***	***10.2***	22.4	17.6	24.2	25.0
Financial services	36.1	***24.0***	***38.3***	***46.0***	49.4	56.3	49.6	41.4
Human resource services	6.2	5.3	3.4	11.1	60.9	61.4	62.7	57.8
Telecommunications services	16.4	12.1	15.2	22.4	20.3	26.2	20.0	15.0
Training services	3.1	1.1	2.8	6.3	36.4	29.9	40.2	39.1
Travel services	6.9	***6.1***	***0.0***	***15.2***	89.0	***91.8***	***98.0***	***76.1***
Waste removal	53.7	***36.9***	***54.1***	***68.1***	20.7	***33.0***	***21.6***	***8.6***

Notes: [1]Bold and italics indicates that there is a statistically significant difference between the categories (10% level). "Small" enrollment is below 30th percentile, "medium" is 30th to 70th percentile, and "large" is above 70th percentile. The enrollment measure is dcaadm. [2]Informal Sourcing includes the use of price quotes, negotiation, or sole sourcing. Informal sourcing is typically used because the estimated price and volume of a procured good or service falls below or is not subject to bidding requirements under GML, or the good or service is unique and can only be purchased from one vendor.

State OGS Contracts

A procurement option open to all school districts in New York is to purchase commodities off of contracts issued by the New York State Office of General Services (OGS).[22] As "political subdivisions," school districts are permitted under State Finance Law and General Municipal Law to take advantage of the state's purchasing power through the use of OGS term contracts. Districts can search available contracts online through OGS' website and contact the vendor directly with the state contract number to place an order. The state is not involved in the transaction at any point beyond establishing the initial contract (NYS OGS, 2002).

For over half of the categories of materials, supplies, and equipment listed in Table 3, OGS contracts are the leading procurement method. Districts using OGS contracts for computer hardware also tend to use them for software. We see a similar pattern for classroom furniture and office furniture, and instructional materials, library books, and office supplies. We might expect that OGS contracts would be an attractive

[22] Districts can also buy off of city and county contracts. Since there is very little use of these contracts, we have chosen to focus on OGS contracts.

method for small school districts, since they provide a relatively easy way to "piggyback" on larger, better priced contracts. In practice however, OGS contracts are less apt to be used in very small districts than other types of districts (Table 5). For computer software, library books, office supplies, furniture, office and telecommunication equipment, very large districts are 2 to 5 times more likely to use OGS contracts than very small districts.

Table 5
Use of OGS Contracts by Commodity and Enrollment Size[1]
(As percent of districts procuring commodity)

		Enrollment Size				
Commoditiy/Service	**All Districts**	**Very Small**	**Small**	**Medium**	**Large**	**Very Large**
Overall average	42.1	26.8	42.2	45.0	41.3	44.3
Material and supplies:	31.7	17.6	31.4	34.6	29.7	36.8
Automotive commodities	32.8	24.0	40.6	34.2	31.3	22.2
Computer software	32.1	***16.1***	***28.6***	***32.2***	***35.0***	***46.2***
Fuel (gas, heating oil, etc.)	40.0	27.8	43.2	42.3	35.0	43.9
Instructional materials	26.2	18.2	27.8	30.7	21.3	21.1
Library books	28.6	***9.7***	***19.5***	***29.9***	***29.4***	***56.8***
Office supplies	30.8	***10.0***	***28.6***	***38.4***	***25.9***	***30.8***
Equipment and furniture:	52.4	35.9	52.9	55.3	52.9	51.8
Buses	78.6	80.0	86.9	78.1	73.1	68.8
Computer hardware	47.8	39.4	48.8	46.3	48.8	56.1
Furniture (classroom)	57.2	***29.0***	***55.3***	***66.9***	***54.3***	***51.3***
Furniture (office/computer)	51.3	***25.8***	***47.0***	***62.2***	***51.9***	***35.9***
Office equipment (e.g. copiers)	56.1	***34.3***	***61.0***	***55.9***	***59.8***	***58.5***
Telecommunications equipment	23.6	***6.9***	***18.7***	***22.6***	***29.3***	***40.0***

Notes:[1]Bold and italics indicates that there is a statistically significant difference between the categories (10% level). "Very small" enrollment is below 10th percentile, "small" is enrollment from 10th to 30th percentile, "medium" is 30th to 70th percentile, and "large" is 70th to 90th percentile, and "very large" is above the 90th percentile. The enrollment measure is dcaadm. OGS contracts include the use of state preferred sources such as CORCRAFT and Industries for the Blind.

One explanation for this result is that very small districts do not need to use OGS contracts for many commodities (as an alternative to competitive bidding), because their purchases do not exceed the limit in GML. For computer software and library books, the use of OGS contracts has a significant negative relationship with the use of informal sourcing. For example, 55 percent of very small districts informally source library books (and only 10 percent use OGS contracts), while the shares are 30 percent and 57 percent respectively for very large districts. OGS contracts are inversely related to the use of informal sourcing for buses, furniture, instructional materials, and office equipment.

If districts with low fiscal capacity and high student needs are more apt to be in fiscal stress, we might expect these districts to be more sensitive to unit prices. If OGS contracts have lower prices, then we might see heavier use among low CWR and high subsidized lunch districts. The inverse would be the case if OGS contracts were principally used to save time. No clear relationships emerge between the use of OGS contracts, and CWR and subsidized lunch rates. On average, districts with low CWR and subsidized lunch rates tend to have similar OGS use as districts with high values. Only for buses do we see the expected pattern where OGS use goes down with CWR and up with subsidized lunch rates.

As part of the survey, we also asked about factors influencing the use, or limiting the use, of OGS contracts. As indicated on Table 6, a large majority of districts indicated that their use of OGS contracts was influenced by time and administrative cost savings (86 percent), or OGS contracts provided lower prices/better value (72 percent). A significant number of business officials indicated that their use of OGS contracts was also influenced by better quality commodities (48 percent). The total number of OGS services used by a district is positively but weakly related to these reasons for using OGS contracts.[23] Very small districts were significantly less likely to cite any of these reasons for using OGS contracts.

Table 6
Reasons for Using or Not Using OGS Contracts[1]
(Percent of districts indicating being moderately or greatly influenced by the following reasons)

		Enrollment Size				
	All Districts	**Very Small**	**Small**	**Medium**	**Large**	**Very Large**
Interested in OGS training	82.9	***80.0***	***72.1***	***85.5***	***88.1***	***86.0***
Percent never use BAFO and mini-bid processes	80.7	***70.6***	***89.7***	***83.8***	***80.7***	***58.1***
Reasons for using OGS contracts:						
Provide lower prices/better value.	72.1	***57.9***	***66.7***	***73.1***	***80.0***	***76.7***
Save time and administrative costs of bidding.	85.5	***71.1***	***78.9***	***89.5***	***89.4***	***88.4***
Provide better quality of goods/services.	48.0	34.2	45.6	52.0	47.1	51.2
Reasons for not using OGS contracts:						
Do not provide lower prices/better value.	23.4	***23.7***	***21.1***	***21.1***	***25.9***	***32.6***
Do not provide product/service specifications I need.	33.0	***21.1***	***27.8***	***32.7***	***37.6***	***46.5***
Are too expensive to deliver to my area.	13.3	***23.7***	***18.9***	***12.9***	***5.9***	***9.3***
Are too complicated/difficult to understand.	25.5	***44.7***	***22.2***	***31.6***	***14.1***	***14.0***
Don't know that certain goods/services are available through OGS contract	38.4	***50.0***	***37.8***	***43.9***	***30.6***	***23.3***

Notes: [1]Bold and italics indicates that there is a statistically significant difference between the categories (10% level). "Very small" enrollment is below 10th percentile, "small" is enrollment from 10th to 30th percentile, "medium" is 30th to 70th percentile, and "large" is 70th to 90th percentile, and "very large" is above the 90th percentile. The enrollment measure is dcaadm. OGS contracts include the use of state preferred sources such as CORCRAFT and Industries for the Blind.

Given that the potential price benefits and time savings from OGS contracts would be no different for very small districts compared to moderate to large districts, it appears that some very small districts may be not have good information on the benefits of OGS contracts. Their responses to question 20 on factors limiting OGS use confirm that a large share of very small districts feel OGS contracts are complex, and they lack of information on which commodities are available on OGS contracts. A much smaller share of large districts cited these limiting factors. By contrast, large districts were more apt to cite price or product specification as reasons they do not use OGS contracts for some items.

[23] Surprisingly, the reasons given for using OGS contracts (or not using them) is not significantly related to the use of OGS contracts for individual commodities.

A good example of the lack of information about how to use OGS contracts is the response rate to how often districts use "best and final offer" (BAFO) or mini-bid processes. These processes involve soliciting best and final offers from a New York State pre-qualified group of contractors or among a range of qualified brand products to determine the best value solution for a product or service. These types of contracts are almost exclusive to information technology hardware, software, and peripherals. Under the mini-bid process, a district determines what kind of technology system it needs, then approaches vendors on the state's "backdrop" contract for bids to supply the system.[24] The vendors give their best and final offer in response to the district's product or service definition, and the district chooses the offer that best fits their needs and budget. In essence, BAFOs and mini-bids are abbreviated RFP processes where the state has pre-qualified a group of vendors to provide specific goods or services or it has issued a multiple award contract (more than one vendor for the same contract) (NYS OGS, 2002).

The vast majority of districts do not use the BAFO or mini-bid process, irregardless of size. A similar number of districts indicate that they would like to attend training sessions about how to use OGS contracts. Unfortunately, small districts were less likely to indicate an interest in training than large districts. To convince small districts of the benefits of using OGS contracts may require significant outreach to these districts, and greater attention to ease of use of these processes. Presently, training on OGS contracts for local governments is provided by OGS and the Office of the State Comptroller. OGS hosts a state purchasing forum once per year, but procurement personnel from state agencies are given preference to attend due to lack of space. OGS does training seminars at the request of professional organizations (e.g. NYSASBO), but it does not organize training specifically for school districts due to lack of resources.

Cooperative Purchasing

A large share (82 percent) of business officials indicated that their district is a member of a cooperative purchasing group (question 23). The share of districts in cooperatives is significantly higher in medium to large districts (Tables 7). Many districts (73 percent) indicating that they are in a cooperative, listed their BOCES as the name of the cooperative. It is possible that a share of those districts in a cooperative are including cooperative service agreements (CoSers) with their BOCES. Providing some support for this argument is the finding that only 57 percent of districts selected cooperative purchasing as the principal procurement method for at least one of the 26 commodities listed in question 18.[25]

The use of cooperatives for procurement is substantial for most districts only for food, fuel, supplies, and athletic equipment. Of the districts using cooperative purchasing for some services, over one-third uses cooperatives for 3 out of the 7 commodities listed on Table 7. Districts using cooperatives for dairy products

[24] "Back-drop contracts are a pool of qualified vendors who are contracted with the State of New York and eligible to participate in the secondary mini-bid award process." (OGS, 2004)

[25] Of the districts indicating that they were in a cooperative, 36 percent did not use cooperatives as their principal procurement method for any of the commodities listed in question 18. Interestingly, of the districts indicating they were not in a cooperative, 30 percent indicated that they used cooperatives as the principal method for at least one item. Given these discrepancies, the responses to question 23 and 24 should be interpreted cautiously.

are very likely to use cooperatives for other food, and the same is true for building and maintenance supplies and ground maintenance supplies. Cooperative purchasing provides potential price benefits for medium to small districts, but there may be a significant start-up cost to organizing the cooperative. Thus, we might expect that the heaviest use of these contracts among small but not "very small" districts. This pattern seems to hold for food and fuel, but for no commodities are the usage differences by size statistically significant. Very small districts use cooperatives consistently less than small districts. If cooperative purchasing requires significant staff time, we might expect that it would be used more frequently in districts in less fiscal stress (higher fiscal capacity and lower student needs). Districts with low student poverty are more apt to use coops for athletic equipment, building and grounds maintenance supplies, and office supplies.

Table 7
Use of Cooperative Purchasing by Commodity and Enrollment Size[1]
(As percent of districts procuring commodity)

		Enrollment Size				
Commoditiy/Service	**All Districts**	**Very Small**	**Small**	**Medium**	**Large**	**Very Large**
Member of coop	81.9	***68.4***	***77.8***	***82.5***	***89.3***	***86.0***
Average	22.6	19.9	25.5	20.8	22.0	26.6
Athletic equipment	15.9	12.9	14.3	13.8	17.5	26.8
Building maintenance supplies	20.9	13.8	18.1	21.6	22.0	27.5
Dairy products	32.8	31.3	41.9	29.6	29.0	34.2
Food (not dairy products)	31.6	31.0	41.9	26.9	27.5	35.1
Fuel (gas, heating oil, etc.)	19.6	16.7	22.7	19.0	18.8	19.5
Grounds maintenance supplies	16.9	16.7	16.0	16.8	17.9	17.1
Office supplies	20.4	16.7	23.8	17.6	21.0	25.6

Notes: [1]Bold and italics indicates that there is a statistically significant difference between the categories (10% level). "Very small" enrollment is below 10th percentile, "small" is enrollment from 10th to 30th percentile, "medium" is 30th to 70th percentile, and "large" is 70th to 90th percentile, and "very large" is above the 90th percentile. The enrollment measure is dcaadm.

Districts were asked in questions 23 and 24 to indicate their level of satisfaction with their cooperative, and the factors influencing their use or limiting their use of the cooperative (Table 8). Approximately half of the districts rated their cooperative in the top two levels of satisfaction (out of five), with satisfaction going up significantly with enrollment (61 percent of very large districts are satisfied compared to 45 percent for very small districts). A high level of satisfaction is positively but only moderately related to the number of commodities cooperatively purchased. Seventy percent of respondents indicated that price/value and time savings influenced their use of a cooperative to a moderate or great extent. A majority of respondents also indicated that cooperatives offered better quality goods or services and greater access to vendors. Very small districts are less apt to indicate that these are influential factors than other districts. Between 15 and 23 percent of districts indicated that price, time and administrative costs, and difficulty organizing cooperatives limited their use of cooperatives. Even though very small districts are less apt to use cooperatives than large districts, they were also less likely to cite these reasons as limiting their use.

Table 8
Reasons for Using or Not Using Cooperative Purchasing By Enrollment Size[1]
(Percent of districts indicating being moderately or greatly influenced by the following reasons)

		Enrollment Size				
	All Districts	**Very Small**	**Small**	**Medium**	**Large**	**Very Large**
Satisfaction with cooperative purchasing group (Percent indicating two highest levels)	52.9	44.7	55.6	50.9	54.1	60.5
Reasons for using cooperative purchasing:						
Provide lower prices/better value.	69.3	57.9	71.1	67.8	72.9	74.4
Save time and administrative costs of bidding.	70.7	63.2	71.1	70.8	70.6	76.7
Provide better quality of goods/services.	50.4	44.7	47.8	52.0	52.9	48.8
Provides access to more vendors	55.0	44.7	56.7	54.4	58.8	55.8
Reasons for not using cooperative purchasing:						
Do not provide lower prices/better value.	17.1	***18.4***	***13.3***	***14.0***	***17.6***	***34.9***
Does not save time and administrative cost of bidding	15.7	***18.4***	***13.3***	***12.3***	***16.5***	***30.2***
Is difficult to organize due to disagreements about specifications	22.7	18.4	26.7	18.7	25.9	27.9
There are no purchasing cooperatives in my area	8.0	15.8	8.9	7.6	5.9	4.7

Notes: [1]Bold and italics indicates that there is a statistically significant difference between the categories (10% level). "Very small" enrollment is below 10th percentile, "small" is enrollment from 10th to 30th percentile, "medium" is 30th to 70th percentile, and "large" is 70th to 90th percentile, and "very large" is above the 90th percentile. The enrollment measure is dcaadm.

BOCES Cooperative Service Agreements (CoSer)

Another procurement option for school districts is the use of a cooperative service agreement (CoSer) with a BOCES. There are 38 BOCES across the state that offer a range of services—from special education to records management services—to encourage districts to share resources and realize economies of scale. BOCES have the potential to provide lower prices for services than a district could acquire on its own.[26] The state encourages the use of BOCES by providing state aid reimbursement for some services. CoSers are formal contracts that specify the number and types of services to be provided by BOCES, the number of people to be served, and the fee to be paid to the BOCES for the services. All CoSers must be approved by the Commissioner of Education (NYS SED, 2004).

School districts identified 11 goods or services (out of 26) where BOCES were the principal procurement method (Table 9). Three of the four material and supply categories where BOCES are used, cooperative purchasing is also an important method (building and maintenance supplies, dairy, and other food products). In contrast to cooperative purchasing, BOCES are used more frequently by small districts than large districts for these commodities. The major services where BOCES is the provider include computer technical support, human resource services, on-line library databases, and training services. Small districts are much more likely to use BOCES for these services than are large districts. The principal alternative to the use of BOCES for these services is informal sourcing. The success of BOCES in becoming an alternative to informal sourcing for small districts is an important area for further study. How do BOCES market their

[26] BOCES may provide services themselves or bid the services to outside vendors.

services to small districts, and how do BOCES services help to compensate for the lack of procurement staff in these districts? Is BOCES use in districts related directly to services that are eligible for state aid?

Table 9
Use of BOCES (CoSer) by Commodity and Enrollment Size and CWR[1]
(As percent of districts procuring commodity or service)

		Enrollment Size			CWR		
Commoditiy/Service	**All Districts**	**Low**	**Medium**	**High**	**Low**	**Medium**	**High**
Overall average	41.7	46.4	44.2	33.2	47.0	39.5	38.5
Material and supplies:	27.1	30.4	32.2	17.7	32.9	27.5	19.2
Building maintenance supplies	23.3	***28.6***	***28.4***	***12.3***	***29.7***	***22.5***	***17.7***
Computer software	29.3	***28.7***	***34.9***	***22.7***	***36.1***	***24.2***	***28.8***
Dairy products	27.9	***31.1***	***32.6***	***18.7***	***33.3***	***31.3***	***14.9***
Food (not dairy products)	28.0	***33.0***	***33.1***	***17.0***	***32.4***	***31.9***	***15.5***
Equipment and furniture:	38.5	41.2	40.6	33.3	44.5	34.2	38.1
Computer hardware	40.4	42.0	42.1	36.6	45.2	35.0	42.6
Telecommunications equipment	36.7	40.4	39.0	30.0	43.8	33.3	33.7
Services:	54.6	61.3	55.3	45.6	59.4	51.1	54.1
Computer technical support	64.9	***75.5***	***64.4***	***53.4***	69.9	61.2	64.4
Human resource services	31.1	33.3	30.5	28.9	35.3	27.0	31.9
On-line library databases	75.5	***81.1***	***79.7***	***62.5***	79.2	72.9	75.0
Telecommunications services	42.9	***48.6***	***44.8***	***34.6***	47.3	41.4	40.2
Training services	58.5	***67.8***	***57.0***	***48.4***	65.1	53.3	58.8

Notes: [1]Bold and italics indicates that there is a statistically significant difference between the categories (10% level). "Low" indicates below 30th percentile, "moderate" is between 30th to 70th percentile, and "high" is above the 70th percentile.

One reason for higher use of BOCES services, particularly among districts with low fiscal capacity, is the potential to receive state aid to cover a portion of the cost. BOCES aid is typically available for instructional, instructional support, and non-instructional administrative services, and is based on a formula that accounts for the district's financial resources. Exceptions include special education services, transportation, adult education services, health related services to non-public school students, pre-kindergarten, and municipal services which are covered under other funding categories for state aid (NYS SED, 2004). As expected, BOCES are used more frequently among districts with low CWR, particularly for materials and supplies. Use of BOCES for most services is not significantly higher in low CWR districts.

To examine further the use of BOCES for information technology (IT) services, we asked school business officials to identify which IT services they through BOCES, the reasons they use BOCES, and their level of satisfaction with BOCES services(question 35). Over 80 percent of districts indicate that they use BOCES for IT services (Table 10). The majority use BOCES for all of the services listed in question 35, except for IT strategic planning. Over 60 percent of districts use BOCES for hardware support, software licenses and support, internet services and networking, and administrative computer services for student data. Use of BOCES IT services does not appear to be related to enrollment size, except for "computer and network

security," and "IT strategic planning," which are used more frequently by small districts. By contrast, low CWR districts are much more likely to use BOCES IT services than high CWR districts.[27]

Table 10
Use of BOCES (CoSer) for IT Services by Enrollment Size and CWR[1]
(Percent of districts responding to survey)

		Enrollment Size			CWR		
Commoditiy/Service	**All Districts**	**Low**	**Medium**	**High**	**Low**	**Medium**	**High**
Use BOCES (Coser) for IT Services	82.8	80.5	83.5	84.3	***89.8***	***86.5***	***70.9***
Hardware support	64.2	67.2	66.1	58.6	***78.1***	***65.5***	***48.4***
Software licenses and support	63.5	***64.1***	***68.4***	***56.3***	***78.1***	***64.3***	***47.7***
Software technical training	55.7	56.3	56.1	54.7	***71.1***	***55.0***	***41.4***
Internet service and networking	68.4	68.8	71.3	64.1	***78.1***	***73.1***	***52.3***
Administrative computer services—student data	63.0	64.1	63.7	60.9	***73.4***	***66.7***	***47.7***
Administrative computer services—financial services	54.8	53.1	55.0	56.3	***71.1***	***54.4***	***39.1***
Computer and network security	51.8	***61.7***	***53.2***	***39.8***	***64.1***	***53.2***	***37.5***
IT strategic planning	32.8	***43.0***	***28.7***	***28.1***	***42.2***	***31.6***	***25.0***
Satisfaction with BOCES (Percent indicating two highest levels)	46.4	47.7	47.4	43.8	***57.8***	***48.0***	***32.8***
Reasons to use BOCES:							
Provide lower prices/better value.	48.9	53.1	46.8	47.7	***59.4***	***48.0***	***39.8***
Save time and administrative costs of bidding/issuing RFP	60.7	64.1	62.6	54.7	***70.3***	***62.0***	***49.2***
Are eligible for state aid	76.1	75.0	77.8	75.0	***86.7***	***77.8***	***63.3***
Provides access to more grants/federal funding for IT infrastructures and services	41.5	46.9	38.0	40.6	***50.8***	***43.9***	***28.9***

Notes: [1]Bold and italics indicates that there is a statistically significant difference between the categories (10% level). "Low" indicates below 30th percentile, "moderate" is between 30th to 70th percentile, and "high" is above the 70th percentile.

Almost half the districts indicate a high degree of satisfaction with the IT services they receive through their BOCES. Satisfaction seems to be significantly higher in low CWR districts suggesting that district satisfaction with these services is inversely related to share of their cost financed by the district. The most commonly cited reason for using BOCES IT services is the availability of state aid (75 percent). Savings in time and administrative costs is also cited by a majority of respondents (60 percent). Not surprisingly, the importance of state aid is inversely related to the fiscal capacity of the school district. Close to 90 percent of low CWR districts selected state aid as a reason for using BOCES compared to 63 percent in high CWR districts. While BOCES is the principal provider of many IT services, districts that do not receive significant state aid are much less likely to be satisfied with the IT services they receive.

[27] There is some inconsistency in the pattern with regard to CWR for districts using IT services. For districts indicating that BOCES was the principal procurement for "computer technical support" in question 18, there was no relationship with CWR. But there is a strong negative relationship between CWR and use of BOCES IT services in question 35. It is not clear why there should be a difference given that these questions should be addressing similar services.

Use of Procurement Cards for Small Purchases

The key tradeoff for small purchases is to allow some flexibility in use for unplanned expenses, while still maintaining adequate control and keeping unit prices low. One approach discussed in the public procurement literature is the use of procurement cards. As discussed previously, these are cards issued to authorized school personnel to make purchases at local vendors or online. Advocates of procurement cards argue that the cards can provide flexibility and good prices with adequate internal controls. Critics contend that extensive use of procurement cards can discourage pooling purchases into competitively bid contracts that would provide better prices and control. In New York, procurement cards are used by only a fifth of school districts (Table 11). Procurement card use increases with enrollment (although the results are not statistically significant). Use of procurement cards is not related to district fiscal capacity or student needs. If use of procurement cards discourages competitive bidding, we might expect a negative relationship between their use and the total number of commodities competitively bid (controlling for enrollment size), but this was not the result. Procurement card use also was not related to other procurement practices, such as electronic requisitions, purchasing calendars, or the use of a warehouse.

Table 11
Use of Procurement Cards by Enrollment Size[1]
(Percent of districts responding to survey)

		Enrollment Size				
	All Districts	**Very Small**	**Small**	**Medium**	**Large**	**Very Large**
Use procurement cards	18.8	13.2	12.2	19.4	21.4	30.2
Authorized users of procurement cards:						
Superintendent	15.2	13.2	11.1	15.8	16.5	20.9
Associate/Assistant Superintendent	6.8	***2.6***	***0.0***	***5.3***	***11.8***	***20.9***
School business official	12.2	5.3	7.8	14.0	12.9	18.6
Principals	7.5	5.3	5.6	7.6	5.9	16.3
Other Administrators	5.4	***0.0***	***2.2***	***4.7***	***8.2***	***14.0***
Limitations on use of procurement cards:						
Only for use with specific vendors	12.6	10.5	8.9	12.9	15.3	16.3
Only for use for travel expenses	8.2	2.6	7.8	8.2	9.4	11.6
Only for use with a receipt from a store/vendor	9.8	5.3	7.8	8.8	11.8	18.6
Only for use when school is in session	0.7	0.0	1.1	0.6	0.0	2.3
Reports from procurement card company:						
Receive itemized report each month	10.8	***2.6***	***7.8***	***9.9***	***12.9***	***23.3***
Business service staff monthly review of reports	18.3	***13.2***	***11.1***	***19.3***	***20.0***	***30.2***
Reasons for not using procurement cards:						
My district has never considered using them.	50.1	***52.6***	***65.6***	***49.1***	***45.9***	***27.9***
It is too difficult to administer and control the use of procurement cards.	30.2	***15.8***	***24.4***	***33.9***	***30.6***	***39.5***
My district does not buy enough low price items on a regular basis to need procurement cards.	10.8	***31.6***	***14.4***	***11.1***	***1.2***	***2.3***
Procurement card use could reduce the use of competitive bids, and raise unit costs.	13.3	7.9	8.9	13.5	15.3	23.3

Notes: [1]Bold and italics indicates that there is a statistically significant difference between the categories (10% level). "Very small" enrollment is below 10th percentile, "small" is enrollment from 10th to 30th percentile, "medium" is 30th to 70th percentile, and "large" is 70th to 90th percentile, and "very large" is above the 90th percentile. The enrollment measure is dcaadm.

Among the districts using procurement cards, the superintendent is most frequently the authorized user, followed by the school business official. In large districts the associate superintendent and principals were commonly authorized to use procurement cards. The most common restrictions placed on procurement cards are use with certain vendors and only with an authorized receipt from the vendor. In some districts, procurement cards are limited to travel expenses.[28] We also asked about the expenditure reports districts receive and how they are used. Approximately 60 percent of authorized users within a district get detailed itemized reports from the procurement card company, and almost all districts with cards have business staff review the itemized reports.

Given that most districts do not use procurement cards, it is important to understand why. For small districts the most commonly cited reasons are having never considered using the cards and that the district does not buy enough low price items on a regular basis to need them. Half of medium size districts have never considered using procurement cards, and one-third expressed concerns about difficulty administering and controlling them. For large districts, concerns were also expressed about the use of these cards leading to a reduction in competitive bidding, subsequently raising unit costs. The potential benefits and problems with procurement cards is a topic that organizations, such as SED, NYASBO, and the Office of the State Comptroller (OSC), may want to explore in the future.

Use of a Central Warehouse

Use of a central warehouse allows school districts to buy certain commodities in bulk, potentially resulting in lower unit prices. The potential price benefits of warehouses need to be compared to the administrative costs, facility costs, and holding costs from the lost interest revenue on inventory. In the survey we asked whether the district uses a warehouse, for which items, and their reason for adopting this practice (Table 12). Only a quarter of districts use a central warehouse or storehouse. As expected, larger districts are much more likely to use a warehouse than small districts. Interestingly, warehouse use is higher in the very small districts than in small districts. Warehouse use is higher in high need urban districts than high need rural districts or low need districts.

[28] New York State requires that public entities establish two types of cards: 1) a purchasing card for low dollar, high volume purchases of commodities and services; and 2) a travel card for transportation and lodging expenses.

Table 12
Use of a Warehouse by Enrollment Size[1]
(Percent of districts responding to survey)

	All Districts	Enrollment Size: Very Small	Small	Medium	Large	Very Large
Percent of districts with warehouse	25.1	***18.4***	***14.4***	***22.8***	***32.9***	***46.5***
What kinds of comodities are stored in warehouse?						
Athletic equipment	5.9	7.9	3.3	5.3	5.9	11.6
Building and grounds maintenance supplies	18.0	***18.4***	***7.8***	***15.8***	***25.9***	***32.6***
Custodial supplies	21.5	***15.8***	***8.9***	***19.9***	***30.6***	***41.9***
Food and dairy products	0.0	0.0	0.0	0.0	0.0	0.0
Food service supplies & equipment	6.6	***7.9***	***2.2***	***5.3***	***12.9***	***7.0***
Instructional materials	9.6	***5.3***	***5.6***	***8.8***	***10.6***	***23.3***
Office supplies, equipment & furniture	16.2	13.2	13.3	14.0	18.8	27.9
Why is a warehouse used?						
Commodities are purchased in bulk to get a better price.	22.0	***18.4***	***14.4***	***18.7***	***27.1***	***44.2***
Schools in my district do not have the facilities to accept delivery of some commodities.	8.9	***0.0***	***1.1***	***6.4***	***16.5***	***27.9***
Schools in my district do not have the personnel to accept delivery of some commodities.	6.1	***0.0***	***0.0***	***5.3***	***12.9***	***14.0***
Schools in my district have limited space to store supplies they need throughout the year.	16.6	***7.9***	***5.6***	***14.0***	***24.7***	***41.9***

Notes: [1]Bold and italics indicates that there is a statistically significant difference between the categories (10% level). "Very small" enrollment is below 10th percentile, "small" is enrollment from 10th to 30th percentile, "medium" is 30th to 70th percentile, and "large" is 70th to 90th percentile, and "very large" is above the 90th percentile. The enrollment measure is dcaadm.

The most common commodities stored in warehouses are building and ground maintenance supplies, custodial supplies, and office supplies, equipment and furniture. Small districts also store athletic equipment and food service supplies, while large districts are more likely to store instructional material. The most frequent reasons for using a warehouse is the price benefit of bulk purchases and space limitations in schools for storing supplies.

E-Procurement

The use of the internet and integrated databases for managing procurement is often touted as a way to reduce costs by expanding access to vendors and reducing paperwork. To examine e-procurement in New York school districts, we asked questions about the use of the internet for a variety of procurement functions.

Almost all districts provide their procurement staff with access to the internet at their workstations (97 percent). Procurement staff in most districts use the internet to research price estimates (82 percent), and research contracts established by OGS or other localities (Table 13). Larger districts are more apt to use the internet for OGS related research, but much less likely to use the internet to make small purchases (37 percent) than very small districts (75 percent). A higher share of districts with procurement cards uses the internet for small purchases than districts without procurement cards. However, the majority of districts making small purchases on the web do not have procurement cards. A number of districts also use email to communicate with vendors and others on procurement topics. A much smaller share of districts actually

accept bids online (21 percent). It is possible that state laws prevent districts from taking advantage of some e-procurement practices. Accepting sealed bids, for example, requires a vendor's signature on the bid document. Although New York State law permits e-signatures, it requires that they be digitally crafted using a complex technology that even state agencies have yet to determine the appropriate specifications for general use. In addition, bidding requirements prevent large districts from making small purchases online, since most will buy in large enough quantities to exceed the $10,000 or $20,000 threshold that triggers bidding laws.

Table 13
Use of E-Procurement Functions by Enrollment Size[1]
(Percent of districts responding to survey)

		Enrollment Size				
	All Districts	**Very Small**	**Small**	**Medium**	**Large**	**Very Large**
Procurment staff has access to internet	97.4	97.3	96.7	97.6	97.6	97.7
Tasks procurment staff perform online:						
Research for price estimates	81.5	85.3	75.9	78.9	88.9	83.7
Make small purchases that do not require competitive bidding	58.4	***73.5***	***62.0***	***57.9***	***60.5***	***37.2***
Research contracts established by the OGS or other locality	74.6	***55.9***	***64.6***	***74.3***	***84.0***	***90.7***
Communicate with vendors via e-mail	59.9	***52.9***	***57.0***	***56.6***	***61.7***	***79.1***
Accept bids and proposals from vendors	21.3	***23.5***	***21.5***	***22.4***	***21.0***	***16.3***
Communicate with staff in the district, etc.	63.0	***50.0***	***59.5***	***57.2***	***70.4***	***86.0***
Requisitions:						
Electronic requisition with electronic signature	14.8	***0.0***	***5.6***	***13.5***	***23.5***	***34.9***
Electronic requisition with paper signature	9.1	***2.6***	***2.2***	***7.6***	***16.5***	***20.9***
Uses district website for procurement:	3.3	***0.0***	***0.0***	***1.8***	***7.1***	***11.6***
General information about your district's procurement policies	1.9	***0.0***	***0.0***	***1.8***	***3.5***	***4.7***
Contact information for questions about your district's procurement policies	1.9	***0.0***	***0.0***	***0.6***	***4.7***	***7.0***
On-line registration for bidders lists	0.7	***0.0***	***0.0***	***0.0***	***1.2***	***4.7***
Solicitation notices	1.4	***0.0***	***0.0***	***0.6***	***3.5***	***4.7***
Bid and proposal documents available for download	1.4	***0.0***	***0.0***	***0.6***	***3.5***	***4.7***
Awards notifications	1.6	***0.0***	***0.0***	***1.2***	***2.4***	***7.0***
Information about invoicing and payment for vendors	0.2	***0.0***	***0.0***	***0.0***	***1.2***	***0.0***
Electronic payment for vendors (e.g. electronic funds transfer)	0.0	0.0	0.0	0.0	0.0	0.0
Does your district use BOCES to post solicitations on the internet?	19.1	31.6	13.3	17.1	23.8	18.6
Level of satisfaction in service (percent in highest two categories)	92.3	92.1	91.1	93.0	90.6	95.3

Notes: [1]Bold and italics indicates that there is a statistically significant difference between the categories (10% level). "Very small" enrollment is below 10th percentile, "small" is enrollment from 10th to 30th percentile, "medium" is 30th to 70th percentile, and "large" is 70th to 90th percentile, and "very large" is above the 90th percentile. The enrollment measure is dcaadm.

Another application of e-procurement is in the requisition process. Traditionally, requisitions have been filled out by school staff, signed by the principal or their designees, and then forwarded to the procurement office for processing. A faster method for processing these requests uses a computerized ordering system with an electronic signature or a separate paper signature. New York City has used an

electronic requisition system called Fastrack to reduce the processing time for requisitions from several weeks to 24 hours (Benevento, 1995). A quarter of New York school districts use some type of electronic requisition system. This share rises from 2.6 percent in the smallest districts to over 55 percent in very large districts. In the future, it may be valuable to document the experiences of districts using electronic requisitions, and whether the reductions in administrative costs and procurement cycle time have occurred.

An even more ambitious application of e-procurement is for districts to set up procurement websites for communication and interaction with potential vendors. Besides sharing information on district procurement policies, purchasing calendars, and bid solicitations, a procurement website could be used for online registration of vendors, online bidding, and electronic payment of vendors. Only a small share of districts post procurement information on their website (3.3 percent), and its use is very closely linked to district size. No small districts have procurement websites; 1.8 percent of medium size districts have them; but almost 12 percent of very large districts post procurement information on a district website. For those few districts using procurement websites, they tend to use them for a variety of functions except payment of vendors. Unless a district has an electronic funds transfer system or uses procurement cards, it is not expected that districts would pay vendors electronically.

The strong relationship between size and use of a procurement website is probably due to the significant costs associated with creating and maintaining these websites. For small districts these fixed costs could outweigh any cost and time savings. An alternative for small districts is to use a regional purchasing group or BOCES to post solicitations on the web. For example, the Capital Region Purchasing Group advertises bidding opportunities on its website for public entities in the Albany and Leatherstocking regions.[29] Close to 20 percent of districts use this type of service. The share of districts increases to over 30 percent in very small districts. Given that a large share of respondents indicated a high level of satisfaction with this service, it could be an attractive option for other districts.

Constraints

The survey asked several questions about constraints districts face in managing their procurement operations (if any). At the beginning of the survey, we asked how many staff (FTE) were involved in procurement, if this number had changed compared to five years ago, and if the district had enough staff to procure goods and services efficiently (Table 14). On average districts have 2.3 full-time equivalent (FTE) procurement staff (median of 1.5), and 0.2 procurement FTE's per 100 pupils (Table 2). In 83 percent of districts the procurement staff has remained unchanged in the last five years, in 10 percent staff has increased, and in 7 percent staff has decreased. As expected, the level of procurement staff per pupil drops with the size of the district from 0.6 per 100 students in very small districts to one fifteenth this size in the largest districts (0.04 per 100). Approximately one-third of districts (31.6) indicated that they did not have enough staff to

[29] For more information about the Capital Region Purchasing Group, go to http://www.govbids.com/scripts/crpg/public/home1.asp.

operate efficiently, and 7 percent reported that the number of staff had decreased compared to five years ago. Districts experiencing a decline in staff were predominantly large districts which also have lower staff-to-pupil ratios. Whether a district feels they have adequate staff does not appear related to district size, whether staff size has changed, or the number of FTEs.

Table 14
Constraints by Enrollment Size[1]
(Percent of districts responding to survey)

		Enrollment Size				
	All Districts	**Very Small**	**Small**	**Medium**	**Large**	**Very Large**
Inadequate staff	31.6	25.6	25.9	36.8	32.9	25.6
Procurement staff (fte) per 100 pupils	0.16	***0.59***	***0.20***	***0.12***	***0.08***	***0.04***
Procurement staff decreasing (percent)	7.3	***5.3***	***4.5***	***5.9***	***7.1***	***20.9***
Procurement staff not changing (percent)	83.0	***84.2***	***86.4***	***86.5***	***82.4***	***62.8***
Constraints[2]						
Resources	62.9	***64.3***	***68.1***	***73.4***	***50.8***	***42.1***
Legal restrictions	21.5	***3.6***	***8.5***	***10.5***	***21.5***	***28.9***
District management	15.6	25.0	12.8	11.3	18.5	21.1
Training	13.2	***0.0***	***8.5***	***15.3***	***20.0***	***10.5***
Procurement process	12.6	7.1	6.4	14.5	13.8	15.8
Expertise	12.3	14.3	14.9	13.7	12.3	2.6
Vendors	10.9	14.3	8.5	12.9	12.3	2.6
IT capacity	9.6	10.7	6.4	9.7	10.8	10.5
Size of district	7.6	***21.4***	***23.4***	***4.0***	***1.5***	***0.0***
Space	7.0	7.1	8.5	8.9	6.2	0.0
Rural location	7.0	***28.6***	***12.8***	***4.8***	***1.5***	***0.0***
Aversion to change	5.6	0.0	8.5	6.5	4.6	5.3
General Municipal Law Bidding Requirements						
Too low	43.3	37.2	38.8	46.2	45.9	41.9
Just right	37.7	32.6	36.5	35.7	37.6	53.5
Too high	3.5	***11.6***	***2.4***	***3.5***	***2.4***	***0.0***
No opinion	14.1	***18.6***	***21.2***	***12.9***	***11.8***	***4.7***

Notes: [1]Bold and italics indicates that there is a statistically significant difference between the categories (10% level). "Very small" enrollment is below 10th percentile, "small" is enrollment from 10th to 30th percentile, "medium" is 30th to 70th percentile, and "large" is 70th to 90th percentile, and "very large" is above the 90th percentile. The enrollment measure is dcaadm. [2]Values are the percent of districts responding to question 37. Approximately 30 percent of districts did not respond to this question.

It is interesting that that just over two-thirds (67.2 percent) of districts indicated that they have enough staff to operate efficiently, yet 62.9 percent of respondents who answered question 37 at the end of the survey reported that are constrained by resources (time, staff, or money) in improving their procurement practices.[30] Of the districts that reported having adequate staff at the beginning of the survey, 52.1 percent also listed time, staff, or money as a major constraint to improving practices at the end of the survey. Not surprisingly, 81.8 percent of districts that reported not having adequate staff also indicated resources as a major constraint. Lack of resources is related to district size, with 64.3 percent of very small districts reporting it as a major constraint compared to 42.1 percent of very large districts. Very small districts also report their district size (21.4 percent), or rural location as a major constraint (28.6 percent). Lack of properly trained staff was not

[30] There are a high number of missing cases for this open-ended question (29.9 percent of all respondents). For a list of responses for each constraint, see Appendix E.

listed as a major constraint by very small districts, while 20 percent of large districts reported it as hindering their procurement operations (10.5 percent of very large districts). These districts listed problems getting their staff to understand procurement rules and procedures most frequently as problems related to training.

The second most frequently reported constraint was legal restrictions. Districts listed bidding requirements, SED regulations regarding leasing and multi-year contracts, and the inability to use federal General Services Agency contracts as legal constraints. When asked in question 36 if General Municipal Law bidding requirements are "too low," "just right," or "too high," 43.3 percent indicated that they are "too low" and 37.7 percent reported "just right." Only 3.5 percent indicated that bidding requirements are "too high." Not surprisingly, very small districts reported the requirements as "too high" more frequently than larger districts, but there was relatively little difference in the share of districts indicating it was too low by size of district. Legal restrictions, in general, are reported by very large districts (28.9 percent) more frequently as constraints to improving procurement practices than small (8.5 percent) and very small districts (3.6 percent).

Training & Support

Of those districts providing information on potential constraints, a significant number indicated that resources (staff, time, and budget), training, and expertise constrain procurement practices. This result, coupled with the wide variation in the use of procurement practices, suggests that training and support for procurement could be valuable to school district staff. We asked school business officials to indicate if and how they used SED for procurement issues, and to identify areas where they may be interested in training and support (questions 9 and 10).

Presently, 72 percent of districts use SED for procurement assistance (Table 15). Of those using SED, 80 percent use the SED website, 50 percent contact an SED staff member, and 36 percent use training material supplied by SED. Use of SED services goes up with enrollment, especially personal contact with SED staff. Very large districts are twice as likely to contact SED staff as small districts. Close to half of survey respondents indicated that they would like training and support on procurement issues. An even higher share (86 percent) expressed an interest in training on OGS contracts. Of those interested in general training and support, most identified training material on innovative practices, a website dedicated to purchasing practices for school districts, and conferences on procurement practices. A smaller share indicated an interest in support on cooperative purchasing and electronic procurement software. Interest in training and support increases with the size of the school district. Very large districts are almost twice as likely to express an interest in training and support as very small districts. This pattern exists for all types of training and support, except with OGS contracts. Interest in training and support is also higher in districts in less fiscal stress (higher income and lower student poverty).

Table 15
Interest in Training and Support on Procurement Issues
and Use of SED Resources by Enrollment Size[1]
(Percent of districts responding to survey)

	All Districts	Enrollment Size: Very Small	Small	Medium	Large	Very Large
Interested in training or support	47.8	***34.2***	***33.3***	***50.9***	***55.3***	***62.8***
Training and materials for new procurement personnel	17.3	***13.2***	***8.9***	***18.1***	***22.4***	***25.6***
Training and materials on innovative procurement practices	37.7	***23.7***	***23.3***	***40.4***	***44.7***	***55.8***
A website dedicated to purchasing practices for school districts	38.4	***28.9***	***23.3***	***40.9***	***45.9***	***53.5***
Support organizing cooperative purchasing groups	19.0	10.5	12.2	22.2	23.5	18.6
Support selecting electronic procurement management software	17.1	10.5	10.0	18.7	22.4	20.9
Organized conferences for training and sharing practices	26.7	***26.3***	***13.3***	***28.7***	***29.4***	***41.9***
Interested in training on use of OGS contracts	86.4	***89.5***	***77.8***	***88.9***	***89.4***	***86.0***
Presently use SED for help with procurement issues	71.7	***68.4***	***64.4***	***76.0***	***64.7***	***86.0***
I contact a SED staff member directly.	35.4	***26.3***	***31.1***	***35.1***	***31.8***	***60.5***
I use SED's website.	58.5	52.6	52.2	62.0	55.3	69.8
I use training materials supplied by SED.	26.9	23.7	27.8	26.9	25.9	30.2

Notes: [1]Bold and italics indicates that there is a statistically significant difference between the categories (10% level). "Very small" enrollment is below 10th percentile, "small" is enrollment from 10th to 30th percentile, "medium" is 30th to 70th percentile, and "large" is 70th to 90th percentile, and "very large" is above the 90th percentile. The enrollment measure is dcaadm.

The results of this survey suggest that SED and other organizations interested in improving procurement practices face a dilemma. Small districts, which are the most likely to use informal sourcing, and least likely to adopt "good" or "innovative" procurement practices, express the lowest level of interest in training and support. The explanation probably lies in the lack of staff time that small districts can devote to procurement functions. To avail themselves of training or support, or to use practices such as cooperative purchasing and OGS contracts, school districts need to have staff trained in procurement methods with sufficient time to devote to purchasing.[31] Efforts must be made to simplify and streamline the process of using particular methods, such as OGS contracts, and districts may want to consider sharing procurement staff. We will discuss these ideas in more depth at the end of the report.

[31]While we did not find a relationship between the size of the procurement staff and interest in training, this may be due to the inconsistency across districts in who is included in the procurement staff.

VII. MULTIVARIATE ANALYSIS

The results of the survey thus far have focused on frequencies and bivariate relationships of procurement practices. In this section, we use more rigorous tests of these characteristics by constructing an exploratory model of procurement practice adoption and estimating multivariate regressions. Our exploratory approach estimates the impact of district characteristics on the use of procurement practices in three stages. First, we confirm that district size is an important factor in the adoption of particular practices by using it as a single explanatory variable in multiple models. Next, we control for exogenous characteristics that we hypothesize will influence the use of practices. Finally, we test a full model of adoption of several practices including explanatory variables that are likely to be endogenous to a district's use of procurement practices.

Empirical Model of Procurement Practice Adoption

The literature reviewed to inform our model is limited to the adoption of innovations. "Innovation" in the context of this study is defined as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (Rogers, 2003).[32] Although many of the procurement practices we surveyed are common in public procurement (e.g. bidders lists, vendor manuals), their use varies widely among New York State school districts and suggests that some districts have yet to innovate by adopting them. Reasons for this variation could be the attributes of the practice itself and/or characteristics of districts. Attributes of innovations that influence adoption include (but are not limited to) compatibility with district needs and current systems, complexity, "trialability", and how readily results from adopting a practice are observed (Moore and Benbasat, 1991).[33] It is possible, for example, that some districts have not adopted procurement cards, because they are difficult to pilot in small organizations (trialability). Instituting a procurement card program can also be a complex process. It involves getting approval from a district's Board of Education, establishing internal control policies, and educating users on when, how, and what can be purchased with them. Finally, it is possible that procurement cards are not compatible with district needs, particularly in small districts that do not make a lot of low value, high volume purchases.

Using attributes of an innovation as a lens to examine adoption is a helpful exercise. Unfortunately, our survey did not capture data on attributes of procurement practices. Instead, for this analysis we focus on organizational characteristics that have been shown to influence the adoption of innovations. The literature on innovation adoption points to several key organizational characteristics that may influence variation in the use of procurement practices (Figure 2). These include district size, district stress, proximity to other adopters, management capacity, and district planning. District size, stress, and proximity are modeled as exogenous

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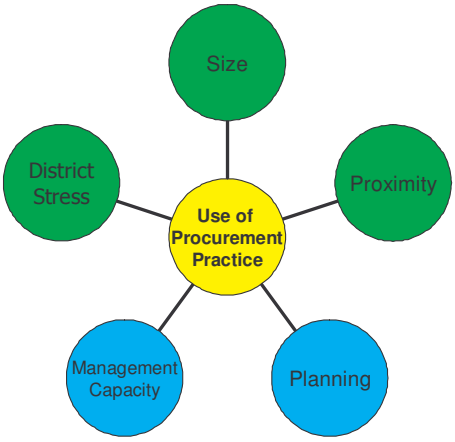
[32] Since our data is cross-sectional, we do not have data on the time of adoption to model the *diffusion* of procurement practices.

[33] The term "trialability" is often used in the innovation literature to refer to the ease of trying out the innovation through a pilot program or experiment (Moore and Benbasat, 1991). Also see Everett Roger's *Diffusion of Innovations Theory* website: http://www.arches.uga.edu/~bhummel/6200Project/ROA_Trial.html.

(external to district decisions) determinants of adoption, while management capacity and district planning are thought to be endogenous (affected by district decisions) to the use of procurement practices.

Figure 2
Adoption Model



As we have learned from our bivariate analyses, it is common for the size of an organization to be positively related to the adoption of new practices (Rogers, 2003; Damanpour, 1992; Mahler and Rogers, 1999). For school districts, adopting many of the practices surveyed for our analysis is related to economies of scale. Large districts process thousands of purchase requests and can justify the investment in an electronic requisitioning system based on this volume (unlike a smaller district). Although size has been associated with slack resources that can be invested in innovations (Hall, 2002), size in the context of procurement also necessitates certain methods of purchasing (competitive bidding) and use of tools that facilitate these processes (e.g. bidder lists). Thus, we expect district size (measured through enrollment) to have a positive effect on the likelihood of adopting certain procurement practices.

Regardless of size, a district stressed by lack of fiscal and organizational resources might be expected to struggle with implementing innovative practices. Fiscal and organizational stress, however, are ambiguous in their effects on innovation in the literature. Mone, McKinley, and Barker (1993) undertake a meta-analysis of the effects of organizational decline ("a decrease in an organization's resource base") on innovation and identify studies that associate organizational decline with failure to adopt innovations (Cameron, Whetten, and Kim, 1987) and studies that identify decline as the "mother of invention" (McKinley, 1984). Koberg's study (1987) investigated the responses of school districts to resource scarcity and environmental uncertainty. She measured procedural, personnel, process, structural, and strategic adjustments that school districts make

when faced with resource scarcity and environmental uncertainty. She found that adaptation of internal processes is positively related to resource availability, meaning a decline in resources led to a decline in use of certain process measures (repairs for textbooks). Since procurement processes are often marginalized relative to other management processes, we hypothesize that district stress will have a negative effect on adoption of new procurement practices.

The adoption literature is nearly unanimous in its findings that contact with other innovators increases the potential for organizations to adopt new practices. Contact and information sharing across districts is thought to increase awareness of practices which in turn motivates adoption (Perry and Danziger, 1980; Tornatzky and Fleischer, 1990; Moore and Benbasat, 1991). School districts that are seeking solutions to problems (e.g. lack of vendors participating in competitive bidding) are likely to turn to districts in their area for new processes and technologies. The also are likely to share ideas when working together on cooperative purchases. Thus, proximity to other adopters and participation in information sharing methods are expected to increase the likelihood of adopting new procurement practices.

Management capacity as a determinant of innovation has appeared in the literature for decades (Mohr, 1969; Daft, 1978). It has been difficult, however, to capture exactly how capacity influences adoption. Is it the presence of personnel driving adoption or do the presence of new practices require more or fewer personnel? Despite this endogeneity problem, most research argues that competent, committed management will spur innovation adoption (Rogers, 2003). Most studies examining the effects of management capacity on innovation use surveys of top officials and their attitudes towards adopting particular practices. In our survey, we were unable to capture characteristics of procurement managers. Nonetheless, we use the number of full-time-equivalent (FTE) procurement staff as a proxy for management capacity, because it is likely that school business officials (even Superintendents in very small districts) are responsible for adopting procurement practices. We expect that management capacity will have a positive effect on the adoption of certain practices.

As a final component of our adoption model, we include planning as a determinant of innovation. Like management capacity, planning may be endogenous to use of particular practices. For example, is a district that plans for future needs more likely to use a warehouse or does the use of a warehouse require that a district plan for its needs? The information technology adoption literature has recognized that planning is the key to successful implementation of IT innovations (Cassidy, 1998). Planning is also recommended by SED so that districts can take advantage of bulk purchasing and other methods meant to save resources. Our survey captures several practices related to planning, so we expect the presence of those practices to positively affect the use of particular procurement methods.

Specification & Measurement

Our model of adoption is specified by:

$$y_n = f(e_n, s_n, p_n, m_n, pl_n)$$

Where (for the nth school district)

y = use of (various) procurement practices
e = district enrollment
s = district stress
p = proximity
m = management capacity
pl = district planning

Our dependent variables are both discrete and continuous. For the first stage of our model, we tested the effect of size on various procurement practices. For the discrete variables, we limited the practices we tested to those with variation in response among practices. In cases where less than 25 percent and more than 75 percent of districts reported using a particular practice, we did not use them as dependent variables in our model.[34] For example, we did not model the use of procurement cards because only 18 percent of districts reported using them. Likewise, we did not model being a member of a coop because 82 percent of districts indicated that they are members of coops. Our discrete dependent variables include the use of general practices such as bidders lists, purchasing calendars, and warehousing. Our continuous variables for general practices include the percentage use of piggybacking methods and cooperative purchasing.[35] We also tested various e-procurement practices (discrete variables), including making small purchases online, communicating with staff and vendors online, and using electronic requisition systems.

Our independent variables attempt to capture district size, stress, proximity, management capacity and district planning. Size is measured by district enrollment (dcaadm) which also is used to create 5 dummy variables ordering size from very small to very large.[36] District stress is measured by the percent of Limited English Proficiency (LEP) students in the district, the percent of child poverty in the district, per pupil valuation of property in the district, the per pupil personal income of residents in the district, the number of superintendent turnovers in the past 10 years, and the number of budget defeats the district has experienced in the last 5 years. Having high percentages of LEP students and children in poverty is expected to be resource

[34] An exception was made for bidders list where 78.4 percent of districts reported using them.
[35] The percent use of piggybacking contracts was calculated using responses from question 18. Districts that reported using OGS or county/city contracts as their primary method of procuring a particular good or service were coded 1. There were 26 commodities that districts could indicate piggybacking as a primary method, but we excluded those where less than 5 percent of districts reported using OGS contracts as a primary method for a particular good or service. For example, only 2.2 percent of districts reported using OGS contracts as a primary method for procuring financial services, so it was excluded. The "percent use" variable was calculated by summing the number of times piggybacking was indicated as a primary method for procuring a particular good or service, then dividing it by 21 (the number of commodities or services where piggybacking was used by at least 5 percent of districts). The percentage use of cooperative purchasing contracts was tabulated using the same method, except the denominator was 11 (the number of commodities or services where cooperative purchasing was used by at least 5 percent of districts).
[36] "Very small" enrollment is below 10th percentile, "small" is enrollment from 10th to 30th percentile, "medium" is 30th to 70th percentile, and "large" is 70th to 90th percentile, and "very large" is above the 90th percentile.

demanding on a district and make it less likely to have the capacity to adopt certain practices. Property value and personal income variables are included to capture a district's fiscal capacity. Districts with lower fiscal capacity are expected to be less likely to adopt particular procurement practices. The final two variables, superintendent turnover and budget defeats, are included to capture management and resource instability. Districts with higher numbers of these occurrences are expected to be less focused on procurement management, and therefore less likely to adopt particular practices.

The second category of variables used to test exogenous effects on the use of procurement practices is proximity. Proximity to other adopters is measured geographically and through contact with other districts when using cooperative purchasing methods. The geographic measure calculates the average use of a particular practice by neighboring districts. It is expected that the more users of a particular practice that surround a district, the greater its likelihood of using the practice. This variable was constructed by counting and averaging the use of a practice of up to 8 surrounding districts. The second proximity variable used in our model is related to information sharing. It is possible that districts that work together to develop cooperative purchasing agreements and contracts will share information about their procurement practices. We expect that the greater the use of cooperative contracts, the more likely a district will share information and adopt a variety of procurement practices.

Our measures for management capacity and planning are included in the final stage of our analysis. Management capacity is largely measured by the number of staff a district has for procurement related functions. The survey asked districts to report their FTE figures, in addition to indicating if their procurement staffs increased, decreased or stayed the same compared to five years ago. Planning is measured by use of a purchasing calendar in the district. In our model where use of purchasing calendars is the dependent variable, we substitute the presence of an IT strategy for the planning variable.

Results

To begin, it is clear from the bivariate analyses that district size plays an important role in the use of procurement practices. To estimate specific effects, we used a series of logistic and ordinary least squares regressions to assess the impact of district size on the use of particular practices. Table 16 reports the results of these regressions using size as the only explanatory variable. District size is modeled two ways—enrollment and five dummy variables. Both specifications yield significant results on size for most of our models. With the exception of use of cooperative purchasing contracts, district size helps explain the use of general and e-procurement practices. As district enrollment increases, districts are more likely to use bidders lists, purchasing calendars, warehouses, and piggyback contracts. The same is true for e-procurement functions such as communicating with vendors and staff online and using electronic requisitioning. Conversely, regression results reveal that an increase in district size decreases a district's likelihood of making small purchases online.

Table 16
Impact of Enrollment Size on Procurement Practices
(controlling for no other district characteristics)

	Maximum likelihood estimates/Parameter estimates				
Practice	**Enrollment**	**Very Small**	**Medium**	**Large**	**Very Large**
General			(compared to small districts)		
Bidders list	0.001 ***	-0.509	0.743 **	2.2355 ***	NA [a]
Purchasing calendar	2.33E-04 ***	0.393	0.635 *	1.8483 ***	1.768 ***
Warehouse/storehouse	1.63E-04 ***	0.173	0.442	0.9505 **	1.522 ***
Percent use piggy-backing	6.76E-06 *	-0.095 **	0.002	0.011	0.016
Percent use of cooperative purchasing	-3.50E-07	-0.026	-0.037	-0.010	0.008
E-procurement					
Make small purchases online	-1.10E-04 **	0.504	-0.199	-0.0912	-1.041 **
Communicate with staff online	2.15E-04 ***	-0.316	-0.243	0.549	1.503 **
Communicate with vendors online	1.15E-04 **	-0.100	0.047	0.260	1.111
Use electronic requisitions	2.30E-04 ***	-1.220	1.056 *	1.9977 ***	2.708 ***

Note: [a]The logistic regression model for "bidders list" as the dependent variable uses only four size dummies--very small, small, medium, and large. Splitting enrollment into five size dummies resulted in quasicomplete separation of data points on the "very large" dummy variable. The "large" and "very large" dummies were combined to form one "large" dummy for this model.
*p<.05, **p<.01, ***p<.001

Using the size-only models as a guide, we proceeded to test exogenous variables that could influence the use of these practices. We added two categories of variables in addition to size—district stress and proximity variables. Tables 17 reports the results from a test of exogenous variables on the adoption of five procurement practices. Only five are presented, because four of the practices that show enrollment as an explanatory factor in adoption in Table 23 (use of internet for small purchases, and use of e-mail to communicate with vendors and staff) did not produce statistically significant Wald or F statistics when the exogenous variables were added. The five practices with statistically significant Wald and F statistics were bidders lists, purchasing calendars, warehousing, electronic requisitioning, and the percent use of piggyback contracts. Overall, the results show strong relationships of these practices with enrollment and proximity. Like the previous estimates in Table 23, growth in enrollment increases the likelihood that a district will use these five practices. In all but one model (purchasing calendar), the same is true for the proximity variable. As the average use of a particular practice by neighboring districts increases, the likelihood of adoption also increases. Our variable for information sharing as a proxy for proximity (being in a cooperative purchasing group) is not related to adoption of most practices.

District stress variables do not appear to have much of an impact on use of practices except on a few variables in the use of purchasing calendars, warehousing, and piggyback contracts. Under these practices, our measures of resource capacity are significant but have opposite signs. It is curious that increases in property value make a district more likely to use these practices, but increases in personal income decrease that likelihood. Reasons for the opposite effects will be explored in future research. The only other district stress variable that is significant is percent LEP students for purchasing calendars. An increase in LEP students decreases the likelihood of using a purchasing calendar.

Table 17
Summary of Results Modeling Characteristics that Influence the Adoption of Procurement Practices in New York State School Districts (using enrollment to control for district size)

	Maximum likelihood estimates				Parameter estimates
Characteristics	**Bidders List**	**Purchasing Calendar**	**Warehouse/ Storehouse**	**Electronic Requisitioning**	**Percent Use of Piggy-backing**
Size					
Enrollment (thousands)	0.377 **	0.271 ***	0.176 ***	0.151 ***	0.007 **
District Stress					
Percent LEP	0.081	-0.095 *	0.029	0.014	-0.001
Percent child poverty	5.224	-0.842	-0.488	-4.206	-0.203
Property value per pupil (millions)	0.142	-0.004	0.434 *	-0.953	0.029 **
Income per pupil (millions)	0.013	0.270	-4.930 *	1.802	-0.260 *
Superintendent turnover	-0.078	0.108	0.039	-0.008	0.001
Budget defeats	0.037	-0.015	0.002	0.016	2.92E-04
Proximity					
Average use of practice by neighboring districts	8.433 ***	0.537	0.814 *	1.581 ***	0.155 *
Percent use of cooperative purchasing	-1.315	-0.812	-0.048	-0.017	-0.115 **
Observations	424	378	411	402	410
Wald statistic/F statistic	81.5 ***	29.0 ***	23.8 **	45.7 ***	3.4 ***
DF	9	9	9	9	9

Note: *p<.05, **p<.01, ***p<.001

In the third stage of our analysis, we use our full model of adoption of procurement practices, including sets of variables that are arguably endogenous, such as management capacity and planning. Table 18 reports the results from our full model for the same five practices as those tested with exogenous variables, but we used district size dummies instead of enrollment to see how levels of enrollment influence use of practices. In the full model, enrollment and proximity (as measured by average use of a practice by surrounding districts) remain significantly related to adoption. A few of the same district stress variables are significant (percent LEP, full value, and income per pupil) for purchasing calendars, warehousing and piggybacking. The full model also provides some evidence that planning is an important factor in the use of these procurement practices. In three of the practices (purchasing calendar, warehouse, and percent use of piggybacking) planning is statistically significant, indicating that the presence of a planning tool increases the use or likelihood of use of these practices. Management capacity explains very little in our models, except for warehousing where the effect is counterintuitive (a decrease in procurement is positively related to adoption). Since larger districts are using warehouses, perhaps they are also the districts that have more staff to lay off when needed. It could also be the case that warehousing creates efficiencies (less staff) that are not generally associated with the practice but are picked up in our model. More research is needed to clarify this result.

Table 18
Summary of Results Modeling Characteristics that Influence the Adoption of Procurement Practices in New York State School Districts (using dummy variables to control for district size)

	Maximum likelihood estimates				Parameter estimates
Characteristics	**Bidders List**	**Purchasing Calendar**	**Warehouse/ Storehouse**	**Electronic Requisitioning**	**Percent Use of Piggy-backing**
Size					
Very small	-0.246	0.326	-0.016	-0.685	-0.102 **
Medium	0.713	0.808 *	0.985 *	0.702	-0.012
Large	2.425 **	2.404 ***	1.264 *	1.422 **	-0.009
Very large	NA [a]	2.648 ***	1.723 **	2.346 ***	-0.009
District Stress					
Percent LEP	0.088	-0.107 *	0.052	-0.036	2.35E-04
Percent child poverty	6.877	1.130	-0.026	-0.943	-0.135
Property value per pupil (millions)	0.004	0.176	0.447	-0.345	0.040 **
Income per pupil (millions)	1.484	-1.020	-5.340 *	0.865	-0.221
Superintendent turnover	-0.177	0.156	0.038	-0.007	0.006
Budget defeats	-0.023	-0.107	-0.136	-0.036	-0.003
Proximity					
Average use of practice by neighboring districts	8.735 ***	0.051	0.913 *	1.489 **	0.162 *
Percent use of cooperative purchasing	-1.177	-0.957	-0.244	-0.606	-0.120
Management Capacity					
Procurement staff per pupil	196.0	-75.99	83.72	-92.68	-4.553
Decrease in procurement staff	-0.509	0.057	0.960 *	-0.593	0.014
Planning					
Use of purchasing calendar	0.508	NA	0.720 *	-0.098	0.028 **
IT strategy	NA	1.197 *	NA	NA	NA
Observations	372	277	351	352	358
Wald statistic/F statistic	68.6 ***	42.8 ***	38.70 **	48.1 ***	2.6 ***
DF	14	15	15	15	15

Note: [a]The logistic regression model for "bidders list" as the dependent variable uses only four size dummies--very small, small, medium, and large. Splitting enrollment into five size dummies resulted in quasicomplete separation of data points on the "very large" dummy variable. The "large" and "very large" dummies were combined to form one "large" dummy for this model. *p<.05, **p<.01, ***p<.001

VIII. CONCLUSIONS & RECOMMENDATIONS

The objectives of the survey were threefold: 1) to document important procurement practices used by New York school districts, including emerging innovations; 2) to analyze how adoption of practices is related to district characteristics; and 3) to provide district business officials and procurement staff an opportunity to identify the major procurement constraints and challenges they face.

Conclusions

The high response rate (61.5 percent) and representative nature of respondents makes it possible to provide an accurate picture of procurement practices in New York districts. The basic and exploratory analyses of this paper reveal that use of procurement practices vary among districts due to several important characteristics. Clearly district size (enrollment) influences the use of particular practices. Our multivariate analysis hints that other factors may be at work as well, including proximity to other users and the presence of planning in the district. These findings could have implications for how SED applies specific policies and how organizations such as the NYSASBO target training opportunities. The following are some more specific findings:

Procurement Methods. Most districts use a variety of methods to procure their commodities, and these methods tend to differ across the types of commodities, and size of the district.

- Competitive bids are an important procurement method for several categories of commodities, but are not the primary procurement method in most districts. As expected, the use of competitive bidding goes up with enrollment size, due to the bidding limits under General Municipal Law.

- The use of informal sourcing (price quotes, negotiation, sole sourcing) is most common for a number of materials and supplies (e.g. computer software, library books), and a number of services (e.g. financial services, travel services). Small districts are 2 to 4 times more likely to use informal solicitation, and districts tend to view competitive bidding and informal sourcing as direct substitutes for several commodities.

- All districts have the option of purchasing commodities off of OGS contracts, in lieu of using competitive bidding, to take advantage of the state's purchasing power. OGS contracts are a leading procurement method for a number of equipment, furniture, and supply categories. While OGS contracts would seem especially advantageous for small districts, their use of OGS contracts is limited by lack of information on available contracts and the complexity of contracts.

- The use of cooperative purchasing groups is important for food and dairy products and maintenance supplies. Very small districts are less apt to participate in cooperatives, possibly due to the lack of procurement staff to work with a cooperative.

- Use of cooperative service agreements (CoSer) with a BOCES is another procurement option, which a number of districts use for services, computer software, and food commodities. Small and medium sized districts are more frequent users of BOCES for materials and supplies, and some services than large districts. Over 80 percent of districts use BOCES for information technology (IT) services, with use linked significantly to district wealth, and presumably to availability of state aid.

- Small purchases can pose a challenge for formal procurement systems, because they are often unplanned, of small size, and difficult to control. Use of procurement cards by authorized users and certain vendors have been promoted as a way to maintain flexibility, keep transaction costs low, and provide some control over small purchases. Only one-fifth of New York districts use procurement cards, and their use goes up with enrollment. Superintendents are typically the authorized users, and use of cards is limited to certain vendors.

E-Procurement. E-procurement is often touted as a way to reduce unit costs by expanding access to vendors, and decrease administrative costs by reducing paperwork and processing time. The following is a summary of e-procurement use by New York districts:

- Procurement staff in most districts use the internet to research price estimates, and research OGS contracts, or contracts of other communities. Internet use for product and vendor research goes up with district size, but small districts are more apt to use the internet for small purchases.

- A much smaller share of districts accept bids online or use an electronic requisition system. Electronic-requisition use increases dramatically with the size of the district.

- Only a few districts have a website devoted to procurement for communication and interaction with vendors, and most of these districts are large in size. As an alternative to operating their own website, districts can use a regional purchasing group or BOCES to post solicitations on the web. As expected, very small districts are much more apt to avail themselves of this service.

Other Procurement Practices. Districts use a number of procurement practices that are related to other stages of the procurement process: planning, vendor relations, contract management, and storing inventory.

- Approximately half of districts use purchasing calendars, which are recommended to reduce unit costs. Over 75 percent of districts have a common standard for computers, which is part of a comprehensive IT strategy. The use of planning practices goes up significantly with the size of the school district, but is not related to the total size of the procurement staff.

- The use of purchasing calendars (and use of internet for research) is positively related to the existence of a warehouse, but only a quarter of districts use a central warehouse. Warehousing is much higher in larger districts, typically to store building and ground maintenance supplies, office supplies, and equipment and furniture.

- Close to 80 percent of districts have a bidders list, although this share is only 53 percent in the smallest districts. For those districts with a bidders list most of the vendors on the list came from either previous bids, or the vendors were asked to be put on the list. Only a small share of districts (14 percent) have a vendor manual to inform potential vendors about district procurement policies. The use of bidders lists, vendors manuals, and the internet for communication with vendors rises significantly with district size.

Constraints, Training, & Support. The survey asks several questions about the constraints faced by districts in managing procurement, what SED resources they presently use, and their interest in training and support on procurement topics. The results from these questions could provide some guidance to SED, NYSASBO, and other organizations on areas to concentrate technical assistance and outreach.

- Approximately one-third of districts indicated (in a closed-ended question) that they did not have adequate staff to procure commodities efficiently, but two-thirds of the districts responding to an open-ended question on constraints cited resource constraints (time, staff, and money) as affecting their procurement practices. Small districts frequently cited district size and rural locations as constraints. Large districts are more apt to cite legal restrictions and staff expertise as constraints.

- Over 70 percent of districts use SED procurement services, primarily the website. Large districts are much more apt to contact SED staff about procurement issues than small districts.

- Close to half of district respondents expressed an interest in general training and support, and over 80 percent are interested in training on OGS contracts. Training material on innovative practices, a website dedicated to procurement practices, and conferences on procurement topics were mentioned by a number of districts.

- Small districts are less apt to be interested in training and support, despite the fact that they are less apt to use practices considered innovative among procurement professionals. The lack of trained procurement staff in these districts may partially account for this pattern. Efforts should be considered to provide these districts access to trained procurement staff or to streamline the process of using certain methods, such as OGS contracts.

Recommendations

Procurement in New York State school districts is one of many tasks school business officials perform in managing their districts' resources. School business officials procure goods and services through a variety of mechanisms to ensure that teachers, support staff, and administrators are getting the goods and services they need in a timely and cost-effective way.

The legal and institutional environments that govern and support procurement in New York State school districts several strengths. The legal foundation for procurement in state and education law encourages open and fair competition through bidding requirements, and promotes district accountability through the designation of purchasing agents. State law permits districts to take advantage of economies of scale by buying from state, county or city contracts, forming cooperative purchasing groups with other public entities, and using BOCES to contract for administrative and educational services. To support these practices, the New York State Association of School Business Officials (NYSASBO), the New York State Council of School Superintendents (NYSCOSS), and the New York State Association of Municipal Purchasing Officials (SAMPO) assist school business officials by notifying them about changes in procurement laws and regulations and sharing good practices through conferences and training sessions. SED and the Office of the State Comptroller (OSC) also offer advice about how to interpret laws and set up sufficient control mechanisms to prevent fraud and corruption.

As independent public entities, however, school districts must cultivate their own expertise to manage procurement. Although the state agencies and associations listed above are available to guide procurement decisions, school districts lack a clear source of information and assistance with buying and contracting for goods and services. Our survey results suggest that school districts could benefit from a unified effort by state agencies and associations to clarify legal requirements, provide training assistance, and increase awareness of good practices for procurement. Examples of such efforts include:

- **Increased staffing within SED to provide technical assistance to school districts on procurement policies and practices.** The Office of Education Management (OEM) in SED is not sufficiently staffed to provide the assistance school districts need with procurement policies and practices. To the extent that New York State deems it important that school districts use efficient and effective procurement practices, it is necessary that SED has enough qualified staff to provide such guidance. Increased staffing within SED is crucial for the successful implementation of the other recommendations discussed below.

- **A website hosted by SED that acts as a central resource about procurement policy, legal requirements, and preferred practices.** OEM currently hosts a website with helpful information about procurement practices for school districts (http://www.emsc.nysed.gov/mgtserv/gemsho.htm). However, districts could be better served by a website that acts as an information repository compiling procurement guidance provided by state agencies and professional organizations. The website should include SED's procurement policy handbook, training materials, information about and links to OGS contracts, examples of cooperative purchasing groups and contact information, information on BOCES procurement services, guidance on procurement innovations (such as procurement cards), model RFPs and bid solicitations, and links to national and state professional organizations that offer training for procurement personnel. Content for the website should be developed and maintained collaboratively by representatives from SED, OSC, OGS, and the School District Procurement Advisory Council (recommended below).

- **An annual procurement conference organized by SED.** These conferences should bring together procurement experts from SED, OSC, OGS, and professional organizations to present emerging issues in procurement practices to school district procurement personnel. Districts could benefit from training on how to use OGS contracts, organize cooperative purchasing groups, and use e-procurement practices. Panels should address needs and concerns of districts of different sizes, recognizing that practices vary based on enrollment. Proceedings and materials from the conferences should be posted on SED's procurement website (discussed above).

- **An advisory council made up of representatives from school districts and professional organizations to inform state agencies (SED, OSC, OGS) about procurement problems and policy issues.** The council and agencies should meet quarterly to address concerns and develop advisory notices for all school districts. Our survey responses suggest an immediate agenda could include:

  1) *Consideration to revise GML bidding requirements.* The council should consider GML bidding requirements relative to size of district operating budgets. For example, procurements exceeding $10,000, or 0.1 percent of operating expenditures in the previous year (whichever is higher), could trigger competitive bidding requirements instead of uniformly requiring districts (regardless of size) to bid for goods exceeding $10,000 (and $20,000 for public works contracts).

  2) *Clarification on the legal use of procurement cards*. The council should evaluate the use of these cards for low value, high volume purchases to reduce transaction costs.

  3) *Recommendations on procurement of professional services.* The council should determine if it is desirable to encourage periodic competitive sourcing of most professional services and develop model RFP documents for these services (e.g. auditing).

  4) *An investigation into the under-utilization of OGS contracts, especially among small districts.* If under-utilization is due to complexity of or lack of information about OGS contracts, then improvements should be considered in training materials, and simplification of the contracting process. If lack of use is due to price, quality, or lack of delivery, then recommendations should be made on how SED can assist OGS in better matching contracts to the needs of school districts.

5) *The development of easy-to-use, pre-packaged e-procurement tools* such as a software package that interacts with school districts websites to post procurement information and solicitations for vendors, and bidders lists.

6) *Recommendations on how procurement assistance can be provided to small districts with limited procurement staff.* Consideration should be given to expanding the role of BOCES in providing technical procurement services, or assisting small districts in sharing professional procurement staff.

7) *Recommendations on procurement training courses.* The council should evaluate training material available from public procurement organizations, such as the National Institute for Government Procurement (NIGP), and National Association of State Procurement Officials (NASPO) and develop recommendations about courses that are appropriate and useful for school districts.

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