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USING AGENCY THEORY TO MODEL COOPERATIVE PUBLIC PURCHASING

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ABSTRACT. Cooperative purchasing is beginning to receive renewed attention by scholars and practitioners alike in both the private and public sectors. Generally, cooperative purchasing arrangements have been reported to reduce costs, expedite transactions, and increase product knowledge. In the public sector, cooperative purchasing has been reported to reduce political risk, minimize "red-tape," and, in some cases, avoid all reported social equity goals that are reported to increase costs. In this article, we contend that the lack of conceptual clarity has marred the literature on cooperative public sector purchasing, and as a result public sector purchasers have no theoretical guidelines to help them decide upon this purchasing mechanism. Therefore, the purpose of this article is to use agency theory to analyze, define, and establish a conceptual framework of cooperative public purchasing to help guide academics and practicing public sector purchasing professionals.

INTRODUCTION

The operational linkages between government organizations, their purchasers, and their suppliers, are now recognized as important contributors to the success of government policy and decision-making. Although cooperative purchasing has been a topic of study for many years (Anderson & Macie, 1996; Goodwyn, 1976;

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Johnson, 1983; Knapp, 1969; Miller, 1937; Saloutos & Hicks, 1951; Taylor, 1953), researchers have only recently been re-visiting issues related to cooperative public purchasing (CPP) in search of more clarification with respect to its theoretical underpinnings (Aylesworth, 2003; Wooten, 2003; Tulip, 1999). Perhaps due to little theoretical direction and few standards to guide practice, there seems to be a lack of conceptual coherence within the cooperative purchasing literature to inform us concisely about what comprises cooperative procurement and its implications for public purchasing. Indeed, John Ramsay and Nigel Caldwell (2004) make a strong case that metaphors so often used can lead to misunderstanding the nature of interesting phenomenon. It is no different in public purchasing, because slight misconceptions about institutional goals and to whom one is accountable may in fact have large organizational consequences. To help remedy this situation, this article provides a long-needed general framework in utilizing agency theory to analyze, define, and theoretically model cooperative public purchasing.

A theory of CPP is needed for at least two reasons. First, a theory in this area can help all stakeholders in public procurement better understand the role they play in providing incentives for utilizing cooperatives in purchasing decisions. For example, the limited amount of extant research indicates that the term itself is conceptually muddled. Without a systematic theory which can offer guiding principles for the phenomena called cooperative purchasing, the imprecise cognitive images bandied about by practitioners and academics are merely ambiguous notions of purchasing mechanisms that appear to be related in some way. Thus consistent with the claims of academics that all theoretical perspectives have value (O'Toole, 1995; Terry, 1999), development of a theory of cooperative purchasing is useful if one wants to explain, predict, and understand behavior concerning the intent, purpose, and actual use of cooperatives in procurement.

A second reason why theory is needed in this area relates to the first point: without a unified model, observers and practitioners alike must remain content with various depictions that appear to be cooperative purchasing. In fact, the small amount of research in this area is by its nature, merely informative. Without axiomatic and generalizable principles, practitioners, policymakers, and academics alike must currently make prescriptive recommendations without understanding the numerous potential consequences of engaging in CPP, or whether one model of CPP is better than another. This article is a first attempt to justify the use of specific conceptual terms which can structure these long-needed organizing principles while providing direction to practitioners.

Given what is known about cooperative public purchasing at this critical point, agency theory holds considerable promise in connecting empirical observation to a generalizable theory of cooperative purchasing. Besides contributing new ways to approaching old problems, agency theory can help explain the purchasing incentives of individual purchasers by modeling their underlying motivations and clarifying the needs and goals of the stakeholders who support the cooperative purchasing process. In turn, this knowledge may be helpful in offering fundamental guidance to organizations that wish to transition from operational to strategic purchasing.

The current article is broken down into four sections. The first section discusses agency theory and its usefulness in modeling CPP, and briefly argues the need for conceptual clarity. The second section provides a condensed overview of cooperative enterprises by giving some examples before discussing the differences between public and private purchasing. The third segment explicates specific terms, definitions, and concepts that will be used to build three models of cooperative public purchasing within the context of agency theory, and the forth and final part discusses the strengths and weaknesses of the theory before laying out a research agenda based upon the models offered here.

AGENCY THEORY

According to Jensen and Meckling (1976, p. 308), an agency relationship is "a contract under which one or more persons (principals) engages another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent."[1] When executing the tasks within the principal-agent relationship, the agent must choose actions that have consequences for both the principal and the agent.[2] Since these outcomes can be either negative or positive for each of the actors, the chosen action of the agent affects the welfare of both. The principal-agent relationship is often forged because the agent possesses in greater abundance the needed skills, abilities, and/or time to perform the desired activities. Inevitably, however, there are several problems for the principal in governing the relationship with the agent, the first of which involves choosing an appropriate agent.

Consistent with the tenets of agency theory, the view adopted here assumes that agents, purchasing officials, are boundedly rational, self-interested utility-maximizers. However, it is not assumed that these agents behave selfishly and do so with guile. In other words, slightly contrary to Williamson's (1985) transaction cost economics framework, although it is assumed that people are opportunistic in the sense that they may shirk in a self-interested manner by trying to minimize effort if it fulfills their needs, it is not assumed that they will willingly misrepresent or lie about that effort. In other words, it is assumed that the principal and agent do not share the same levels of information and as such, the agent can opportunistically take advantage of the situation, sometimes to the detriment of the principal. This latter situation is known as moral hazard and is often the result of asymmetric information.[3]

Asymmetric Information

Agency theory in economics has long been concerned with the issues of control that arise as a result of information asymmetries between agents delegated to maximize the welfare of the principals who contracted with them (see especially Ross, 1973; Jensen & Meckling, 1976). In general, all principal-agent relationships are plagued by uncertainty; uncertainty not only in the level of an agent's knowledge, skills and abilities, but also in both the way the agent's action gets transformed into the output, and whether or not the agent is acting in the principal's best interest. This uncertainty is the result of the advantageous differential in knowledge held by the agent about her own actions in serving the principal. This difference is information asymmetry, and it is a third problem for the principal in governing the relationship with the agent.

Although under normal circumstances both the principal and the agent can observe the outcome, it is often the case that the principal cannot or does not observe the agent's specific action, effort, or capacity to perform all of which are supposed to obtain the outcome favored by the principal.[4] However, one must be cognizant that the agent not only observes her own action, but also may have knowledge not possessed by the principal about other factors that lead to the outcome. This information asymmetry describes the inability of the principal to properly assess the extent to which the agent chooses an action that coincides with the principal's best interests. As such, there can be little doubt that asymmetric information permeates the principal-agent relationship. For example, consider the case where a cooperative is used to purchase police vehicles. During the vendor selection process, the purchaser in the cooperative (the agent) may become aware of information that could point toward a vendor who might satisfy local preferences for some (or all) principals, but given the nature of the cooperative, the agent does not divulge this information to the cooperative principals. Thus the principals may end up with an inferior vendor being selected by the cooperative.

Not only do the actions or inactions of both the agent and principal influence the outcome, there are also random factors beyond the control of either the principal or the agent which also influence the outcome. Moreover, there are costs borne by the agent in performing the action, and by the principal in providing compensation in addition to the costs of monitoring the behavior of the agent. As such, these tools of agency theory are an appropriate lens by which to model cooperative public purchasing for at least three reasons. First, the nomenclature developed here can apply to both public and private cooperatives in a way that makes comparison easier between organizations in the two sectors, especially in identifying motivational similarities and differences. Second but just as important, it is easy to see how there are (hereafter called chains) of agency relationships in cooperatives that may impact the nature of purchasing.[5] For example, procurement officials typically are employed by each of the organizations who wish to cooperate, even while the cooperative association itself may or may not have a separate purchaser for the collective enterprise. Depending upon the rules, procedures, and by-laws of the cooperative agreements, there may be differential incentives for purchasers at different levels to utilize cooperatives that may not be apparent without the aid of agency theory.

Since CPP can be thought of as a chain of agency relationships similar to the contractual relations found within the economic firm, valuable questions arise as to the best way to organize the stakeholder relationships in public procurement. Ronald Coase

(1937) was the first to reformulate the notion of the firm in orthodox economic theory from that conceived as a “black box” that transforms inputs (resources) into outputs (production). Instead, he conceived it as the neoclassical economics perspective of a system or relationships which directs production. In other words, a firm is more efficient at aligning resources with outputs than is the market. As Harold Demsetz (1983, p. 377) observes, “it is a mistake to confuse the firm of economic theory with its real world namesake. The chief mission of neoclassical economics is to understand how the price system coordinates the use of resources, not the inner workings of real firms.” Similar to Coasian economics, procurement can be arranged through the market and regulated by the price mechanism with all of its attendant hidden costs to the procurement official, or the exchange transactions of procurement can be vertically integrated and ordered through the firm in a hierarchy where purchasing is integrated with the needs for the same products by other principals (and as we shall see, their agents).

This theoretical difference between market and hierarchy is not completely esoteric but rather is applicable to cooperative public procurement because the issues surrounding why exchanges take place in a market or under a firm is similar to discerning why procurement officials choose to buy cooperatively. Clearly it is not costless to find a good cooperative to use, and it is important to understand what benefits accrue to procurement officials and their principals to explain why they take on the additional costs associated with utilizing CPP. Agency theory can expose the motivations of stakeholders in public procurement.

As mentioned previously, agency theory and its embedded theory of incentives generally assumes that actions and efforts are normally unverifiable, while outcomes are generally known and confirmable (Dixit, 2002). In terms of CPP, the effort of the procurement official is verified only when the outcome (the purchase) is obtained. However, it will be shown that the action as opposed to the outcome may not be readily distinguished by the stakeholders. Consider that although the procurement official might believe that the actual purchase is an “outcome,” the purchase is merely considered an “action” from the viewpoint of the stakeholder for whom the purchase was made. In other words, the level of analysis is important in determining what behavior is an “action” as opposed to an “outcome.”

The third reason why agency theory is a fruitful method for modeling cooperative public purchasing is that it helps to identify the various incentives of the stakeholders. By clarifying the opportunities and constraints they face, hope is engendered that efficiency, effectiveness, and accountability will be increased.

CPP can be thought of as a series (or chain) of agency nodes similar to the contractual relations found within the economic firm. Thus the question of how to organize the relations considers the differences between a hierarchy and a market (Coase, 1937). Since the outcome can be verified but not the effort, it becomes rational for the procurement official to shift the costs of effort to the cooperative. This begs the question, why don't they? Is it lack of skills or knowledge? Are they prohibited by rules? Does CPP serve some procurement objectives but not others? Since CPP is a chain of agencies, the multiple tasks pursued by common agents with numerous goal dimensions that tend to be ambiguous and sometimes conflictual exacerbate the challenge to principals, procurement officials, and monitors alike in determining whether the goals are fulfilled and outcomes satisfied (Dixit, 2002; Wilson, 1989).

Strategic Procurement

The direction of purchasing may be shifting from a clerical function within organizations to a strategic role, it is likely that public purchasing will become more important to both researchers and practitioners alike (McCue and Hinson, 2004). Indeed, procurement professionals are beginning to recognize that new skills and abilities are increasingly required for success within both the public and private procurement sectors (see for example McCue and Gianakis [2001], McCue and Pitzer [2000], Carr and Smeltzer [1999], Giunipero and Handfield [2004], Giunipero and Pearcy [2000], Pooley and Dunn [1994]). As such, we believe it worthwhile that procurement officials understand the myriad problems and solutions faced in transitioning to cooperative purchasing, if for no other reason than to acquire information on its costs and benefits and to help in avoiding the problems of adverse selection. In order to do this, practitioners increasingly need additional skills and knowledge of cooperatives.

Adverse selection is not the only problem because a fundamental issue is identifying the specific stakeholders in whose name the purchasing is conducted. In other words, it is obviously important to assess what are the direct and indirect linkages that might assist or inhibit the flows of materiel, services, information exchange, and money transactions. Unfortunately, these issues remain unaddressed in the cooperative purchasing literature because to date, there have been no systematic attempts to identify and map the conceptual boundaries of cooperative public purchasing so critical to successful public purchasing. This oversight begs the questions, what would a model of public purchasing look like and what convention could be used to conceptualize cooperative public purchasing arrangements?

It is clear that the level at which one examines CPP impacts the assessment of its value. For example, if the output of the cooperative is modeled as team production (Holmstrom 1982; Alchian and Demsetz 1972), the incentives for engaging in this type of behavior may be very different than if CPP is thought of as a chain of agency relationships which is the model offered here. Consider that it is almost conventional wisdom in the literature that there are few organizational objectives beyond those of economic efficiency, yet this assumption neglects to account for political goals and objectives that may be more important to policy-makers than the practicable economic gains that can be realized from cooperation.[6]

This situation may result in the potential conflict between broad organizational objectives conceived in team production and promulgated through organizational culture with the political aims of rational actors and stakeholders in a chain of agency. Given this, compare cooperative purchasing viewed within the traditional civic-minded orientation toward public purchasing with a public entrepreneurship perspective and its emphasis on individual opportunistic self-promotion, secrecy, risk-taking, and raw power politics. Since this latter perception tends to produce skepticism about, and conflict with democratic institutions (Moe, 1994; Stever, 1998; Terry & Levin, 1998), one is left wondering about questions concerning public accountability in either case.[7] As Colin Diver (1982, p. 404) put it a quarter century ago, “public managers are, after all, public servants. Their acts must derive their legitimacy from the consent of the governed, as expressed through the Constitution and laws, not from any personal system of values, no matter how noble.”

If this is correct, agency theory can draw attention to potential anti-democratic tendencies within CPP.

THE NEED FOR CONCEPTUAL CLARITY

Cooperative purchasing is very important in the contemporary economy. According to the National Cooperative Business Association (2004), there are approximately 48,000 cooperatives currently operating in the U.S. serving some 120 million members. Worldwide it is claimed that there are roughly 750,000 cooperatives that benefit 730 million members (National Cooperative Business Association, 2004). More than 30 cooperatives have annual revenue in excess of $1 billion, and cooperatives have been engaged in all sectors of the economy. The legal arrangements typically used to form cooperatives range from traditional profit-maximizing business enterprises to non-profit cooperatives specifically serving the needs of its members. Furthermore, there are a host of agreements that are considered to be *cooperatives* that are neither formal businesses nor are they non-profit organizations. Rather they tend to be informal accords or understandings between various individuals or groups to generate some shared benefit, such as childcare cooperatives or neighborhood cooperatives.

It is interesting to note that a number of scholars have provided substantive definitions that have guided their research, yet a perusal of the literature reveals that lacking a consistent theoretically-based terminology, different terms appear to refer to similar concepts. For example, Hendrick (1997) refers to purchasing consortiums and group purchasing that sound nearly synonymous, while there are others who maintain that the profit motive, competition, and fee structure, among other factors, substantiate the differences between a cooperative and a consortium (Macie, 1996; Anderson & Macie, 1996). Stevens (n.d.) identifies cooperative purchasing as a collaborative effort irrespective of the nature and intent of the cooperative.[8] Tulip (1999, p. 25) simplifies the definition to “a voluntary combination between two or more organizations that is designed to aggregate and maximize their purchasing power in a market.”

In addition, Metha (2003) suggests that cooperatives are really purchasing groups that are, at their essence, shared services which are owned and operated by independent business owners, irrespective of the nature of the relations into which the parties enter. Accordingly, “[g]roup purchasing is a cost management service that provides solutions to organizations or corporations looking to reduce expenses while optimizing revenues. It also offers the participants a complete array of equipment, supplies, and services” (Metha, 2003, p. 29).

In looking at examples of CPP, one might consider the intersection of strategic alliances, collaborative purchasing units, and cooperative agreements. According to Harrigan (1988), strategic alliances and cooperative agreements are partnerships among organizations that work together to attain some strategic objective. Yet others use the terms cooperative purchasing, consortium, and group buying interchangeably (Wooten, 2003), or speak of cooperatives that focus on the traditional relationships among the cooperative buyers only (Aylesworth, 2004). Consequently, the ambiguity across the literature on what comprises cooperative purchasing and what aspects of it are important can probably be best illustrated by considering various professional publications and position papers such as those put out by the *National Association of State Purchasing Officials* (NASPO 1999; 1998) which refer to joint acquisition strategies, buying panels, procurement partnerships, pooling, and cross-functional teams with little attention paid to the precise distinctions between these terms.

However, this situation is not restricted to public purchasing because the supply chain management literature is filled with similar problems over terms such as strategic partnering and cooperative exchange (Pilling & Zhang, 1992; McKinney, Morissey & Kaluzny, 1993). Given the vast array of cooperative arrangements that currently exist, it is important to bring conceptual clarity and theoretical guidance to cooperative purchasing that is both reliable and valid. Although not providing a conclusively final conceptualization at this juncture, it is hoped that the one offered in these pages lends conceptual coherence to cooperative public purchasing. The simple point made here is that to date, the lack of an organized schema within which to understand cooperative enterprises leaves observers unsure if these labels refer to similar or different concepts and whether or not they are organizationally or contextually dependent.

DEFINITION AND LEVELS OF ANALYSIS

Models are simple approximations of a given phenomenon, and when examining and modeling public purchasing cooperatives, the level of analysis is extremely important in determining the conceptual attributes of interest. For example, cooperatives can be defined on at least four levels. At one level, the independent government entities engaged in cooperative purchasing would be the focus. These entities are termed public cooperative affiliates (PCA) and they comprise the members of the cooperative. At this organizational level, it is assumed that government entities require purchasing departments and organizational personnel to coordinate their purchasing activities in a way that is relevant to each PCA that participates in the cooperative. At this level of analysis, the government itself is the principal that relies on both the purchasing departments and the purchasing officials who are the focus of the next level.

At another level, even the individual purchasers within those government agencies could be the effective unit of analysis. In this way of thinking, the public purchasers would be interdependent actors who are asymmetrically informed about the costs, benefits, and management of the cooperative enterprise, and it may be that they each have different motivations for utilizing cooperative purchasing. This suggests that purchasing officials might shirk their responsibilities to citizens, government, or their own purchasing department, by diminishing effort or transferring effort to the cooperative. Moreover, some might be prohibited from exploiting CPP, or directed to utilize a particular cooperative organization for its purchasing needs, while others may have discretion in deciding if and when a cooperative is used. Still others may join a cooperative for some types of purchases and continue to purchase other independently even though the cooperative provides the commodity.

At a more holistic level, the cooperative as a whole can be modeled as the unit of analysis. This would consist of the cooperative enterprise, the PCAs, and the organizational charter or the legal covenants governing cooperative public purchasing. These latter elements of the model are referred to as the cooperative public purchasing agreements (CPPAs), and at a minimum they should delineate four elements of the cooperative which include: identifying who does the negotiating and buying e.g. hereafter called the mechanism of purchasing; formalizing the organizational and institutional contours of the cooperative enterprise; specifying the dues paid by the PCAs for maintaining the CPPA; and outlining the relationship of the public cooperative affiliates to each other. Consequently, even though cooperatives are composed of bureaucratic organizations and individuals, this view sees the cooperative as a corporate body where the cooperative interacts intra-organizationally and with other entities in its environment. In other words, the entire cooperative integrates the agreements outlining the complete relationship of component members (PCAs) to the cooperative enterprise and its organization (if there is one). In this attempt to model cooperative public purchasing at this level, what becomes important is not only understanding the interdependency among participating PCA members, but also determining CPPA organizational responsiveness, transparency, and alignment of goals with member PCAs by ascertaining the negotiation and purchasing procedures for the CPPA. Finally, one could model and define cooperative public purchasing in terms of the social system whereby citizens, businesses, governments, and all potential vendors and suppliers could be mapped into a supply line, network, or web, that focuses on modeling how the cooperative interacts with these and other societal stakeholders. At this level, there are numerous layers of agency and common agency.

THE MODELS

A simple principal-agent theory of cooperative public purchasing is a powerful tool to view cooperative purchasing arrangements because it can be used to study purchasing process outcomes, stakeholder behavior, information dissemination, decision-making, and accountability in cooperative arrangements. According to the underlying theory of the models, the principal is a stakeholder that retains a person or organization to undertake a specific task and serve a particular functional role within cooperative public purchasing. In turn, the person or organization delegated to manage these responsibilities on behalf of the principal is the agent.

Although operationally practitioners and theoreticians are most interested in the mechanism by which goods and services are purchased, and the relationship of the affiliates (PCAs) to one another, there may be other considerations. For example, they might also want to know about how title passes from supplier to purchaser, the scope of purchases by the cooperative agreement i.e. single-purpose or multi-purpose, the determination of the sharing of expenses, contracting issues such as the procedures for negotiating purchases, and questions about ownership of the cooperative (if there is ownership). However for the sake of parsimony, two cooperative purchasing dimensions which appear to be basic elements of all cooperatives are discussed herein, and they are the mechanism of purchasing the actual goods and services, and the relationship of the affiliates (PCAs) to each other. If the mechanism of purchasing is located in an organ external of the cooperative itself, is it for-profit or non-profit? These are some issues to be explored.[9]

At its most elemental level, the model of public purchasing in representative democracies is depicted in Figure 1 suggesting a very simple model of a principal-agent hierarchy for purchasers in the public sector. It is assumed that government exists for the benefits of its citizens and thus is the agent of the people, the beginning and original principals. Moreover, it indicates that various government entities fulfill their own purchasing needs by utilizing their respective purchasing departments. Thus, the departments become agents of the government entity, and the government entity is an agent of the citizens. However, there is a third level of agency depicted in this chain of agency, and it consists of the purchasing department employees (labeled purchaser) who become direct agents of their respective departments and indirect agents of both the government entities and of citizens.[10]

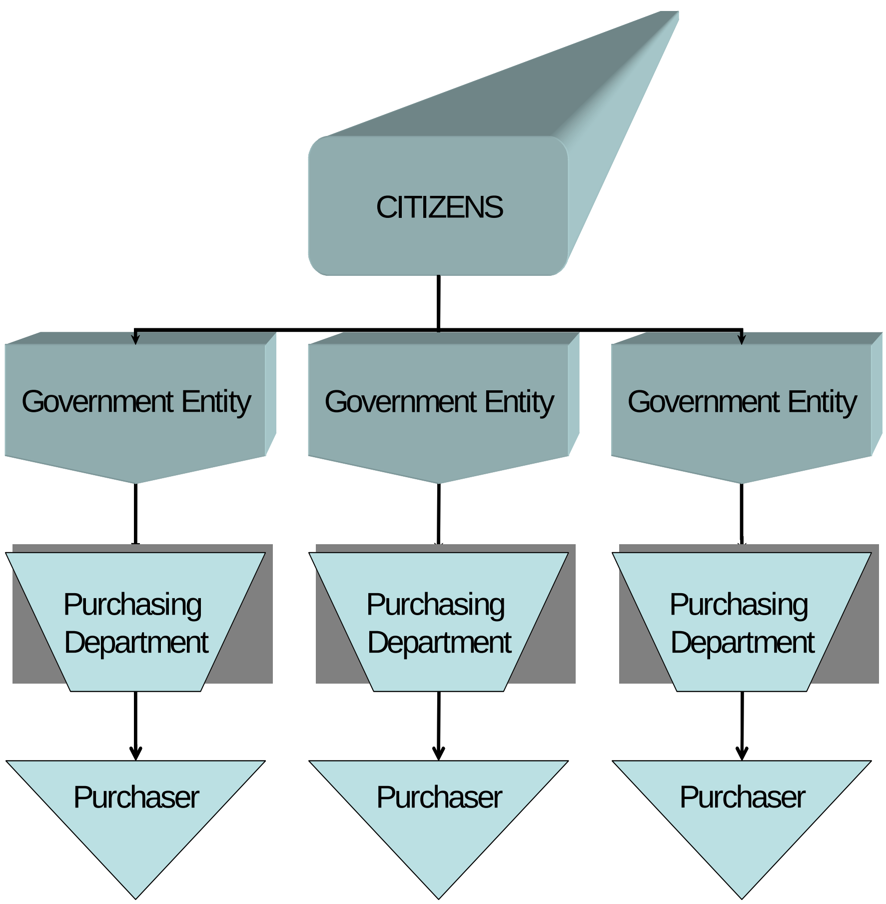
Acknowledgment that this is an economical representation of public purchasing may appear to be too reductionist. However, it does suggest at least three significant characteristics of public purchasing. First, it is obvious that even a denuded representation like that shown in Figure 1 reveals several layers of agency that are not readily apparent from casual observation. However, it is obvious that there is a chain of agency where at any given node of agency relation, there are multiple principals for whom the agent has a fiducial responsibility. In turn this suggests that purchasing decisions may be more complex than is generally recognized in the literature. A second reason this theory is important is that it illustrates the ambiguous nature of common agency in the public sector. No matter if it is conceived as delegated or intrinsic, when public purchasing decisions are made, the purchasing agent takes on fiduciary responsibilities of multiple and perhaps conflicting principals.

In Figure 1, consider who and what comprise the group called citizens. If it is assumed that they are domestic providers, this group would also include the vendors and suppliers themselves with whom the purchasers at the bottom are contracting. Given that there are social goals beyond mere economics that are thought to be important when procuring public goods and services, the murkiness with which the public purchasing role can be viewed is considerable. Take, for instance, a common situation where a local government has a preference policy to buy locally whenever feasible. When this happens, it is difficult for the public to gauge the objectives and success of the purchase. As a result, issues of public control and accountability emerge, especially when government agencies are pursuing multiple missions and there is a fuzziness surrounding public objectives (Dewatripont, Jewitt & Tirole 1999).

Undeterred by the problems of common agency, economists have modeled organized interests as the principal and government as the agent (Grossman & Helpman, 1996), and it is often supposed that interest groups or private corporations can asymmetrically bias public policy in their direction (Becker, 1983; Faith, Leavens & Tollison, 1982; Lohmann, 1998). But just as citizens do not universally agree on many goals, various governments can also have competing goals with one another. For example, the state legislature may have the goal of lower taxes while some localities under its jurisdiction may want additional goods and services yet are restricted by state regulation from taxing to provide for them. Nonetheless, although the people living in these cities are citizens of those municipalities, they are also citizens of the state. Assuming that these city-dwellers want the increase in services, the problem of common agency is obvious.

The theory further suggests that whether or not these entities are of the same government e.g. agencies within the same government, or represent different governments, Figure 1 leaves open the potential that government entities may or may not have similar goals. Consequently, the agency relationships modeled here suggest that governments, if not outright competitive, could be at cross-purposes so that there may be times when cooperative public purchasing is not mutually advantageous. An example is when the U.S. General Services Administration (GSA) will restrict the availability of goods and services from the supply schedule if, when left open to be used by other entities, the use of the schedule results in lower supply or higher prices for the U.S. government. In other words, if the federal government is adversely affected by other entities procuring materiel through its supply schedule, the available supply schedule will be shrunk by the federal government to capture the savings under the schedule. In sum, Figure 1 makes clear that for any purchasing decision, the multiple layers of principals and agents make organizational responsiveness and maintaining transparency difficult. In turn, this impacts the potential for public accountability.

FIGURE 1
Conceptual Framework for Principal-Agent Model of Public Purchasing



Before offering some specific models of cooperative public purchasing, there are other issues suggested by the simple model in Figure 1, because there are fundamental questions concerning how one should model the economics associated with public procurement (Demsetz, 1971; Telser, 1969; also see Lloyd 2000 on symptoms and treatments of contracting pathologies). For example, although it may be a major factor in obtaining cooperative public purchasing agreements, attempting to control and reduce production costs may be less important than the demand schedules or policy preferences of citizens.

In other words, it is often unknown how marginal price costs associated with publicly-procured goods and services might impact the amount of purchased materials and hence, the costs paid by public purchasers for those goods and services obtained through cooperative agreements. It may be that public pressures for a particular course of action requiring large purchase orders may override the rational cost-benefit calculus of the decision, yet due to the fog of agency layers, it is difficult to either reward or punish this type of behavior. Consequently, based upon how one models cooperative public purchasing, seemingly innocuous decisions may take on added import. Consider the following two different cases and their relationship to public purchasing. Application of the finding of Demsetz (1971) shows that when bidders and buyers' cooperatives are competing, they must estimate demand which can lead to economic inefficiencies because the true demand is unknown. However when one models public purchasing as if market or individual demand is known with certainty, it is not difficult to arrive at an economically efficient solution. These two circumstances have direct consequences for cooperative public purchasing.

Again, take the case of the GSA. If so many entities are using the federal schedule, the implication is that there is purchasing certainty and thus economic efficiency. Yet if entities can opt out on individual purchases in an à la carte manner, inefficiencies are introduced due to demand uncertainty. What is more, it may be that the benefits of entering into a cooperative agreement may be asymmetrically distributed across not only the PCAs themselves, but also across their constituents as well, and this might include some potential suppliers. Thus this should be but one element of the contractual obligations of the PCAs and it should be precisely outlined in the agreement.

Indeed this realization is consistent with a GAO report which found that the effect of cooperative purchasing on industry providers and small businesses is likely to vary (GAO, 1997), and as the reinventing government movement advances, the problems of estimation are likely to become more complex. Moreover, geographic proximity of the cooperative public purchaser to the goods and service providers surely asymmetrically impacts the bottom-line of the providers. Thus, the economies of transport costs are differentially enjoyed unless the cooperative agreement distributes the costs equally among the member affiliates. This helps to explain why a PCA may want to buy locally and in the GSA example mentioned above, why uncertainty and thus inefficiencies are introduced into cooperative public purchasing.

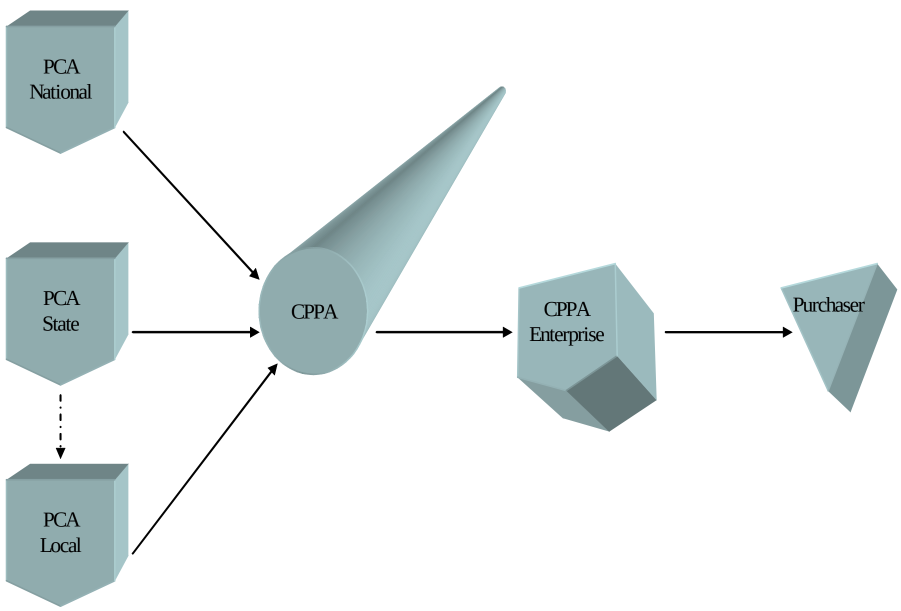
In terms of CPP, when one more clearly models and thus understands the principal-agent relationships associated with the PCAs, policy-makers can more efficiently pursue clarified goals which are likely to result in significant savings of assets, resources, time, and effort. Identifying who are rival providers, rival bidders, and potential non-rival partners, can lead to cooperative agreements that make sense for all parties while helping to fortify public purchasing. Thus the models offered here will clarify relationships among institutions and individuals involved in cooperative public purchasing.

Buyer Model

Figure 2 specifies a principal-agent model of cooperative public purchasing labeled the Buyer model. Under this system, the PCAs choose to promulgate a cooperative public purchasing agreement (labeled CPPA) which specifies that an administrative bureaucratic organ (labeled CPPA Enterprise) will be created to carry out the mandates of the CPPA. Charged with fulfilling this role, the CPPA enterprise itself hires individuals (labeled purchaser) to negotiate purchases and contracts for the membership. One example of the Buyer model is the Educational and Institutional Cooperative Service, Inc., which is a non-profit buying cooperative owned by more than 1,500 member-PCAs.

There are several characteristics worthy of discussion in this simple Buyer model. First, even after excluding the citizens and the purchasing departments within the PCAs themselves which adds

FIGURE 2
Buyer Model of Cooperative Public Purchasing



additional layers of agency, the configuration readily shows the multiple layers of agency just at the cooperative level. For example, the member-PCAs that coalesce around the CPPA utilize the enterprise as its agent which in turn, utilizes another agent (the purchaser). Thus, the purchaser becomes an indirect agent two steps removed from the original principals in the model! In this circumstance, issues of accountability and control arise. Under these conditions, the agent is the purchaser of the cooperative, and the principals are the various participants in the cooperative, typically a public purchasing agent from one government.

A second quality of the Buyer pattern of public purchasing has to do with the relationship between PCA's. The dotted line represents the possibility of a vertical public purchasing agreement which describes the relationship of the affiliates to each other.[11] Vertical public purchasing agreements are the legal covenants governing cooperative public purchasing where at least some of the members of the agreements (PCAs) are hierarchically ordered. This means that one PCA possesses the ability to limit another PCA from participation. An example is an agreement between a state and its localities like that shown here. In this case, the state can compel local governments under its jurisdiction to purchase from the CPPA entity, and thus, can dictate to the locality-PCAs what it may and may not purchase. Under these circumstances, the muddle of common agency is amplified to further diminish transparency and accountability.

However, vertical agreements are different from horizontal public purchasing agreements. The latter CPPAs describe the legal covenants for member PCAs that are the same type of legal entities and have the same legal status. Examples include a CPPA with PCAs composed of states without their localities, or a CPPA with both states and the national government comprising the PCAs. This means that since each PCA has equal legal stature, the likelihood of coercive enjoinment is diminished. Thus in vertical CPPAs, one or more members to the agreement have a subsidiary legal status inferior to other members and may be forced to join against their will. In Figure 2, this is depicted by the locality PCA being inferior to the state PCA.[12]

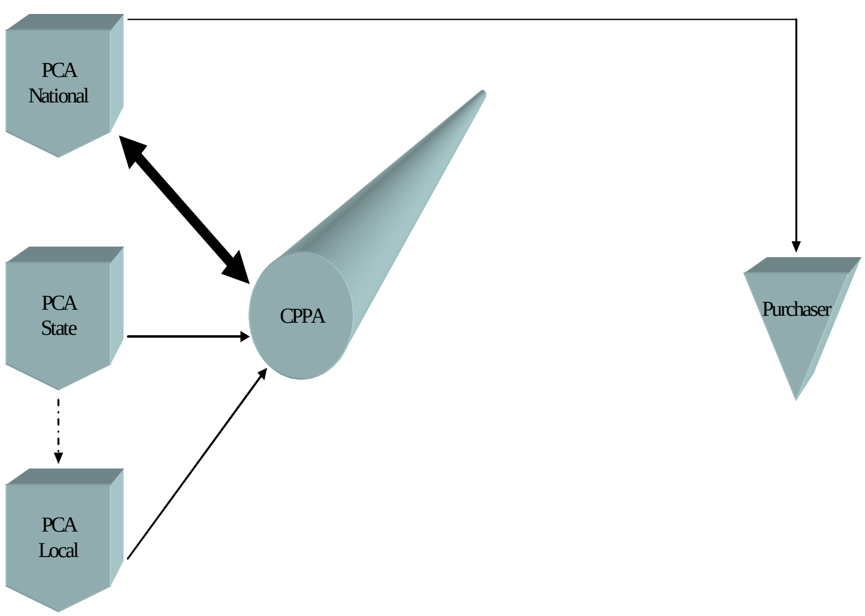
So what does this demonstrate? Focusing on just the vertical relationship, the Buyer model implies that the dictatorial aspect of vertical public purchasing agreements may harbor the potential for distortion of purchases carried out by subservient PCAs. Consider that because cities and counties often wish to secure local suppliers to help in carrying out policies related to economic development, minority preferences, and economic efficiencies, a mandate to partake in a vertical public purchasing agreement might have the effect of distorting local purchasing contracts, especially toward larger suppliers usually found at a higher governmental level. Although there might be economic gains captured through economies of scale, the distortion of these other local goals may be unwanted and in fact might produce significant unintended consequences that remain invisible or negligible at the higher level. Thus the Buyer model can help determine rivals, subsidiaries, and mutual partners, but as Figure 3 will show, it is not the only theoretical paradigm of cooperative public purchasing.

Piggyback Model

A second option for government entities to engage in CPP is to procure through an existing public cooperative affiliate (PCA) that has the means or expertise to buy in bulk and will then negotiate contracts for the other PCAs who are parties to the same agreement. This relationship is depicted in Figure 3. Prominent examples of this are when localities utilize inter-local agreements or when states use the U.S. federal GSA schedule.[13] The GSA schedule is an internal buying organ of the federal government for its departments and agencies. The GSA also allows states, localities, tribes, and other entities to use its purchasing schedule. In this way, a public cooperative affiliate is used by other parties to the cooperative purchasing agreement when they use a piggy-back approach to obtain goods and services.

There are three important details in the Piggyback model depicted in Figure 3. The first refers to the lack of a CPPA enterprise like that

FIGURE 3
Piggyback Model of Cooperative Public Purchasing



found in the Buyer model. This means that the cooperative public purchasing agreement has no separate administrative organization outside of the member PCAs. A second point about the Piggyback model centers on the relationship between the national PCA and the other PCA-members. Notice that the linkage between the national PCA and the CPPA is bi-directional. This suggests the possibility that the national PCA might simultaneously be both a principal for the CPPA and an agent of the CPPA, which implies that the incentives of the principals and agents in this model may be exhaustively aligned. Although outside the scope of this article, such a possibility is a clarion call for future research in this area.

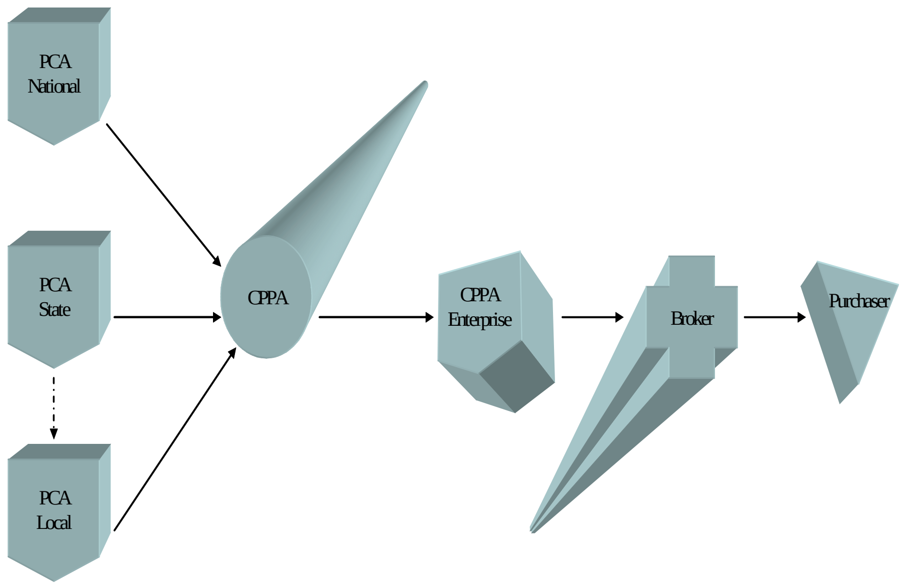
A third point to make about the Piggyback approach concerns the possibility that other PCAs could buy piggybacked depending upon the commodity or service being purchased. Consider the feasibility that although Figure 3 indicates that the national PCA is the only purchaser, there is the potential for conceiving of a meta-Piggyback model where each PCA brings unique commodity or service technocratic expertise to the group which results in economies of scale – such as electrical cooperatives. Thus, the simultaneity depicted between the national PCA and the CPPA shown here might apply to other PCAs as well. This leads to the final model of cooperative public purchasing.

Broker Model

Agency theory prompts consideration of the hypothetical case when a cooperative agreement exploits an organization external of the CPPA structure to make purchases for the membership. Like the Buyer and Piggyback models depicted in Figures 2 and 3, a Broker model shown in Figure 4 can also have PCAs that are vertically or horizontally ranked as denoted by the dotted line from the state PCA to the local PCA. However, the layers of agency make clear that the organ directly charged with purchasing for the group is outside the direct control of the CPPA and its enterprise, and this may introduce principal-agent pathologies that do not appear to be present in the Buyer or Piggyback paradigms.

Leaving the issue of pathologies aside for the moment, the Broker model appears to imply a potential for issues which might emanate from the contractual flow of goods and services, issues of ownership,

FIGURE 4
Broker Model of Cooperative Public Purchasing



and how the purchaser obtains title of the goods and services. Dependent upon the role of the Broker in these activities, the consequences could be momentous. For example, if the Broker takes title first and acts as an agent of the PCAs, in a very real sense, the Broker acts as an indirect agent by selling to the PCAs

In contrast, under a framework of direct agency, the PCAs who are not the Broker contract directly with the supplier, but on the basis of prices, specifications, and terms negotiated by the Broker. This means that the PCAs contract with, and take title directly from, the supply source. Under these circumstances, the Broker merely acts as a buying agent for parties to the cooperative agreements and to cover its costs, may obtain a commission for its services which might cover the staff and operations budget of the Broker and the outlays associated with the cooperative public purchasing agreement (CPPA) and its enterprise.[14]

Although these considerations may also be present in the Buyer and Piggyback models, the Broker system highlights the options available and their potential consequences for adopting one method of purchasing over another. The Broker model also highlights other issues as well. For example, it is not self-evident why a government entity would join a CPPA that utilizes a Broker. Perhaps the answer may be that the CPPA can provide other benefits to its affiliates beyond lowest price i.e. expediency, political neutrality, and networking. Indeed, even a private for-profit Broker may be a powerful organization which through experience, can leverage the purchasing power of its customer CPPAs. Moreover, it is the private Broker that nurtures vendor relationships, provides expertise, streamlines the bidding and purchasing process, and probably provides a single contract to its customers. If these obligations were to be carried out under Buyer or Piggyback conditions, the purpose of the CPPA (networking) may in fact be mitigated. For these and other reasons, CPPAs that utilize a Broker can be justified on defensible grounds, but only when there is a clear goal that is being met. That goal can be delineated by agency theory.

Indeed, there appears to be an example of the Broker model in Novation, LLC., which is a supply services company to the health care industry based in Irving, Texas. Novation (http://novationco.com/mn_customers) has more than 2,400 "members" who include among others, an alliance of not-for-profit hospitals and academic health centers. Another example of this model might be U.S. Communities. U.S. Communities bills itself as a "Purchasing Alliance" that is a nonprofit public benefit corporation whose sponsors include various associations and extra-governmental organizations like the National Institute of Governmental Purchasing, National Association of Counties, the National League of Cities, and the United States Conference of Mayors (http://www.uscommunities.org). As a broker, U.S. Communities acts as an agent for the particular state and local governments purchasing through the alliance, yet, the state and local governments have no direct impact on how things are purchased through the alliance.

DEFINITION OF COOPERATIVE PUBLIC PURCHASING

Having reviewed the three agency models depicted in Figures 2 through 4, one may be left wondering, what exactly is a public cooperative? Do the PCAs, the CPPA, the CPPA enterprise, the Broker, the purchaser, or all of these together comprise a public purchasing cooperative arena? Can one or more elements be excluded while still remaining true to the concept of a public purchasing cooperative arrangement? Conceptually, Figures 2, 3, and 4 offer some insight to answer these questions by specifying the chain of agency linkages from PCAs to the final purchaser for the CPPA. It is clear from the three models that in general, the common elements of all public purchasing cooperatives are the PCAs and the CPPA, but the departures between the models lead to the following comprehensive definition of a public purchasing cooperative as a public purchasing cooperative consists of a collaborative agreement between two or more governmental entities that funnel organizational and monetary resources into a purchasing syndicate which guides, regulates, and sanctions the conduct of the cooperative purchasing agent. Membership may be voluntary or compulsory based upon the horizontal or vertical relationship of the affiliates.

To many this may be seen as merely re-describing *examples* of public cooperatives, especially in Figures 2 through 4. However, this is not the case for a very substantial reason.

Consider that knowledge is generated either through inductive or deductive processes. Because of this, some readers may validly believe that the term "cooperative public purchasing" should be clearly conceptualized early in any research endeavor, but that would be committing what has been claimed from the outset, namely, both *observation and theory* should drive the understanding of cooperative public purchasing. To rely only on observation is to remain normatively prescriptive without rational or logical justification. Thus, agency theory is the metaphorical glue that holds together the elements of cooperative purchasing by offering a framework for analysis, interpretation, and definitional clarification.

SUMMARY AND DISCUSSION

Each of the models, especially Figure 1, treats some elements as "black boxes," e.g. government entities are comprised of the purchasing departments and staffed by procurement officials. Using both inductive and deductive means, this article identifies crucial concepts and how they relate by presenting three models of cooperative public purchasing. Agency theory provides a framework to model the stakeholders in the cooperative public purchasing process, as well as introducing key terms that can be used by practitioners and academics alike. It is hoped that the models outlined here will lay the groundwork for future theoretical work which might lead to a greater understanding of incentives for potential gains and hazards of engaging in specific types of cooperative public purchasing arrangements. As a result, cost-benefit analyses will be enhanced leading to more effective long-range strategic planning by purchasers.

Developing a theory in cooperative public purchasing is important for several reasons. The theory elaborated here conceives of purchasing in a new and different way which can explain some counterintuitive incentives faced by public purchasing stakeholders. Because of this, theory can help to predict the behavior of stakeholders in terms that make rational assessment easier. In turn, this will clarify the needs and goals of government entities in a way that encourages governments and other public organizations to design and adopt the most beneficial types of cooperative agreements given their economic and political needs in purchasing. Obviously, this leads to a research agenda which seeks to untangle under what circumstances the models outlined here are useful.

One of the most surprising findings of this study was the realization that there are multiple layers of agency involved in any public purchase. The existence of these layers of agency might explain why public purchasers often feel pulled in different directions by trying to serve multiple masters. Unlike purchasers found in the private sector, public purchasers face a myriad of divided loyalties based upon the presence of both immediate and extended principals whose goals are often in conflict.[15] Sensing that they have divided loyalties, they feel caught between competing demands for their time and efforts, yet they do not fully understand their predicament nor do they have a solution to this malaise. One should remember that in the private sector, there is one over-riding goal, and that is to maximize profit. However, in the public sphere, no such fundamental objective is clear in every case. To take but one example, “good government” can mean many different things to different principals, and to a great extent, the ambiguity of how to operationalize “good government” in public purchasing remains elusive. The current article presents a theory that brings about a greater awareness of this situation so that purchasers might become more efficient in serving their stakeholders in and out of government.

Applying agency theory to CPP allows one to see the potential for adverse selection in several areas. Returning to Figure 1, due to informational asymmetries, the wrong candidates can be elected to public office due to the rational ignorance of voters and the superficial campaign techniques so prevalent today (Prier, 2003). In turn, they may advocate the wrong procurement policies. It may be that procurement officials with the wrong sets of skills to knowledgeably engage in CPP populate purchasing divisions. If they have the right skill sets, they may be utilizing the wrong CPP for the objectives of their principals. All of these instances flow from an understanding of adverse selection embedded in agency theory.

Agency theory may also hold promise for modeling intergovernmental contracting, which is the leveraging of assets by cooperating public agencies to provide goods and services to constituent end-users. Because a fee is paid by one government to another for the provision of services, it might be considered a form of cooperative purchasing (possibly a Piggyback). If this is the case, what are the advantages and traps of thinking about intergovernmental contracting as a cooperative agreement? Furthermore, what are the legal and ethical implications for structuring a cooperative agreement in this way?

There are other questions evoked by this study. What are the motivations for joining cooperative public purchasing agreements? Is it merely economies of scale, or is it the opportunities to network or streamline administrative functions? Is there an impact on individual member affiliates if the agreement allows members to choose goods and services à la carte? Furthermore, are specific cooperative agreements better for some entities than others, or is the choice of appropriate agreements contingent upon individual circumstances? Indeed, what characterizes a good cooperative, and under what circumstances are various cooperative models functionally appropriate? In practice, are principal-agent pathologies endemic to one model and not others? If one believes that cooperative arrangements should follow many of the principles suggested by both the International Association of Cooperatives and the National Business Cooperative Association, there are potential violations of these principles in practice, and they may be justified, because there may be reasons for exceptions. For example, although cooperative enterprises are believed to require ownership by independent and autonomous members with membership being open and voluntary, vertical relationships among PCAs may purposefully violate these expectations, depending on the goals of each PCA.[16]

The schema presented here presses entities to decipher their immediate and long-term goals. Consider that at this juncture, it is unclear whether joining a cooperative serves an operational or strategic function, or both, and without a substantive rule to judge the validity of any of these assertions, one cannot identify the differences between behaviors that are operational or strategic. This article is a first step in that direction.

It should be remembered that testable hypotheses are what are needed to determine if purchasers' decisions are aligned with policymakers' desires, and without a theory on which to base the propositions, practitioners and academics are left to random claims of descriptive tendencies. Whether or not the theory and models offered here are valuable is left to the reader to decide. However, they are proffered with the strong conviction that to continue the trend toward cooperative purchasing without theoretical direction is tantamount to making purchasing decisions based on blind faith.

NOTES

1. The discussion here relies heavily on the review articles by Kiser (1999) and Petersen (1993).
2. Although the literature has devoted substantial effort in understanding transaction cost economics (see Williamson, 1985), the focus in the present analysis remains concentrated on the principal-agent perspective (e.g. Milgrom and Roberts, 1992, esp. Chs. 5-6).
3. Moral hazard refers to the principal's increased risk of suffering negative consequences resulting from problematical behavior of the agent. It is present because the agent may benefit from the outcome or will not suffer the adverse consequences of her own behavior.
4. Although the principal may be able to observe the agent's action

in some circumstances, the observation typically requires costly monitoring. Monitoring might obtain information on the agent's ability, carefulness, laziness, reliability, and trustworthiness, to name a few characteristics.

5. For some organizational pathologies in the purchasing supply chain, see Mishra, Heide and Cort (1998).
6. It may be that economic efficiency empirically swamps all other motivations for using cooperatives in the public sector, but without theory-driven hypotheses to test such a claim, it is merely conjecture.
7. For a rebuttal of diminishing democratic principles within public entrepreneurship, see Bellone and Goerl (1993; 1992).
8. Hendrick (1997, p. 7) defines a purchasing consortium as "two or more independent organizations that join together, either formally or informally, or through an independent third party, for the purpose of combining their individual requirements for purchased materials, services and capital goods."
9. Note that purchasing associations themselves can form a separate organization for cooperative purchasing. For example, educational cooperatives and political units such as counties.
10. The node defined as the purchasing department could also be the agency allowed to purchase in a decentralized structure, but for the purpose of exposition, the analysis is simplified.
11. The vertical possibility is portrayed in all figures presented here.
12. For clarification purposes, the discussion focuses on the issues surrounding vertical agreements only.
13. The GSA is actually a vertical agreement because all of the parties (PCAs) to the agreement are not between the same caste of legal entities. In other words, because the GSA allows both localities and their states, and because the state PCA has the unilateral ability to create and abolish the locality PCA, this is a vertical CPPA.
14. This would be analogous to outsourcing the purchasing function.
15. See Prier (2003) for an extended critique of divided loyalties.
16. For example, a state may require a locality to join and use a

particular CPPA in order to get best price. In this case, other local considerations are trumped by the requirement.

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