EasyChair Preprint

№ 1160

A Framework for Understanding Sustainable Public Purchasing

Nicole Darnall, Lily Hsueh and Stuart Bretschneider

June 10, 2019

A Framework for Understanding Sustainable Public Purchasing

Nicole Darnall
School of Public Affairs, School of Sustainability
Arizona State University
411 N Central Avenue, Suite 400, Mailcode 3720
Phoenix AZ 85004-0687
+1 602.496.0445
ndarnall@asu.edu

Lily Hsueh
School of Public Affairs
Arizona State University
411 N Central Avenue, Suite 400, Mailcode 3720
Phoenix AZ 85004-0687
+1 602.496.0450
lyhsueh@asu.edu

Stuart Bretschneider
School of Public Affairs
Arizona State University
411 N Central Avenue, Suite 400, Mailcode 3720
Phoenix AZ 85004-0687
+1 602.496.0450
stuart.bretschneider@asu.edu

A Framework for Understanding Sustainable Public Purchasing

ABSTRACT

Increasing scholarship within the business and public management research literatures identifies the significant promise that sustainable public purchasing (SPP) has for reducing negative environmental impacts throughout the supply chain. While these studies identify the merits and limitations of SPP adoption and the mechanics of SPP implementation, a growing number of researchers identify the need for a broader conceptual framework of the factors related to SPP adoption. This paper responds to this need by developing a framework of SPP adoption that consists of three theoretical constructs – capacity, disposition, and stakeholders. It discusses the multiple dimensions of each construct and how the overall framework is nested within the broader economic setting. The constructs are the basis for research propositions that inform a broader research agenda for understanding the important issue of sustainable purchasing in the public sector.

Key words: sustainable public purchasing, procurement, framework, capacity, disposition, stakeholders

INTRODUCTION

In the United States (U.S.), public sector purchases create a carbon footprint nine times that of buildings and vehicle fleets combined (U.S. General Services Administration, 2014). These purchases account for 15.6 percent of U.S. gross domestic product (GDP). Worldwide, public sector spending accounts for 17.1 percent of global GDP (World Bank Group, 2017). Because of the public sector's significant carbon footprint and its substantial purchasing power, international organizations such as the United Nations (UNEP, 2013) and the Organisation for Economic Co-operation and Development (OECD, 2008) are promoting sustainable public purchasing (SPP) to encourage the public sector to purchase products and services that have fewer negative impacts to the natural environment and to help stimulate the global production of green products and services (Li and Geiser, 2005; UNEP, 2013). Many national governments have responded by endorsing SPP, and local governments are following suit (Darnall et al., 2017b). However, despite the widespread promotion of SPP, we have limited understanding of the conceptual factors related to SPP adoption (Preuss, 2009; Walker and Brammer, 2009; Amann et al., 2014).

The gap in our understanding of SPP adoption spans two related fields. The first examines sustainable purchasing in the private sector, where scholars have examined how ethical or social factors are related to private sector purchasing (Carter, 2000). Other supply chain management scholars have discussed the merits and limitations of SPP more specifically (Preuss, 2007, 2009; Caldwell, et al., 2005; Testa et al., 2012), as well as the facilitators and barriers of SPP implementation (Walker and Brammer 2007; Testa et al., 2016; Walker et al., 2008) and the processes by which SPP is implemented (Walker and Brammer, 2012).

The second research field relates to public purchasing more broadly. Scholars within this area have tended to focus on issues related to contract management (Brown, Potoski and Van Slyke, 2016; Kauppi and Van Raaij, 2014), collaborative contracting (Walker et al., 2013), purchasing groups (Schotanus et al., 2011) and the tendering process (Bovaird, 2006). Other public purchasing studies have examined how public sector purchasing can co-produce societal benefits (e.g., Bovaird, 2006) such as innovations in public service provision (Edler and Georghiou, 2007; Aschhoff and Sofka, 2009) or economic development (Nijaki and Worrel, 2012).

What is missing across both literatures is an understanding of the theoretical factors motivating public sector organizations to redirect their purchasing priorities towards the purchase of more sustainable products (Preuss, 2009; Walker and Brammer, 2009; Cheng et al., 2017). Developing such a conceptual framework is important for several reasons. First, compared to the private sector, the public sector has been slow to adopt sustainable purchasing (Bratt et al., 2013; Centre for European Policy Studies, 2012; Walker et al., 2008). This may be due to a lack of flexibility and profit motivation which changes the nature of sustainable purchasing in the public sector. The public sector also has more competing priorities for how it uses purchasing because, in addition to pursuing fiscal responsibility, the public sector uses purchasing as a mechanism to promote social equity and economic development (McCrudden, 2004). Understanding the theoretical aspects of SPP adoption may, therefore, help identify critical factors that facilitate or impede the public sectors' SPP adoption. Second, developing a conceptual framework of SPP creates a much needed foundation for future empirical examination of SPP adoption, the SPP implementation process, and SPP outcomes.

To address these concerns, this paper draws on prior research in business and public management. It responds to the expressed need for more theoretical investigations of SPP (e.g., Preuss, 2009; Walker and Brammer, 2009; Amann et al., 2014) by developing a conceptual framework of SPP adoption. It elaborates on three general constructs related to public sector decisions to adopt SPP: capacity, disposition, and stakeholders. Each of these constructs is constrained or facilitated by the economic setting. They are the basis for research propositions that inform a broader research agenda for understanding the important issue of public sector sustainable purchasing.

SUSTAINABLE PUBLIC PURCHASING

Public purchasing refers to the acquisition of goods and services by public sector organizations (Uyarra and Flanagan, 2010; Brammer and Walker, 2011). More specifically, it is the process by which governments and public authorities, purchase services and goods and materials (Aschhoff and Sofka, 2009). Purchasing is a key economic activity of the public sector (Thai, 2001; Aschhoff and Sofka, 2009), accounting for about 29 percent of the public sector's total general expenditures (OECD, 2015) and between 45 – 65 percent of this sector's discretionary budgets (Bratt et al., 2013). Given its total volume, public purchasing is the largest single marketplace across the globe (World Bank Group, 2016).

Some public sector actors are leveraging their purchases to simultaneously meet their broader sustainability objectives. SPP consists of formal and informal public sector rules and structures that introduce environmental criteria into public sector purchasing processes (Burchard-Dziubinska and Jakubiec, 2012). Environmental criteria might include reducing energy and water consumption, greenhouse gas emissions, solid waste, and other impacts. Also known as "eco," "green," "environmental," "environmentally responsible" and "environmentally friendly" public purchasing (e.g., Amann et al., 2014; Bolton, 2008; Li and Geiser, 2005; Walker and Brammer, 2009), formal SPP is expressed in formal policies such as ordinances, executive orders, resolutions, and administrative directives. Less formally, SPP includes approaches such as adding sustainable purchasing requirements to existing sustainability plans or energy conservation policies (Darnall et al., 2018).

SPP has the potential to significantly reduce the environmental impacts of public sector organizations and improve operational efficiencies. For instance, when the City of Phoenix purchased 100,000 energy-efficient streetlights, replacing its existing inefficient bulbs, it cut its carbon emissions by 60 percent (City of Phoenix, 2017a). The purchase also is saving taxpayers

up to $22 million over 12 years due to energy savings and reduced maintenance costs (City of Phoenix, 2017b). Similar efficiencies can be gained by purchasing products that conserve water or chemical cleaning products that are less toxic and therefore reduce human health impacts and their associated social costs.

Beyond the public organization, SPP can also create significant market incentives for companies that wish to do business with the public sector by encouraging companies to incorporate environmental principles into their daily business routines and reduce their environmental impacts (Case, 2004). These incentives extend to the supply chains (Bratt et al., 2013). For instance, by encouraging their first-tier suppliers to produce and deliver greener products and services, an estimated 40 percent of these first-tier suppliers will, in turn, assess the environmental activities of the organizations that supply them (Arimura, Darnall and Katayama, 2011). SPP, therefore, has the potential to encourage substantial green product innovations (Burchard-Dziubinska and Jakubiec, 2012) and drive the corporate sustainability agenda (Bratt et al., 2013).

In spite of its importance, both research in business management and the public management has had little to say about the theoretical reasons why public sector organizations adopt SPP.

SUSTAINABLE PURCHASING RESEARCH

Within the business management literature, scholars have given significant attention to the importance of sustainable purchasing, or the pursuit of environmental and social objectives through purchasing, especially within the context of supply chain management (Walker and Brammer, 2011; Linton et al., 2007). These researchers suggest that pressures from regulatory stakeholders are encouraging firms to make purchasing decisions that minimize the environmental impacts of supply chains (Aschhoff and Sofka, 2009; Chicksand et al., 2012) from the initial processing of raw materials to customer use (Linton et al., 2007). These studies typically identify how external stakeholders, such as market participants (e.g., Zsidisin and Ellram, 2001; Linton et al., 2007; Seuring and Müller, 2008), might influence sustainable purchasing in organizations (Seuring and Müller, 2008).

Corporate social responsibility research has also considered the broader societal impacts of private sector purchasing decisions, including environmental sustainability. These studies have assessed how purchasing is related to corporate social responsibility (Carter and Jennings, 2004, such as purchasing fair trade products (Carter, 2005), purchasing from small businesses (Walker and Preuss, 2008), and international buyer-supplier relationships (Carter, 2000). For instance, Carter (2005) identifies the importance of leadership, organization size, and government regulation as potential motivators for corporate social responsibility in purchasing. Sustainable purchasing is one mechanism through which organizations might pursue and fulfill these social objectives.

Research examining SPP more directly is limited to discussing the virtues and limitations of SPP (Preuss, 2007, 2009; Caldwell et al., 2005; Testa et al., 2012), the mechanics of implementing SPP (Walker and Brammer, 2012), and the facilitators and barriers of policy implementation (Walker and Brammer 2007; Testa et al., 2016; Walker et al., 2008). Across these studies, internal stakeholders generally are not discussed, nor is the process by which organizations shape their internal disposition and capacities in response to stakeholder pressures. There is also a notable deficit in our knowledge related to the conceptual understandings of SPP adoption (Walker and Brammer 2007; Preuss 2009; Amann et al., 2014; Testa, 2012, 2016).

Recognizing the importance of sustainability in purchasing decisions, several scholars have developed conceptual frameworks of green supply chain management in private business (e.g., Sarkis, 2003; Walker et al., 2008; Linton et al., 2007; Seuring and Müller, 2008). However, these models are less applicable to the public sector because the private sector typically has fewer competing objectives and constraints on purchasing processes. As a consequence, the private sector tends to be more flexible towards changing routines, procedures and purchasing activities (Bozeman, 1987; Rainey et al., 1976). Private sector firms can source suppliers at will and often award direct contracts without a competitive bidding process (Tadelis 2012). Since private sector firms are guided by profit motives, they develop institutional policies that help achieve their business-focused goals. For instance, the pursuit of social and environmental objectives might serve the strategic purpose of reducing costs, while also enhancing external recognition and branding (e.g., Carroll and Shabana, 2010; Salzmann et al., 2005).

By contrast, public sector purchasing is highly regulated (Thai, 2001). As stewards of public resources, public agencies operate in a context characterized by greater external demands from stakeholders for integrity and accountability in their purchasing processes (Telgen et al., 2007). Greater oversight is designed to protect public sector purchasing from being influenced politically and to avoid fraud or corruption in tax dollar expenditures. Additionally, given the scale of public sector expenditures, other social, economic, and political objectives are simultaneously pursued through procurement policies and regulations (McCrudden 2004). For instance, public purchasing can be an effective means to stimulate private-sector innovation (Edler and Georghiou, 2007; Aschhoff and Sofka, 2009; Rolfstam, 2009; Edquist and Zabala-Iturriagagoitia, 2012; Wilkinson et al., 2001) and encourage local economic development (Walker and Brammer 2011; Wilkinson et al., 2001) via purchasing from locally owned businesses (Nijaki and Worrel, 2012). Public sector organizations also commonly have policies that give preference in purchasing decisions to minority-owned businesses and small businesses (Loader, 2007; Patil, 2017; Walker and Preuss, 2008). Pursuing these multifaceted objectives increases complexity, oversight, and stakeholder participation in the policies that guide public sector purchasing decisions.

With respect to purchasing in public management research, scholars have examined the determinants of contracting out public services to the private sector (e.g., Boyne 1998; Brown and Potoski 2003; O'Toole and Meier, 2004), the management of contracts (Brown and Potoski, 2006; Brown, Potoski and Van Slyke, 2006), the maintenance of markets (Johnson and Girth, 2012), the consequences of contracting out on service quality (O'Toole & Meier 2004), and accountability in contracting (Romzek & Johnston, 2005). Another stream of research has considered the effects of demand-side policies, including procurement policies that promote purchasing from minority-owned, women-owned or veteran-owned businesses, policies that stimulate local economic activity or benefit local small businesses, and policies pursuing other objectives, such as environmental sustainability (Brammer & Walker, 2011; Coggburn & Rahm, 2005; McCrudden, 2004; Resh & Marvel, 2012; Rothwell, 1984; Smith & Fernandez, 2010; Thai, 2001).

Like the business management research, studies assessing public organizations' demand-side policies focus on how adoption barriers can be reduced and implementation can be improved (Nijaki and Worrel, 2012; Loader, 2007; Walker and Preuss, 2008). As yet, scholars have not assessed the broader conceptual factors leading to the public sector redirecting its purchasing priorities towards the purchase of more sustainable products (Preuss, 2009; Walker and Brammer, 2009; Cheng et al., 2017). Walker and Brammer (2007) begin to explore the

factors leading to SPP adoption in their working paper. The authors identify policy familiarity, efficiencies and cost, incentives, and suppliers as reasons for the public sector to adopt SPP. However, these variables are likely nested within a broader set of constructs (capacity, organization disposition and stakeholders) that merit consideration.

A FRAMEWORK OF SUSTAINABLE PUBLIC PURCHASING ADOPTION

Whereas the deficit in the business management literature has been a limited focus on *public sector* purchasing to achieve sustainability objectives, the deficit within the public management research has been a limited focus on *sustainable* purchasing. At this nexus, researchers acknowledge the need for more theoretical and empirical investigation of SPP (e.g., Preuss, 2009; Walker and Brammer, 2009; Amann et al., 2014; Cheng et al., 2017) beyond identifying its importance or the mechanics of implementation.

Developing a conceptual framework for understanding SPP is important because, in general, the public sector – at all levels – has been slow to adopt SPP (Bratt et al., 2013; Centre for European Policy Studies, 2012; Darnall et al., 2017b). A theoretical consideration of SPP adoption can, therefore, reveal the critical factors that facilitate and impede the public sectors' pursuit of SPP adoption. Additionally, a theoretical framework of SPP can offer critical footing for future empirical assessments of SPP adoption, implementation processes, and outcomes.

We address these concerns by developing a theoretical framework of SPP adoption. The framework focuses on three primary constructs – capacity, disposition, and stakeholders (see Figure 1). We suggest that capacity is directly related to SPP adoption, but is indirectly shaped by the organization's disposition and stakeholder pressures. Further, each of these constructs is nested within the broader economic setting.

—INSERT FIGURE 1 ABOUT HERE—

Capacity

Capacity refers to a set of organizational attributes that help or enable a public organization to act (Eisinger, 2002). It is a function of the organization's ability to engage its employees in productive ways. At least four aspects of organizational capacity are likely to affect SPP adoption: internal capabilities, information capacity, resources, and collaborative capacity. Together, these aspects help public organizations manage the changes required when adopting an SPP (Hsueh et al., 2017).

Internal capabilities are premised on knowledge-based practices that are socially complex and less tangible (Barney, 1991; Wernerfelt, 1984). At the organization level, they are path dependent because they are a function of the organization's unique learning and actions that accrue over time (Barney, 1991; Feldman and Rafaeli, 2002). They are also human-based in that they involve complex patterns of coordination among and between people and other resources (Grant, 1991). Perfecting such coordination requires learning through repetition and enacting routines and procedures (Feldman, 2000; Feldmand and Pentland, 2003). These knowledge-based practices help organizations formalize their commitment to a particular issue (Rondinelli and Vastag, 2000).

When institutionalized, these internal capabilities become visible by formalized structures, such as procedures and/or processes that are manifested in complementary policies and initiatives (Darnall and Edwards, 2006). They can serve as the foundation for future initiatives that help organizations undertake a strategic, or stepwise approach towards principled long-term objectives (Bratt et al., 2013).

Related to sustainability issues, public organizations that have expertise with basic pollution prevention, energy conservation, or recycling policies have developed knowledge-based

competencies around specific sustainability concerns. An organization that has experience with these policies and initiatives has developed the capacity to reduce waste across different multiple departments and settings (USEPA, 2001). Expertise with complementary policies and practices necessarily means that the organization coordinates employees around common issues and encourages them to share their tacit knowledge of the organization's internal operations in order to minimize impact to the natural environment (Hart, 1995). These organizations are more likely to have invested in training their employees and can more competently leverage their skills and expertise in a way that helps them achieve organizational expectations. They also have greater experience with measuring organizational progress towards achieving certain environmental objectives and, therefore, can apply their skills more effortlessly towards the adoption of other forms of sustainability initiatives (Darnall and Edwards, 2006).

For instance, a public organization that has invested in training its employees in pollution prevention is more likely to see how SPP may help achieve its broader environmental goals. These organizations may also be more likely to recognize how SPP can reduce pollution throughout the supply chain and how it can lead to environmental innovations within the private sector.

Information capacity helps public organizations answer questions and solve problems relevant to their mission by creating a means to institutionalize the collection, management, and analysis of data (Mergel and Bretschneider, 2013; Tolbert, Mossberger and McNeal 2008). It enables employees to perform complex tasks, such as handling large amounts of information, performing complex calculations, and controlling many simultaneous processes (Silver, 1995). Organizations that possess information capacity allocate resources towards planning and acting, with the objective of improving decision making. It is achieved by the use of information systems and information access that help organizations obtain and make use of data and information effectively. Organizations with greater information capacity are in a position to make better decisions that improve existing projects, programs, and initiatives and consider new policies that can achieve organizational missions (Huber, 1990).

Related to sustainable purchasing, information capacity can help public organizations assimilate knowledge about the sustainability of products and services, including innovations and potential substitute products and related research and technologies. By using information systems and having access to environmental information about the impact of certain products, purchasing officers can more effectively consider the integrated and complex sustainability aspects of their purchasing decisions. Other types of information capacity may be less systems-based and consist of product lists of preferred products and services or mechanisms that help organizations track product information in the purchasing process (Darnall et al., 2017b). For these reasons, organizations with access to more environmental information are more likely to understand how their purchasing decisions relate to specific environmental outcomes and may be more likely to adopt SPP.

Resources are the physical assets that the public organization controls (Amit and Schoemaker, 1993; Barney, 1991). They include financial resources, property and equipment (Amit and Schoemaker, 1993). Resources help organizations establish a culture for adopting a policy and create a capacity for organizations to follow through with policy implementation (Nakamura et al. 2001). Within the public sector, resources generally derive internally via tax revenue. However, they also can be generated from external sources such as grants (Darnall and Edwards, 2006). Related to sustainable purchasing, public organizations are more likely to adopt an SPP if they have sufficient resources to support it. For instance, a city may apply for grants or

technical assistance at the state or federal level to help it develop its pollution prevention capacity. By drawing on these external resources, organizations with otherwise lagging capabilities may be more likely to adopt policies, such as SPP, that otherwise may be too costly.

Collaborative capacity refers to a public organization's openness to partner (Amann et al., 2014) with internal stakeholders such as other departments, or with external stakeholders to address a particular concern. Such capacity requires unique skills to manage the collaborative process, to work in teams, and to communicate with diverse groups (Caldwell et al., 2005). For instance, related to purchasing, in an effort to appear unbiased, the public sector has traditionally sought to keep an arms-length distance when addressing private sector stakeholder concerns (Erridge and Nondi, 1994; Caldwell et al., 2005). However, when developing SPP, collaboration is often required (Preuss, 2007; Darnall et al., 2017a) to address market limitations related to underdeveloped markets for green products (Caldwell et al., 2005). Collaboration also helps organizations gain access to idiosyncratic resources (Hagedoorn, 1993) that can be used to develop valuable knowledge-related competencies (Das and Teng, 2000; Lin and Darnall, 2015). In other instances, collaboration can increase organizational learning (Gulati, 1998), which poises collaborators to collectively examine emerging technologies and trends in product markets (Lin and Darnall, 2010). All of these factors may facilitate the adoption of SPP because they can help the public sector identify new alternatives for reducing environmental impacts through purchasing.

Proposition 1: Public sector organizations with greater capacity (internal capabilities, information capacity, resources, collaborative capacity) to address environmental sustainability concerns are more likely to adopt SPP.

Disposition

A public organization's disposition consists of internal systems that provide a motivational basis for developing and shaping its capacity. It is characterized by informal norms and routines such as organization values and culture. Dispositions also consist of formal statements and guidance documents that include organization values, culture, and missions and visions.

Values. Public organizations exist in settings that are characterized by a myriad of different and sometimes competing values (Jørgensen and Bozeman 2007) that include effectiveness, equality of treatment, and access. Organizations balance and pursue what they believe is the optimal mix of public values (Brown et al., 2006). These values guide an organization's behaviors and activities in a way that shapes its overall capacity. For instance, organizations with values that emphasize intergenerational equity, social responsibility, and environmental sustainability are more likely to develop organizational capacities to address these concerns by enhancing their internal capabilities and allocating resources that focus on sustainability concerns. They are also more likely improve individual capacity by way of helping employees obtain complementary trainings that develop skills and knowledge to address sustainability issues. These trainings might involve attending workshops or conferences related to integrating sustainability into the purchasing process. By virtue of having this knowledge, employees may be more supportive of SPP adoption.

Culture is a pattern of basic assumptions and shared understandings that a group develops as it copes with problems of external adaptation and internal integration (Schein, 1990). When these assumptions are deemed valid, they are taught to new group members as a means of thinking about different problems (Schein, 1990). Some organizational cultures support entrepreneurial activities among employees more than others in order to better respond to the citizens they serve and to whom they are held accountable (Kim 2010). These cultures encourage innovativeness,

risk taking, and proactiveness (e.g., Covin and Slevin, 1991; Kim, 2010; Moris and Jones, 1999). Innovativeness reflects an organization's tendency to engage in and support new ideas, as well as the experimentation and creative processes that may result in improved, technologies, or services (Lumpkin and Dess 1996). Organizational risk taking is contextually dependent and might mean financial, social, or personal risks but, regardless of the context, there is some level of uncertainty related to the new activity and a particular outcome (Lumpkin and Dess, 1996). It encourages employees to feel empowered to share ideas, take risks, and break routines (Rule and Irwin 1998; Colvin and Slevin 1991; Moon 1998). Proactive cultures anticipate future needs or changes (Lumpkin and Dess 1996). These cultures reward problem-solving which encourages employees' willingness to experiment and anticipate strategic opportunities. They also offer employees more discretion, or the freedom to decide what should be done in a particular situation and to act on that decision (Hambrick and Frankelstein, 1987). Related to sustainability concerns, entrepreneurial cultures allow employees to experiment with addressing broader social issues such as sustainability. They offer discretion to employees to change existing routines to break routines to find solutions to existing problems.

Other organization cultures encourage collaboration which can lead to higher-order organizational learning (Christmann, 2000) that facilitates more forward thinking in addressing complex problems (Lin and Darnall, 2015). Collaborative cultures promote innovative ideas because of the unique expertise that each individual possesses. They encourage shifts in organization mindsets toward the adoption of innovative models or technologies to proactively address environmental concerns (Lin and Darnall, 2015) by expanding capacities towards reducing their environmental impacts which may lead to SPP adoption.

For instance, a city that has an organizational culture that encourages entrepreneurship and innovation related to pollution prevention can more easily experiment with different ways (and with different partners) to reduce pollution throughout the city. It may, therefore, expand its internal capacities around pollution prevention such that it can more fully assess the environmental impacts of purchasing, thus leading to SPP adoption.

Mission and vision statements are explicit statements of organizational values and serve as the starting point for the formalization of an organization's objectives, goals, and strategic plans. While mission statements may take on different forms and serve different organizational roles (Baetz and Bart, 1996), they are commonly identified as formal statements of an organization's central purpose. Since public agencies serve multiple constituencies and fulfill sometimes conflicting public purposes, mission statements tend to offer broad direction about maintaining, improving, or enhancing some aspect of community welfare (Weiss and Piderit, 1999). Similarly, vision statements reflect an organization's desired future while defining its basic philosophy and organizational values (Hart, 1992).

Both missions and vision statements are formal assertions that serve as a basis for organizational planning and the development of capacities that move them towards their desired future and meet their overarching objectives. Public organizations frequently adopt formal missions and visions in strategic planning processes that guide agency activities and capacity building (Moore 2001). Formal statements create a basis for organizations to be held accountable by political principals and external stakeholders to fulfill their objectives (Boyne and Chen 2007; Brignall and Modell 2000). We argue that public agencies with visions and missions (or other formal statements) reflecting a prioritization of environmental sustainability within their community or organization are therefore more likely to build organizational capacities to achieve them. For instance, organizations with visions to improve their environmental outcomes are

likely to establish formal environmental performance targets. One way to achieve them is to develop information systems to track the environmental impacts of different activities. Similarly, they may also allocate more resources to address environmental concerns or engage other departments or cities in sharing information about best environmental management practices. Given the role of missions and values in setting organizational priorities, we believe that incorporating sustainability into formal statements of mission and vision can shift an organization's disposition in a way that it develops capacities to address environmental concerns.

Proposition 2: Public sector organizations with dispositions (values, culture, and missions and vision statements) that are more favorable towards addressing sustainability are more likely to develop the capacities required to address environmental concerns.

Stakeholders

Public sector organizations are embedded in a network of stakeholder relationships. Stakeholders are the entities that affect or are affected by an organization (Freeman, 1984) and that have the capacity to shape organizational outcomes (Mintzberg 1983). They are both internal and external to the organization and can mobilize public sentiment, alter accepted norms and pressure organizations to shift their operational priorities (Hoffman, 2000). Organizations respond to stakeholder pressures in an effort to increase their overall social legitimacy (Suchman, 1995). Legitimate organizations are those whose actions are seen or presumed to be desirable or appropriate within some socially constructed system of norms, values, beliefs and definitions (Suchman, 1995).

In response to stakeholder pressures for greater sustainability action, organizations often shift their disposition by increasing environmental salience, by changing their performance requirements or targets, or by collaborating more across units. Organizations may also respond by expanding their bureaucratic discretion. Organizations that are more successful at addressing their stakeholders' concerns tend to have stronger standing within their communities and among their broader constituencies (Hoffman, 2000). Stakeholders' are likely to influence organizations' dispositions in a way that make them more (or less) favorable towards developing capacities that support adopting an SPP.

Internal stakeholders consist of collections of individuals who are employed by the organization and who share a common mission (Freeman, 1984). Within a local government, for instance, internal stakeholders may consist of a city department or cross-departmental committee that exert pressure on the entire organization in an effort to increase issue salience. Internal stakeholders may also be champions for a particular cause and help create a vision for change. These individuals are often charged with making decisions, shaping organizational goals, and taking action towards achieving those goals (Mintzberg, 1983). As a consequence, internal stakeholders have a significant influence on an organization's overall disposition.

To address pressures from internal stakeholders, the public sector organizations may change their dispositions by shifting their priorities or operational routines. For instance, within local government, an internal stakeholder champion may be a department or program director. These champions are vital towards ensuring an organization-wide understanding of and commitment to environmental issues (Bansal and Roth, 2000). They also are important catalysts that can change an organization's planning, strategies, goal setting, and bureaucratic discretion (Brammer and Walker, 2011). Internal stakeholders who advocate for sustainability concerns may, therefore, influence an organization's overall disposition in a way that leads to changes in its culture or mission and thus the development of capabilities that make SPP adoption more likely.

External stakeholders are collections of individuals who are not employed by the relevant public sector organization, and who exert their influence (Engel and Orbach, 2008) on public sector organizations in an effort to favor their interests. They tend to have more diverse objectives than internal stakeholders. External stakeholders include supply chain stakeholders, other governments, professional associations, and political interest groups that experience or anticipate experiencing harms/benefits as a result of an organization's action or inaction (Donaldson and Preston, 1995).

Supply chain stakeholders have an economic stake in the public organization's activities and thus seek to protect their financial interests. Supply chain stakeholders consist of all entities that are involved in fulfilling a customer request, including the suppliers, transporters, warehouses, and vendors (Cox, 1999). Related to issues of sustainability, some supply chain stakeholders exert pressure on public sector organizations to take stronger positions on environmental concerns (Kim and Darnall, 2016). These firms have typically invested in environmental activities or product developments that would give them stronger market position if public sector organizations were more proactive in addressing their sustainability concerns (Kim and Darnall, 2016). These pressures are often expressed by way of public statements in favor of sustainability action, congressional testimony, and press releases (Hoffman, 2000). Pressures from supply chain stakeholders also involve informal discussions and meetings with public officials. These pressures may encourage public sector organizations to adjust their internal orientation by prompting them to modify existing routines in order to give sustainability issues more prominence. Doing so may create pathways for information sharing about the environmental impacts of purchasing decisions and encourage SPP adoption.

External stakeholders also include other *government organizations* or different levels of government, such as cities, states, federal agencies, and international governing organizations with a legitimate interest in the relevant organization (Amaral and Magalhães, 2002). Government stakeholders create requirements that pressure organizations to conform using both formal and informal means. Formal approaches involve legal expectations and frameworks. Failure to respond to these expectations can lead to penalties and fines or decreased goodwill (Potoski and Prakash, 2006). For instance, a local government may endure pressure by state governments to adhere to specific environmental expectations to reduce climate impacts. In response, the local government may shift its disposition and expand internal capacities in a way that leads to SPP adoption.

Government stakeholders also use informal approaches, such as nonregulatory approaches and agreements to pressure organizations to conform with expectations (Hsueh and Darnall 2017). For instance, at the international level, the OECD is exerting pressure on member governments to reduce their environmental impacts by way of SPP (OECD 2008). In response, governments may shift their dispositions to reprioritize environmental concerns, adjust performance requirements, and encourage greater bureaucratic discretion to address the OECD's concern. These changes can improve opportunities for public sector organizations to develop capacities that facilitate SPP adoption.

Professional associations include nonprofits whose missions are to enhance professionalization within the public sector by improving leadership, management, innovation and ethics. Professional associations develop guidance, provide networking opportunities, and identify best practices within the profession. Public sector organizations that affiliate with these associations are more likely to follow that association's recommended behaviors to increase legitimacy within their peer networks (Guler et al., 2002). For instance, the International

City/County Management Association (ICMA) is shaping social norms within local government by encouraging cities and counties to become more sustainable. Local governments that are networked with ICMA are more likely than non-members to respond by shifting their environmental goals or by increasing the salience of environmental concerns to align with ICMA expectations. By doing so, these local governments are more strongly poised to shift their dispositions and develop capacities to improve their sustainability.

Political interest groups include environmental groups and other political organizations such as trade associations and other business associations (e.g., Chambers of Commerce). These organizations exert pressure by way of lobbying, letter writing, and media campaigns (Hoffman, 2000) to influence the public sector's disposition around sustainability concerns. Responding to these concerns can increase public sector organizations' legitimacy among these stakeholders. For instance, a business association representing the solar industry may exert pressure on a city to increase its focus on purchasing energy from renewable resources and encourage city residents to do the same. In response, the city may shift its organizational goals to increase the salience of environmental concerns. Doing so may also encourage the public sector to innovate, take risks, break routine or collaborate across units in a way that builds their internal capacity to adopt SPP.

Proposition 3: Pressures from internal and external stakeholders (employees, supply chain actors, other governments, professional associations and political interest groups) to address sustainability concerns are more likely to increase the likelihood that an organization changes its disposition to address those concerns.

Economic Setting

The economic setting consists of broader economic conditions, including recessions and periods of expansion. It influences an organization's capacity, disposition and stakeholder pressures. For instance, related to capacity, during periods of economic recession, a public organization's resources may become constrained which affects its ability to adopt an SPP. However, periods of economic recession may also encourage an organization to emphasize resource efficiencies that come from pollution prevention (Delmas and Pekovic, 2014). Organizations that have stronger sustainability capacities may, therefore, adopt SPP to achieve these efficiency goals.

Similarly, economic settings can affect an organization's disposition. For instance, recessions may cause some organizations to temper their willingness to take risks or break routines, especially towards sustainability concerns (Barnett et al., 2014). Such a disposition may constrain an organization's capacity to adopt an SPP. However, for other organizations, a period of recession may cause them to become more willing to innovate to increase efficiencies (Barnett et al., 2014). Recessions may also encourage collaboration (Paquin et al., 2014) across units to increase efficiencies and address common problems, thus enhancing capacities that facilitate SPP adoption.

Stakeholders may also shift the pressures they exert on public sector organizations depending on the economic setting. For instance, during periods of recession, city employees may be more reticent to pressure their local government to address a particular issue. However, other stakeholders, such as local politicians, may amplify their calls for fiscal conservatism. Both outcomes can shape an organization's disposition in a way that affects their capacity to adopt SPP.

DISCUSSION AND CONCLUSION

While SPP can mitigate environmental impacts throughout the supply chain and encourage businesses to produce more environmentally friendly products, public and business management research has offered a limited theoretical understanding of the factors that are related to SPP

adoption. Addressing this concern is important because a theoretical conceptualization of SPP adoption can offer critical insights about the factors that facilitate and impede the public sectors' pursuit of SPP adoption. Such knowledge may help inform why the public sector has been slow to adopt SPP (Bratt et al., 2013; Centre for European Policy Studies, 2012; Darnall et al., 2017b). Developing a conceptual framework of SPP adoption also provides a much-needed foundation for future empirical research studies that assess SPP implementation processes and outcomes.

This research responds to these concern by developing a conceptual framework of SPP adoption. It offers three contributions to theory and our understanding of SPP. First, this research builds on prior organization scholarship in both the business management and public management literature to offer a parsimonious theoretical model for understanding SPP adoption. It elaborates on three constructs that are related to the public sector's decisions to adopt SPP – capacity, disposition, and stakeholders. These constructs are nested within the broader economic setting and are the basis for three research propositions that inform a broader research agenda for understanding the important issue of sustainable purchasing in the public sector.

Across these three constructs is an inherent complexity that we cannot depict because of practical considerations related to article length. However, future extensions of this research should consider this complexity further. For instance, stakeholders may affect organizational capacity directly because the organization already has a disposition that is in alignment with that capacity. In other instances, an organization's capacity may influence its disposition or stakeholder pressures. While we have not explored these extended relationships, we acknowledge that they likely exist and support additional exploration of them. Additionally, it could be that capacities, dispositional factors and stakeholders other than the ones we describe here may also relate to SPP adoption. We suggest that prospective research should consider this possibility. Our SPP framework provides the foundation and starting point for such an investigation.

The second contribution of this research is that it furthers our understanding of sustainable purchasing described in the business management literature by drawing additional attention to how SPP affects private sector activity. It expands existing supply chain scholarship that has examined the factors that influence private sector purchasing (Carter, 2000). By constructing a conceptual framework of SPP adoption, we address an important gap in the literature related to the fact that public sector organizations are not motivated by profit goals and are generally guided by more complex goals (that sometimes conflict), such as simultaneously pursuing multiple social objectives. These differences and others are likely to influence the reasons why the public sector adopts SPP differently than private sector firms. In constructing our framework, we significantly extend emerging scholarship that discusses the merits and limitations of SPP (Preuss, 2007, 2009; Caldwell, et al., 2005; Testa et al., 2012), the facilitators and barriers of SPP implementation (Walker and Brammer 2007; Testa et al., 2016; Walker et al., 2008), and the mechanics of SPP implementation (Walker and Brammer, 2012).

A third contribution of this research is that our framework expands significantly on existing public management research on procurement, which has tended to focus on issues related to contracting (Brown et al., 2016; Potoski, 2008; Walker et al., 2013; Bovaird, 2006; Schotanus et al, 2011), tendering (Bovaird, 2006; Gelderman et al., 2006), and non-compliance (Kauppi and Van Raaij, 2014). Moreover, it contributes to public management scholarship examining demand-side policies (Nijaki and Worrel, 2012; Loader, 2007; Walker and Preuss, 2008) by considering how public purchasing can serve as a policy lever to improve sustainability outcomes and encourage the private sector innovations of more environmentally friendly

products and services. This issue is especially important given the public sector's significant carbon impact and purchasing power.

Future research would benefit from considering how the relationships developed in our theoretical framework relate to the SPP implementation processes and outcomes. Our belief is that public organization capacity, disposition, and stakeholders are likely related to SPP post-adoption. Our framework provides a basis for understanding these relationships further.

In sum, our research offers important contributions to existing scholarship and responds to the expressed need for more theoretical investigations of SPP (e.g., Preuss, 2009; Walker and Brammer, 2009; Amann et al., 2014; Cheng et al., 2017). It develops a framework that characterizes the factors associated with SPP adoption. This framework serves as a much needed foundation for future research investigating sustainable purchasing in the public sector.

Acknowledgements

We thank the V. Kann Rasmussen Foundation for funding a portion of this research.

References

Amann, M., Roehrich, J.K., Eβig, M., Harland, C. (2014). Driving sustainable supply chain management in the public sector. *Supply Chain Management: An International Journal* 19(3) 351-366.

Amaral, A., Magalhães, A. (2002). The emergent role of external stakeholders in European higher education governance. Amaral, A., Jones, G.A., Karseth, B. (eds.). *Governing Higher Education: National Perspectives on Institutional Governance*. Klüwer Academic Publishers, Dordrecht.

Amit, R., Schoemaker, P. (1993). Strategic assets and organizational rent. *Strategic Management Journal* 14, 33-46.

Arimura, T., Darnall, N., Katayama, H. (2011). Is ISO 14001 a gateway to more advanced voluntary action? The case of green supply chain management. *Journal of Environmental Economics and Management* 61(2), 170-182.

Aschhoff, B., Sofka W. (2009). Innovation on demand: Can public procurement drive market success of innovations? *Research Policy* 38(8), 1235-1247.

Baetz, M. C., Bart, C. K. (1996). Developing mission statements which work. *Long Range Planning* 29(4), 526-533.

Bansal, P., Roth, K. (2000). Why companies go green: a model of ecological responsiveness, *Academy of Management Journal* 43(4), 717-36.

Barnett, M., Darnall, N., Husted, B. (2014). Sustainability in constrained economic times. *Long Range Planning* 48(2), 63-68.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management* 17, 99-120.

Bolton, P. (2008). Protecting the environment through public procurement: The case of South Africa Natural Resources Forum 32, 1-10.

Bovaird, T. 2006. Developing new forms of partnership with the "market" in the procurement of public services. *Public Administration* 84(1), 81-102.

Boyne, G. A., Chen, A. A. (2007). Performance targets and public service improvement. *Journal Of Public Administration Research And Theory* 17(3), 455-477.

Bozeman, B. (1987). *All organizations are public: Bridging public and private organizational theories*. Jossey-Bass: San Francisco.

Boyne, G.A. (1998). Bureaucratic theory meets reality: Public choice and service contracting in U.S. local government. *Public Administration Review* 58(6), 474 – 84.
Brammer, S., Walker, H. (2011). Sustainable procurement in the public sector: an international comparative study. *International Journal of Operations & Production Management* 31(4), 452-476.
Bratt, C., Hallstedt, S., Robert, K-H, Broman, G., Oldmark, J. (2013). Assessment of criteria development for public procurement from a strategic sustainability perspective. *Journal of Cleaner Production* 52, 309-316.
Bretschneider, S. (1990). Management information systems in public and private organizations: an empirical test. *Public Administration Review* 50(5), 536-545.
Brignall, S., Modell, S. (2000). An institutional perspective on performance measurement and management in the 'new public sector'. *Management accounting research* 11(3), 281-306.
Brown, T. L., Potoski, M., Van Slyke, D. M. (2006). Managing public service contracts: Aligning values, institutions, and markets. *Public Administration Review* 66(3), 323-331.
Brown, T., Potoski, M., Van Slyke, D. (2016). Managing complex contracts: A theoretical approach. *Journal of Public Administration Research and Theory* 26(2), 294-308.
Burchard-Dziubinska, M, Jakubiec, T. (2012). Green public procurements (GPP) as an instrument of implementation of sustainable development. Analysis of the experience of the Łódź region local government. *Comparative Economic Research* 15(3), 23-36.
Caldwell, N., Walker, H., Harland, C., Knight, L., Zheng, J., Wakeley, T. (2005). Promoting competitive markets: The role of public procurement. *Journal of Purchasing and Supply Management* 11(5), 242-251.
Carroll, A. B., Shabana, K. M. (2010). The business case for corporate social responsibility: A review of concepts, research and practice. *International Journal of Management Reviews* 12(1), 85-105.
Carter, C. (2000). Ethical issues in international buyer-supplier relationships: a dyadic examination. *Journal of Operations Management* 18(2), 191-208.
Carter, C. (2005). Purchasing social responsibility and firm performance: the key mediating roles of organizational learning and supplier performance. *International Journal of Physical Distribution & Logistics Management* 35(3), 177.
Carter, C., Jennings, M. (2004). The role of purchasing in corporate social responsibility: a structural equation analysis. *Journal of Business Logistics*, 25(1), 145-86.
Case S. (2004). Policy updates inspire environmental purchasing. *American City & County* (February 13).
Centre for European Policy Studies. (2012). *The Uptake of Green Public Procurement in the EU* 27. Brussles: Centre for European Policy Studies.
Cheng, W., Appolloni, A., D'Amato, A., Zhu, Q. (*forthcoming*). Green public procurement, missing concepts and future trends – a critical review. Journal of Cleaner Production.
Chicksand, D., Watson, G., Walker, H., Radnor, Z., Johnston, R. (2012). Theoretical perspectives in purchasing and supply chain management: an analysis of the literature. *Supply Chain Management: An International Journal* 17 (4), 454-472.
Christmann, P. (2000). Effects of 'best practices' of environmental management on cost advantage: The role of complementary assets. *Academy of Management Journal* 43, 663–680.
City of Phoenix. 2017a. LED streetlight program. phoenix.gov/streets/neighborhood-matters/street-light-information/led, last accessed January 9, 2018.

City of Phoenix. 2017b. Initial phase for LED street light conversion work begins August 14. phoenix.gov/news/streets/1786, last accessed January 9, 2018.
Coggburn, J. D., Rahm, D. (2005). Environmentally preferable purchasing: who is doing what in the United States? *Journal of public procurement*, 5(1), 23.
Covin, J. G., Slevin, D. P. (1991). A conceptual model of entrepreneurship as firm behavior. *Entrepreneurship: Critical Perspectives on Business and Management* 3, 5-28.
Darnall N, Hsueh L, Stritch J, Bretschneider S. (2018). Environmental purchasing in the City of Phoenix. Garren SJ, Brinkman R. (eds.) *Handbook of Sustainability: Case Studies and Practical Solutions*. London: Palgrave Macmillan.
Darnall N., Edwards, Jr., D. (2006). Predicting the cost of environmental management system adoption: the role of capabilities, resources and ownership structure. *Strategic Management Journal* 27(4), 301-320.
Darnall, N., Stritch, J.M., Bretschneider, S., Hsueh, L., Duscha, M., Iles, J., No, W., Suarez, J., Burwell, C. (2017b). *Advancing Green Purchasing in Local Governments*. Phoenix: Arizona State University, Center for Organization Research and Design, Sustainable Purchasing Research Initiative.
Darnall, N., Stritch, J.M., Bretschneider, S., Hsueh, L., No, W. (2017a). Going green on purchasing: eight practices to reduce environmental impacts. *Public Management Magazine* 99(8), 28-29.
Das, T. K., Teng, B. S. (2000). A resource-based theory of strategic alliances. *Journal of Management* 26, 31–61.
Delmas, M.A., Pekovic, S. (2014). Resource efficiency strategies and market conditions. *Long Range Planning* 48(2), 80-94.
Donaldson, T., Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of management Review* 20(1), 65-91.
Edler, J., Georghiou, L. (2007). Public procurement and innovation—Resurrecting the demand side. *Research Policy* 36(7), 949-963.
Eisinger, P. (2002). Organizational capacity and organizational effectiveness among street-level food assistance programs. *Nonprofit and Voluntary Sector Quarterly* 31(1), 115-130.
Engel, K. H., Orbach, B. Y. (2008). Micro-motives and state and local climate change initiatives. *Harvard Law & Policy Review* 2, 119.
Erridge, A., Greer, J., 2002. Partnerships and public procurement: building social capital through supply relations. *Public Administration* 80(3), 503–522.
Feldman, M.S. (2000). Organizational routines as a source of continuous change. *Organization Science* 11 (6):611–29.
Feldman, M.S., Pentland, B. (2003). Reconceptualizing organizational routines as a source of flexibility and change. *Administrative Science Quarterly* 48(1), 94–118.
Feldman, M.S., Rafaeli, A. (2002). Organizational routines as sources of connections and understandings. *Journal of Management Studies* 39(3), 309–31.
Fernandez, S., Malatesta, D., Smith, C. R. (2013). Race, Gender, and Government Contracting: Different Explanations or New Prospects for Theory? *Public Administration Review* 73(1), 109-120.
Gelderman, C.J., Ghijsen, P.W.T., Brugman, M.J. (2014). Opportunism and honest incompetence: Seeking explanations for noncompliance in public procurement. *International Journal of Public Sector Management* 19(7), 702-714.
Grant, RM. (1991). The resource-based theory of competitive advantage. *California*

Management Review 33, 114-135.
Gulati, R. (1998). Alliances and networks. *Strategic Management Journal* 19(4), 293–317.
Hambrick, D.C., Finkelstein, S. (1987). Managerial discretion: a bridge between polar views of organizational outcomes. Cummings, L.L., Staw, B.M. (eds.), *Research in Organizational Behavior*: 369–406. Greenwich, CT: JAI Press.
Hart S. (1995). A natural-resource-based view of the firm. *Academy of Management Review* 20, 986-1014.
Hart, S. L. (1992). An integrative framework for strategy-making processes. *Academy of Management Review* 17(2), 327-351.
Hsueh L., Bretschneider, S., Stritch, J.M., Darnall N. (2017). Policy implementation as institutionalization: evidence from sustainable procurement in local governments. Association of Public Policy Analysis and Management Conference, Chicago.
Hsueh L., Darnall N. (2017). Alternative and nonregulatory approaches to environmental governance. *Journal of Public Administration Research and Theory*, 1-7. DOI: 10.1093/jopart/muw042
Huber, G. P. (1990). A theory of the effects of advanced information technologies on organizational design, intelligence, and decision making. *The Academy of Management Review* 15(1), 47-71.
Jørgensen, T.B., Bozeman, B. (2007). Public values: An inventory. *Administration & Society* 39(3), 354-381.
Kauppi, K., Van Raaij, E.M. (2006). *Journal of Public Administration and Theory* 25(3), 953-979.
Kim, Y. (2010). Improving performance in US state governments: Risk-taking, innovativeness, and proactiveness practices. *Public Performance & Management Review* 34(1), 104-129.
Lavery, K. (1999). *Smart Contracting for Local Government Services: Processes and Experience*. Westport, CT: Praeger.
Lin H., Darnall N. (2010). Strategic alliances for environmental protection. Sarkis J, Cordeiro J, & Vazquez-Brust D (eds). *Facilitating Sustainable Innovation through Collaboration: A Multistakeholder Perspective*. New York: Springer, 233-246.
Lin, H., Darnall, N. (2015). Strategic alliance formation and structural configuration. *Journal of Business Ethics* 127, 549-564.
Linton, J.D., Klassen, R., Jayaraman, V. (2007). Sustainable supply chains: an introduction. *Journal of Operations Management* 25(6), 1075-1082.
Loader, K. (2007). The challenge of competitive procurement: value for money versus small business support. *Public Money and Management* 27(5), 307-314.
Lumpkin, G. T., Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of management Review* 21(1), 135-172.
McCrudden, C. (2004). Using public procurement to achieve social outcomes, *Natural Resources Forum* 28(4), 257-67.
McGrann, K. (2014). Benign neglect: Veteran-owned small business in Federal procurement today. *Veterans Law Review* 6(187).
Mergel, I., Bretschneider, S. (2013). A three-stage adoption process for social media use in government. *Public Administration Review* 73(3), 390–400.
Mintzberg, H. (1983). *Power In and Around Organizations*. Prentice-Hall: Englewood Cliffs, NJ.

Moon, M. J. (1999). The pursuit of managerial entrepreneurship: Does organization matter? *Public Administration Review* 59(1), 31-43.
Moore, M. H. (2000). Managing for value: Organizational strategy in for-profit, nonprofit, and governmental organizations. *Nonprofit and Voluntary Sector Quarterly* 29(1_suppl), 183-204.
Nakamura, M., Takahashi, T., Vertinsky, I. 2001. Why Japanese firms choose to certify: A study of managerial responses to environmental issues. *Journal of Environmental Economics and Managemen*t 42, 23-52.
Nijaki, L.K., Worrel, G. (2012). Procurement for sustainable local economic development. *International Journal of Public Sector Management* 25(2), 133-153.
OECD. (2008). *Improving the Environmental Performance of Public Procurement: Report on Implementation of the Council Recommendation*. Paris: OECD, Environment Directorate, Environment Policy Committee.
OECD. (2015). *Government at a Glance 2015*. Paris: OECD.
Paquin, R.L., Busch, T., Tilleman, S.G. (2014). Creating economic and environmental value through industrial symbiosis. *Long Range Planning* 48(2), 95-107.
Potoski, M. (2008). State and local government procurement and the Winter Commission. *Public Administration Review* 68, S58-S69.
Potoski, M., Prakash, A. (2006). *The Voluntary Environmentalists Green Clubs, ISO 14001, and Voluntary Environmental Regulations*. Cambridge: Cambridge University Press.
Preuss, L. (2007). Buying into our future: Sustainability initiatives in local government procurement. *Business Strategy and the Environment* 16, 354-365.
Preuss, L. (2009). Addressing sustainable development through public procurement: the case of local government. *Supply Chain Management: An International Journal* 14(3), 213-223.
Rainey, H. G., Backoff, R. W., Levine, C. H. (1976). Comparing public and private organizations. *Public Administration Review 36*(2), 233-244.
Resh, W.G., Marvel, J.D. (2012). Loopholes to load-shed: Contract management capacity, representative bureaucracy, and goal displacement in federal procurement decisions. *International Public Management Journal* 15(4), 525-547.
Rolfstam, M. (2009). Public procurement as an innovation policy tool: the role of institutions. *Science & Public Policy* 36(5), 349-360.
Romzek, B. S., Johnston, J. M. (2005). State social services contracting: Exploring the determinants of effective contract accountability. *Public Administration Review*, 65(4), 436-449.
Rondinelli, D.A., Vastag, G. (2000). Panacea, common sense, or just a label? The value of ISO 14001 environmental management systems. *European Management Journal* 18, 499-510.
Rothwell, R. (1984). Technology-based small firms and regional innovation potential: the role of public procurement. *Journal of Public Policy*, 4(4), 307-332.
Rule, E. G., Irwin, D. W. (1988). Fostering intrapreneurship: The new competitive edge. *Journal of Business Strategy* 9(3), 44-47.
Salzmann, O., Ionescu-Somers, A., Steger, U. (2005). The business case for corporate sustainability: literature review and research options. *European Management Journal* 23(1), 27-36.
Sarkis, J. (2003.) A strategic decision framework for green supply chain management. Journal of Cleaner Production 11(4), 397-409.
Schein, E. H. (1990). *Organizational culture* 45(2), 109. American Psychological Association.
Schotanus, F., Bakker, E., Walker, H., Essig, M. (2011). Development of purchasing groups

during their life cycle: From infancy to maturity. *Public Administration Review* 71(2), 265-275.
Seuring, S., Müller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. *Journal of Cleaner Production* 16(15), 1699-1710.
Shockley, G. E., Stough, R. R., Haynes, K. E., Frank, P. M. (2006). Toward a theory of public sector entrepreneurship. *International Journal of Entrepreneurship and Innovation Management* 6(3), 205-223.
Silver, M.S., Markus, M.L., Beath, C.M. (1995). The information technology interaction model: a foundation for the MBA core course. *MIS Quarterly* 19(3), 361-390.
Smith, C. R., & Fernandez, S. (2010). Equity in federal contracting: Examining the link between minority representation and federal procurement decisions. *Public Administration Review*, 70(1), 87-96.
Tadelis, S. (2012). Public procurement design: Lessons from the private sector. *International Journal of Industrial Organization* 30(3), 297-302.
Testa, F., Annunziata, E., Iraldo, F., Frey, M. (2016). Drawbacks and opportunities of green public procurement: an effective tool for sustainable production. *Journal of Cleaner Production* 112, 1893-1900.
Testa, F., Iraldo, F., Frey, M., Daddi, T. (2012). What factors influence the uptake of GPP (green public procurement) practices? New evidence from an Italian survey. *Ecological Economics* 82, 88-96.
Thai, K. V. (2001). Public procurement re-examined. *Journal of public procurement*, 1(1), 9
Tolbert, C.J., Mossberger, K., McNeal, R. 2008. Institutions, policy innovation, and e-government in the American states. *Public Administration Review* 68(3), 549-63.
United Nations Environmental Programme (UNEP). (2013). *Sustainable Public Procurement: A Global Review*. United Nations Environmental Programme.
United States Environmental Protection Agency (USEPA). (2001). *An Organizational Guide to Pollution Prevention*. Cincinnati, OH: USEPA, Office of Research & Development, EPA-625-R-01-003.
Walker, H., Bakker, E. Schotanus, F., Harland C. (2013). Collaborative procurement: A relational view of buyer-buyer relationships. *Public Administration Review* 73(4), 588-598.
Walker, H., Brammer, B. (2012). The relationship between sustainable procurement and e-procurement in the public sector. *International Journal of Production Economics* 140(1), 256-268.
Walker, H., Brammer, S. (2009). Sustainable procurement in the UK public sector. *Supply Chain Management: An International Journal* 14(2), 127-138.
Walker, H., Di Sisto, L., McBain, D. (2008). Drivers and barriers to environmental supply chain management practices: Lessons from the public and private sectors. *Journal of Purchasing and Supply Management* 14, 69–85.
Walker, H., Preuss, L. (2008). Fostering sustainability through sourcing from small businesses: public sector perspectives. *Journal of Cleaner Production* 16(15), 1600-1609.
Weiss, J. A., Piderit, S. K. (1999). The value of mission statements in public agencies. *Journal of Public Administration Research and Theory 9*(2), 193-224.
Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal* 5, 171-180.
World Bank Group. (2016). *Benchmarking Public Procurement 2017*. Washington, D.C.: World Bank Group.

World Bank Group. (2017). General Government Final Consumption Expenditure (% of GDP). https://data.worldbank.org/indicator/NE.CON.GOVT.ZS, last accessed 20 September 2017.
Zsidisin, G., Ellram, L. (2001). Activities related to purchasing and supply management involvement in supplier alliances. *International Journal of Physical Distribution and Logistics* 31(9), 617-634.

Figure 1: Framework of Sustainable Public Purchasing Adoption