Elements of Sustainable Purchasing Policy That Relate to Implementation Success

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Abstract

Sustainable purchasing has become an increasingly salient way by which local governments can decrease their resource consumption, while also addressing broader climate action goals. Successfully implemented sustainable purchasing policies have the potential to reduce consumption and waste, expand green purchasing markets, and catalyze spillover benefits such as financial savings. Furthermore, city-level actions have become increasingly significant as the federal government ceases critical climate research and pulls out of collaborative climate deals (i.e. The Paris Climate Accord). Using data from the Sustainable Purchasing Research Initiative at Arizona State University's Center for Organization Research and Design, as well as qualitative policy analyses, the author investigates the elements of a city's sustainable purchasing policy (SPP) that are related to its implementation success. Furthermore, the author compares these initial findings to the case study of Phoenix, AZ where she explores whether these elements are also present in the City of Phoenix's sustainable purchasing policy. The author finds that six key policy elements are generally associated with higher SPP implementation success rates – mandatory requirements, accountability, multi-level governance, vendor requirements, advocacy, and continual improvement. While additional policy elements undoubtedly play a role in the successful implementation of a SPP, the author concludes cities that incorporate these specific elements are better positioned for successful and sustainable implementation. Conclusions further show that the City of Phoenix's 2007 Environmental Preferable Purchasing (EPP) policy contained only two of these policy elements. As a result of this project and the author's work with the City, the 2017 revised SPP incorporates all six policy elements.

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Introduction

Sustainable purchasing is a method by which social, environmental and economic considerations are taken into account when making procurement decisions (McNall, Hershauer & Basile, 2011). Alternately, environmentally preferable purchasing only takes environmental factors into consideration. Environmentally preferable products have a decreased effect on the environment, are compostable, reusable/refillable or biodegradable or made from recycled materials. Products that can be transitioned to more sustainable ones include, vehicle fleets, chemicals and janitorial supplies, paper products, electronics, and construction materials. In addition to environmental benefits, sustainable purchasing can also create significant market incentives for vendors to alter their manufacturing processes and for cities to change their purchasing habits (Darnall et. al, 2017).

While many United States (US) cities have implemented sustainable purchasing policies (SPPs), it is often the case these policies are not implemented fully or effectively (Darnall et. al, 2017). Critical to the success of an SPP is the identification of implementation barriers, as well as the use of best practices to create SPPs, which help cities meet their climate goals.

In the last decade, the City of Phoenix has (City) made great strides toward creating a more sustainable community. In 2016, the City adopted eight 2050 Environmental Sustainability goals that articulate the City's desire to create long-term environmental outcomes. Within these goals are specific environmental initiatives, which focus on waste diversion, water conservation, reduced greenhouse gas (GHG) emissions, increased use of renewable energy, and sustainable transportation infrastructure. As part of Phoenix's suite of sustainability programs, one of its earlier actions was to implement an EPP (2007), which established clear sustainable purchasing goals. However, there have been barriers to reaching these goals. What barriers to implementation can be identified and furthermore, how can these barriers adequately be addressed? What elements of cities, an SPP are related to successful implementation? How can this information be used to better inform the City's SPP? This report will answer these questions.

The City's 2007 EPP announced the City's intent to procure environmentally preferable products in order to reduce consumption and waste, protect the health of City residents and employees, and meet broader environmental goals, while also remaining fiscally responsible. This policy faced significant pushback from City departments and lacked the adequate resources to create citywide awareness and implement impactful training, however the prominent barrier to SPP implementation remains resistance to change.

Learning from these early challenges, the City has since taken significant steps toward developing and implementing a successful SPP. In 2017, the City's Office of Environmental Programs and Office of Sustainability worked to revise the existing policy to incorporate stricter guidelines and build more advanced support networks.

Context

Phoenix, AZ is looking to become one of the most sustainable cities in the US. In achieving its goal, Phoenix adopted a environmentally preferable purchasing policy in 2007. However, City directors have not reported significant progress with implementing the policy. The City revised its EPP and expanded the content of the policy to make it an SPP in 2017. The revised policy includes additional policy elements, which might be linked to successful implementation; nonetheless, the City continues to face notable barriers.

Phoenix is not alone in facing this scenario. The United Nations Environmental Programme, International City/County Management Association (ICMA), and Sustainable Purchasing Leadership Council (SPLC) highlight that most U.S. local governments have not adopted sustainable purchasing policies, while those that have, have failed to implement them fully, suggesting significant barriers to implementation (Darnall et. al, 2017).

In order to assess this relationship, the Center for Organization Research and Design at Arizona State University conducted a study that examined sustainable purchasing and procurement practices across 459 U.S. cities, including the City. This project collected responses from 616 directors of Finance, Public Works, and Environmental Departments. City directors reported on whether their cities had an SPP. Those that did then reported on whether the implementation of their City's SPP was successful. I selected 19 of those cities: those that were most and least successful. Their SPPs were assessed across six elements:

1. Mandatory requirements
2. Accountability
3. Multilevel governance
4. Vendor requirements
5. Advocacy
6. Continual improvement

Each of these elements was found to be present in successful SPPs and lacking in unsuccessful SPPs. Four of these were also lacking in the City's SPP.

By understanding the relationship between these six policy elements and SPP implementation success, the City, as well as other local governments, will be better equipped to develop quality policies using best practices. Cities embarking on the process of drafting an SPP or those looking to update their current SPP should consider these six elements when doing so.

Literature Review

US governments spend on average $1.72 trillion on goods annually, which accounts for 15-30 percent of country-level gross domestic product (GDP). These items include vehicle fleets, construction materials, chemicals, electronics and office materials. Each of these items contributes to global climate change and other environmental concerns. To address these impacts, some cities have adopted green purchasing policies. Implementation of these policies can mitigate climate impacts and lead to cost savings.

While green purchasing policies have the potential to significantly reduce carbon impacts across the globe, most US cities have either struggled to implement them or do not have one at all. Therefore green purchasing policies have not reached their full potential to help local governments mitigate adverse environmental impacts. This concerns the United Nations Environmental Programme, the ICMA, the SPLC, and others. These orgranizations suggest that this issue must be resolved in order to move toward an environmentally sustainable economy.

Sustainable purchasing policies come in many forms. There are formal policies such as ordinances, executive orders, resolutions and administrative directives. On the other hand, there are less formal approaches such as adding sustainable purchasing language to existing or complimentary policies that address green purchasing (i.e. a sustainability plan).

The survey and project developed three broad objectives which include determining the facilitators and barriers to adoption and implementation of green purchasing polices in local governments, recommending actions for advancing green purchasing practices, and encouraging local governments that lack green purchasing policies to implement them within their jurisdictions. To accomplish the first two objectives, the research team conducted a national survey of finance, public works, and environmental directors in a sample of US local governments.

Based on the Sustainable Purchasing Research Initiative survey data, only 28% of the 585 city directors who responded stated that they had adopted a sustainable or green purchasing policy. Alternately, 60% of respondents stated that they did not have a

formal sustainable purchasing policy and 12% stated that they did not know whether they had a policy or not, which is indicative of not having a purchasing policy.

Based on the findings of the study, eight recommendations were developed to increase cities' green purchasing policy adoption and implementation success. These recommendations include, building on complementary policies and practices, using information about environmentally preferred products like those recommended by the EPA, utilizing e-procurement systems that integrate environmental product information, tracking spending related to green purchases, enhancing collaborative vendor relationships, assigning accountability to top-level management, fostering a culture of innovation, and participating in professional networks to share best practices.

Delving into the second factor that potentially impedes or facilitates SPP adoption, purchasing criteria, the survey results show that disposal costs, environmental impacts of products and services, recycling or reuse, and reducing GHG impacts are the most important criteria for cities when deciding which goods or services to purchase. In looking at facilitators of departments' ability to implement sustainable purchasing, the survey found that both cities with and without purchasing policies reported that top management facilitates or strongly facilitates their ability to implement green purchasing. Less than half of directors responded that employee attitudes or financial resources facilitate or strongly facilitate their ability to implement sustainable purchasing.

Lastly, the survey looked at the probability of successful implementation of a sustainable purchasing policy given directors' perceptions of locus of responsibility. Eighty percent of respondents believe that top managers should be responsible for the departments' environmental practices as they relate to the SPP (Darnall et. al, 2017).

A study by Homsy and Warner (2015) challenges the ideas of the Polycentric Theory, as applied to sustainability policy adoption, which contends that municipalities will act independently to provide public services that protect the environment. The study finds that internal drivers of municipal action are insufficient and low policy adoption is explained by capacity restraints. Furthermore, more policy making occurs in states with a multilevel governance framework supportive of local sustainability action. The study also concludes that large cities and rural areas show higher levels of adoption than suburbs, possibly due to free riding within a metropolitan region.

Most municipalities do not take action to promote environmental sustainability and have traditionally been pushed or incentivized by the federal or state governments. Municipalities that do adopt sustainability policies on their own are the handful of pioneering cities with sufficient capacity and with leaders willing to be environmental

entrepeneurs. Action on environmental sustainability by local governments requires public officials to think beyond typical short-term budget and political cycles.

Within a system of multilevel governance, state and federal governments might use incentives or regulations to establish broad goals and provide technical or fiscal capacity for local action. In this co-production approach, knowledge and policy innovation flow up from local governments, down from higher authorities, and horizontally across networks of municipalities (Homsy & Warner, 2015).

Sustainable purchasing needs change over time. Therefore sustainable purchasing policies should follow suit and review and update the policy about every one to three years. Updating it more frequently may deflect energy from implementation, while waiting longer risks not keeping up with emerging priorities.

There should be dedicated staff time and other resources to develop, implement, and continually advance a sustainable procurement program. The cities should clearly delineate staff roles to carry out all the major functions of the program. There should also be a designated point of contact for the program who coordinates sustainable procurement activities and answers questions about policies and procedures posed by employees and vendors.

Cities should also develop mandatory criteria for the bid solicitation, including references to credible third-party sustainability certifications and standards, when available. Mandatory product specifications are not just relevant for the purchase of goods, they are also useful when creating service contracts, and can help cities obtain a variety of benefits, such as the use of certified low-toxicity cleaning chemicals in a facility maintenance service agreement (Responsible Purchasing Network, 2016).

In the last several years, state and local governments have been directing the lion's share of climate change policy efforts. For at least the past decade, cities and states have been at the heart of climate change policy, addressing a fundamentally global problem through a patchwork of collaborative network associations and voluntary measures.

Rationally speaking, local governments should have as little to do with GHG mitigation as possible. The public choice theory clearly suggests that cities will be reluctant to engage in these activities voluntarily - all other things being equal. However, the large number of cities that are active in climate protection suggests that all other things are not equal. This concept is also explained through the Institutional Analysis and Development (IAD_ Framework developed by Elinor Ostrom. The IAD differentiates between the action arena where participants negotiate with each other and make

choices, and the external environment, which includes influences from the physical world and decisions from higher-level arenas that constrain the range of available choices within the action arena (Wood, Hultquist & Romsdahl, 2014).

Which corporate sustainable activities are associated with greater financial payoffs? Hart and Milstein's 2003 framework breaks sustainability behaviors into four broad categories – pollution prevention, product stewardship, clean technology and community focus. Pollution prevention and product stewardship are classified as low-ordered sustainability activities because Hart and Milstein suggest that these practices focus on developing incremental environmentally friendly process improvements for existing products and markets. On the other hand, clean technology and community focus are classified as higher-order sustainability activities because they emphasize creating radically innovative green process improvements that lead to new products and novel market opportunities. The study found that higher-order sustainability activities are related to greater financial payoffs (Kurpatskie & Darnall, 2012).

Higher innovation rates within municipalities are associated with council-manager governments, both with and without an elected mayor, higher population, greater growth, lower unemployment, sunbelt location and higher population density.

Studies have determined that the form of government influences process and policy outcomes in municipal government. Council-manager governments have been shown to minimize the impact of social cleavages on political decision-making as well as lowering levels of conflict and increasing levels of cooperation (Nelson & Svara, 2011).

There are three specific reasons why some governments implement more sustainability practices than others. First, capacity building is a useful conceptual focus for understanding sustainability implementation in U.S. cities. Capacity building includes developing technical and financial support and increasing managerial execution. The authors state that successful organizational change involves unlearning current behavior and learning and reinforcing new behaviors. Socioeconomic, political and environmental pressures may motivate an organization to adopt sustainability – an unlearning of old behaviors. Capacity building is also a proactive way for local governments to learn new behaviors and develop new implementation and reinforcement techniques. Capacity is linked to an organization's ability to establish goals, acquire resources, satisfy customers or citizens, reconfigure internal management processes, and adapt to changes. Capacity can also be related to organizational performance. Capacity has even been linked to local governments' involvement in climate-protecting activities. Capacity building highlights the need to systematically develop political support, financial resources, technologies, and managerial execution in building organizational capacity for policy change. Political capacity is the level of support obtained from stakeholders in implementing

sustainability policies and practices. Support from various actors is also important. Citizen support increases the legitimacy and the feasibility of actions, support from managers and employees is critical because they are the implementers of sustainability initiatives and they can sabotage change through foot dragging and end runs involving citizen advocates and elected officials, support from elected officials forecloses back channels, legitimizes change and secure funding, and support from the business and nonprofit community because it is consistent with collaborative planning and collective action efforts that are germane to building social capital and comprehensively tackling complex issues such as sustainability through the governance of public and private partnerships.

Second, sustainability is strongly associated with managerial capacity, which includes establishing sustainability goals, incorporating goals in operations, and developing supportive infrastructure. Managerial capacity reflects an organization's ability to develop sustainability goals and principles, incorporate those goals and principles into the strategic planning process and operations, and monitor and assess the achievement of those goals. Furthermore, implementation can be facilitated through having permanent institutional arrangements, such as designated individuals or offices of sustainability. Best practices can also be learned by establishing, monitoring, and evaluating performance in sustainability.

Third, getting stakeholders involved furthers the capacity for sustainability efforts over time. Additionally, citizen involvement is strongly associated with securing financial support for sustainability (Wang, Hawkins & Lebredo, 2012).

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Methodology

The scope of this project was designed during meetings with Professor Nicole Darnall from the Center for Organization Research and Design (CORD) in the School of Public Affairs and the School of Sustainability at Arizona State University (ASU) to help better understand barriers and facilitators of effective purchasing and procurement within local governments. In 2017, a 37-question survey was emailed to 1825 directors in 791 cities of 25,000 residents or more. A total of 616 directors of Finance, Public Works, Engineering, and Environmental Departments responded for a response rate of 34%. This report draws on data from two of the survey questions.

For the first question, respondents were asked to state to the best of their knowledge, whether or not their city had implemented a formal policy pertaining to a list of 6 purchasing issues – of which, "*Environmentally Sustainable Purchasing*" was one.

To the best of your knowledge, has your city **implemented a formal policy** pertaining to any of the following purchasing issues:

	Yes	No	Don't Know
Minority-owned business purchasing	○	○	○
Women-owned business purchasing	○	○	○
Environmentally sustainable purchasing*	○	○	○
Veteran-owned business purchasing	○	○	○
Local business purchasing	○	○	○
Small business purchasing	○	○	○

Image 1: Screenshot of SPP implementation question

Directors who responded "yes" to item 3c, environmentally sustainable purchasing, were then asked a follow up question later in the survey. "*How would you assess your city's overall implementation of this policy*"? The follow up question utilized a Likert scale ranging from "*Very Unsuccessful*" or "*-5*" to "*Very Successful*" or "*5*". An answer of "*0*" equated to a ranking of "*Neither Successful nor Unsuccessful*".

We are interested in your overall assessment of the implementation of your city's environmentally sustainability purchasing policy.

	Very Unsuccessful -5	-4	-3	-2	-1	Neither Successful nor Unsuccessful 0	1	2	3	4	Very Successful 5
How would you assess your city's overall implementation of this policy?	○	○	○	○	○	○	○	○	○	○	○

Image 2: Screenshot of SPP implementation success question

Cities with the highest and lowest reported SPP implementation success were selected for inclusion in this study. The highest tier of implementation success was defined as responses "4 to 5" and the lowest tier of implementation success was defined as responses "-4 to -5".

Eight respondents ranked their city's SPP implementation as "Very Unsuccessful" or "-5 to -4", while 11 respondents ranked their city's SPP implementation as "Very Successful" or "4 to 5" (Figure 1).
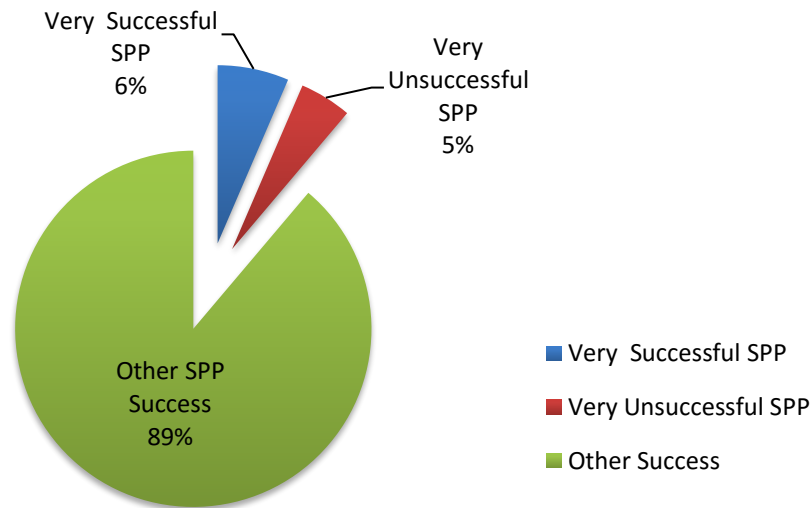

Figure 1: Sustainable Purchasing Policies (SPPs) chosen for study

I obtained these 19 cities' SPPs by using the following protocol. First, I searched the city website using specific terms that included:

- *Sustainable purchasing*
- *Sustainable procurement*
- *Sustainable acquisition*

- *Environmental purchasing*
- *Environmental procurement*
- *Green purchasing*
- *Green procurement*
- *Green acquisition*

These searches produced four possible outcomes.

- *Outcome 1 – A web link to the city's sustainable purchasing policy.*

- *Outcome 2 – A link to the city's department or sustainability page*, which was examined for the policy, documents.

- *Outcome 3 – No links to a policy/or city page,* which prompted a search of the city's web page and using the key word "sustainability" into the search field.

- *Outcome 4 – No links to a policy*, which led to an email to city directors to request that they provide a copy of the SPP document(s) or directions on where to find the information. Where applicable, directors in Finance, Public Works, and Sustainability/Environmental departments were contacted.

I obtained SPPs for all 19 cities with very successful and unsuccessful policies. All documents were thoroughly studied for commonalities and differences. Thirteen general elements were present in nearly all policy documents, as well as elements that were unique to cities with successful SPP implementation. For each element, a percentage was calculated using the following method:

number of cities whose policies included the policy element (i.e. mandatory)

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the total number of successful or unsuccessful city responses being studied

For example, 2 cities that responded as having perceived their SPP implementation as unsuccessful have policies that are mandatory. Recalling the *Figure 1*, a total of 8 unsuccessful policies were evaluated for this project. In order to calculate the percentage of unsuccessful city policies which possess the mandatory element:

2 (number of unsuccessful cities who had mandatory policies)

--- = 25%

8 (total number of unsuccessful city responses being studied)

The same was done for "successful" cities.

7 (number of successful cities who had mandatory policies)

--- = 63.64%

11 (total number of successful city responses being studied)

Finally, for each element, these percentages were compared to determine where the greatest differences could be identified. Continuing with the previous example, this was done using the following method:

63.64% - 25% = 38.64%

From this data, a list of successful policy elements was created, which municipal practitioners can reference when updating or drafting policy documents. All of these elements are at least 30% more likely to be found in successful SPP policies.

Following the creation of the list of successful policy elements, six cities that were included in my study were contacted for feedback. Three "successful" cities and three "unsuccessful" cities were randomly chosen to provide feedback from the original group of 19 cities.

Initial emails were sent to financial directors, purchasing directors, and sustainability/environmental directors at each city. When contacting "successful" cities, the emails requested that the director review the six policy elements and associated recommendations and then discuss the applicability of those types of policy criteria within their city. If cities had already implemented such policy elements, they were asked to describe any barriers that they had faced while implementing them and how another city could overcome such barriers. When contacting "unsuccessful" cities, the emails requested that the director review the six policy elements and associated recommendations and then discuss the applicability of those elements within their city. For example, which elements would the city be most apt to adopt, why or why not?

If a city did not respond within 14 business days, a follow up email was sent to attempt to solicit a response.

Findings

General Policy Framework:

The following points summarize the general construction of each of the SPPs. Typically, all SPPs follow a simple layout, which include:

- *Background Information* – A brief summary of the city events leading up to enactment of the policy and introduces the policy.

- *Policy statement* or *purpose* – The intent of the policy and the overall goals of enacting the legislation.

- *Scope* –The departments that the policy applies to, who and what will be affected by the policy, and what factors the policy aims to promote.

- *Definitions* – Cities typically define "environmentally preferable products and services" using the United States Environmental Protection Agency's (US EPA) definition. It may also define product and service requirements based on US EPA standards, as well as more stringent state and/or county regulations.

- *Regulations* – Including external regulations or legislation that may have an effect on or support the SPP.

- *Roles and Responsibilities* – For each department involved in SPP implementation.

- *Procedures* – This section provides the framework for policy implementation. It may include contracting processes, reporting requirements, education or training requirements, and support efforts.

Successful SPP Elements:

It is within these sections of the policy that important differences begin to emerge. Successfully implemented policies frequently exhibit six elements, while unsuccessfully implemented policies lack these particular elements.

The report focuses on six unique policy elements that were found primarily in successful SPPs.

1. Mandatory Requirement

A mandatory requirement for an SPP is a legally binding piece of legislation that includes executive orders, ordinances and resolutions. These "hard law" requirements are highly formalized and enforce strong sanctions in the event of noncompliance.

Resolutions, in particular, tend to signal support for a policy, but the language of the resolution may lack the political "teeth" to ensure proper enforcement. Thus, resolutions are often used to approve the creation of a formal policy, which is then drafted by the same government entity.

Non-Mandatory SPP guidance includes sustainable purchasing language that is added to existing sustainability plans and climate action plans. These "soft law" approaches are non-binding and rely internal codes, guidelines, and standards that ware used to promote the expected outcome. They typically involve no, or weak sanctions, if the entity does not abide by the intended rules.

Of these two approaches, my results show that cities with a mandatory requirement have greater implementation success. More specifically, 64% (7 out of 11) of the very successful policies had mandatory requirements. On the other hand, only 25% (2 out of 8) of the very unsuccessful policies had mandatory requirements.
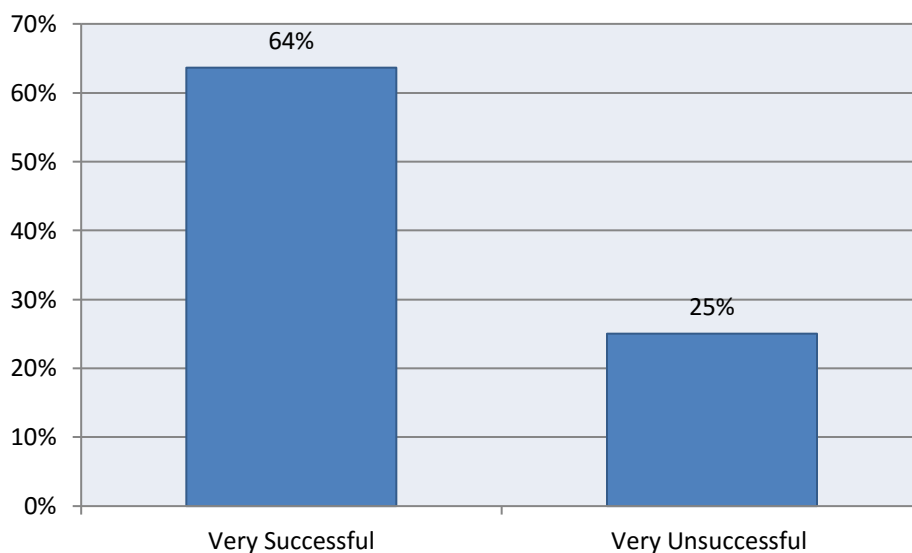

Figure 3: Mandatory requirements and SPP success

2. Accountability

Accountability refers to the requirement that staff or departments compile reports annually or at some other agreed upon interval. Accountability is an important tool for municipalities implementing any type of policy. Embedding accountability into the policy itself helps employees at all levels understand their roles in meeting the larger policy goal(s). SPPs that incorporate this accountability do so by assigning the necessary task of conducting a comprehensive audit or review to a specific person, department(s), or government entity, as well as which leaders they report back to.

Policies with strong accountability have precise due dates. An excerpt of a sustainable purchasing policy exemplifying this element may read:

> *"The Purchasing Department, in conjunction with the Sustainable Purchasing Committee and responsible departments, will issue the first annual report within one year following the effective date of this policy and annually thereafter. The report will be to the Environmental Coordinating Team covering the status of the policy's implementation, information on total purchases of environmentally preferable products, results of designated product evaluations, financial implications, overall challenges, and recommendations for the future."*

The policy further lays out the following critical components:

- *What person(s) or department(s) is responsible for conducting the audit*
- *The due date of the first audit, as well as subsequent audits*
- *What person(s) or department(s) will be receiving the audit*
- *What specific topics the audit should cover*

More than half (55%, 6 out of 11) of very successful policies included audit or review requirements. This compares to one-quarter (25%, 2 out of 8) of very unsuccessful SPP policies had included this requirement. Based on this data, I was able to conclude that department directors view cities with SPP policies that require reporting and tracking outcomes as more successful.

The Responsible Purchasing Network's 2016 guide *Sustainable Procurement Playbook for Cities* lays out why it is important for cities to track and report their sustainable procurement activities and results. Measuring the progress of the policy is critical to its longevity. Tracking the type and quantity of sustainable products purchased by the city, as well as the financial benefits of the city's procurement actions, helps cities to effectively make the case for a sustainable procurement

program, qualify for sustainability awards and grants, and identify opportunities for improving the cities' sustainable procurement programs.
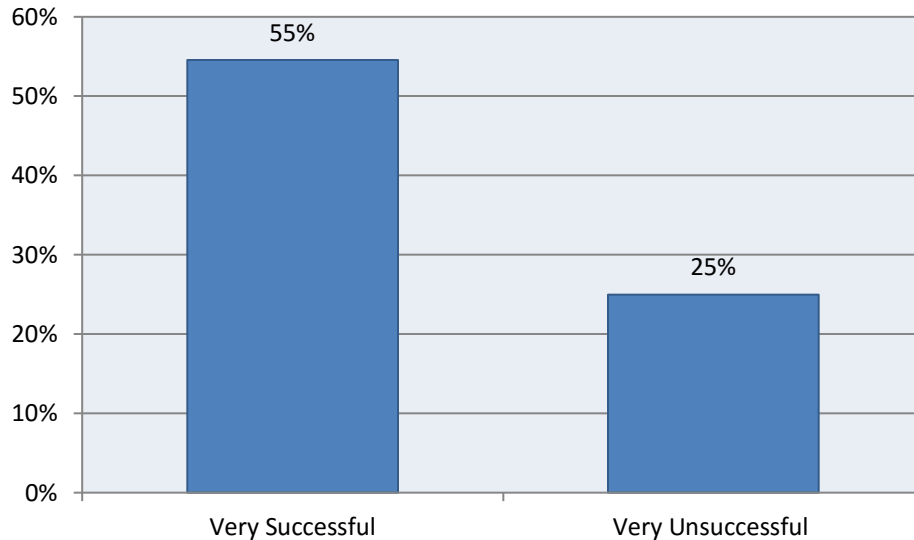

Figure 4: Accountability and SPP Success

3. Multilevel Governance

Multilevel governance is often related to higher rates of policy success. In a multilevel governance framework, federal, state, and local actors coordinate in a network that seeks common goals and upon which all parties can act (Homsy and Warner, 2015). Within it, local governments may comply with county, state or federal policies. In other instances, local governments may meet and enforce the minimum standards set by higher actors, but take it upon themselves to set additional standards which exceed the minimum.

Most local governments do not choose to promote environmental sustainability, and often do not have the capacity to do so. Multilevel governance assists local governments by creating incentives to establish regional or national goals, while also providing knowledge and technical and financial capacity for action at the local level (Homsy and Warner, 2015).

Related to the cities included in this report, those with county and state SPP policies in addition to their own were more likely to report that their SPPs were successful. More specifically, 91% (10 out of 11) of very successful policies were part of a

multilevel governance framework, while over one-third (38%, 3 out of 8) of very unsuccessful policies had this additional element of support.
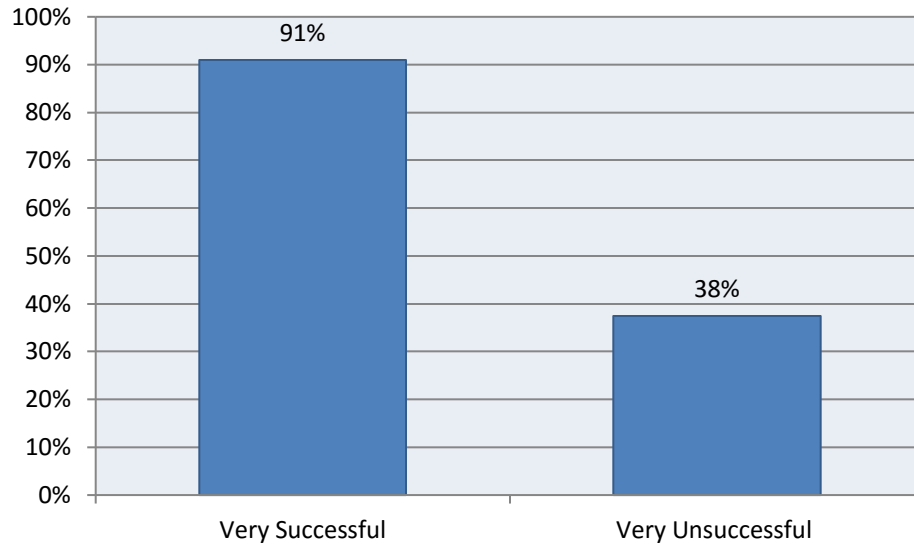

Figure 5: Multilevel Governance and SPP Success

4. Vendor Requirements

Strong vendor requirements include contracts that state clear and comprehensive procedures for vendors to follow to ensure consistent implementation.

Often SPPs include specific vendor requirements, such as requiring vendors or contractors that utilize specified products or meet certain contractual requirements. Requirements may also ask vendors to provide data on the sustainability attributes of their products. These requirements help local governments track progress and can reduce the city's financial burden of conducting a life-cycle assessment (LCA) during the vendor contracting process. These vendor requirements avoid problems due to some vendors that may count some products as "environmentally preferable" when they have relatively weak sustainability attributes (RNC, 2016*)*.

A Washington city has included this type of contract clause in its SPP requiring that

> "*vendors supply data for performance tracking and evaluation of the City's environmentally responsible purchasing program upon request*".

Similarly, an Oregon city's SPP states:

"*the awarded bidder shall adhere to the following items as applicable:*

Unnecessary packaging for goods, beyond packaging compliance or practical safe shipping methods shall be reduced. Bidder to ship goods utilizing one or more of the following methods:

a) *Ship products in reusable, refillable, or returnable containers.*
b) *Minimal packaging material used inside containers. This includes eliminating or reducing the amount of non-recyclable bubble wrap, foam pellets or other like material;*
c) *Eliminate non-essential parts of packaging, such as individual wrapping of components;*
d) *Use packaging made with recycled content, biodegradable, and/or non-toxic materials*
e) *No point of purchase material or promotional literature.*

The awarded bidder is to duplex all paper materials that are prepared for the City under the contract, whether such materials are printed or copied, except when impracticable to do so due to the nature of the product being produced."

Almost two-thirds (64%, 7 out of 11) of successful SPPs included vendor requirements into their SPPs. By contrast, only 13% (1 out of 8) unsuccessful SPPs had vendor requirements.
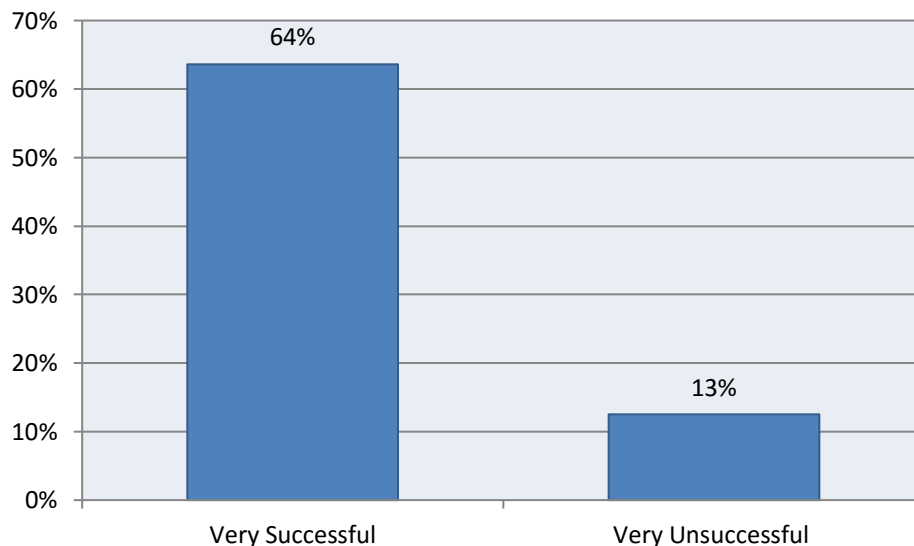

Figure 6: Vendor Requirements and SPP Success

5. Advocacy

Successful policy implementation typically requires a person, department, or other entity to actively advocate for the ideas within the policy. This entity serves as the central point of contact for policy implementation.

Alternately, some local governments have advocates that consist of a formal Green Purchasing Team or a Sustainable Purchasing Committee. These advocates are often tasked with identifying practical procurement opportunities, developing sustainable procurement specifications and applying them to contracts, and promoting the availability of sustainable products and services to the city's many departments (RNC, 2016).

By contrast, local governments lacking an SPP advocate tend to have various departments undertaking sustainable purchasing independently. As a result, no one is responsible for coordinating the programs or is accountable for its success, which can lead to the duplication of efforts and missed opportunities (RNC, 2016).

More than half (55%, 6 out of 11) of local governments with successful SPPs have formal advocates for their policies. This compares to only 13% (1 out of 8) of unsuccessful policies, which included an advocacy component.
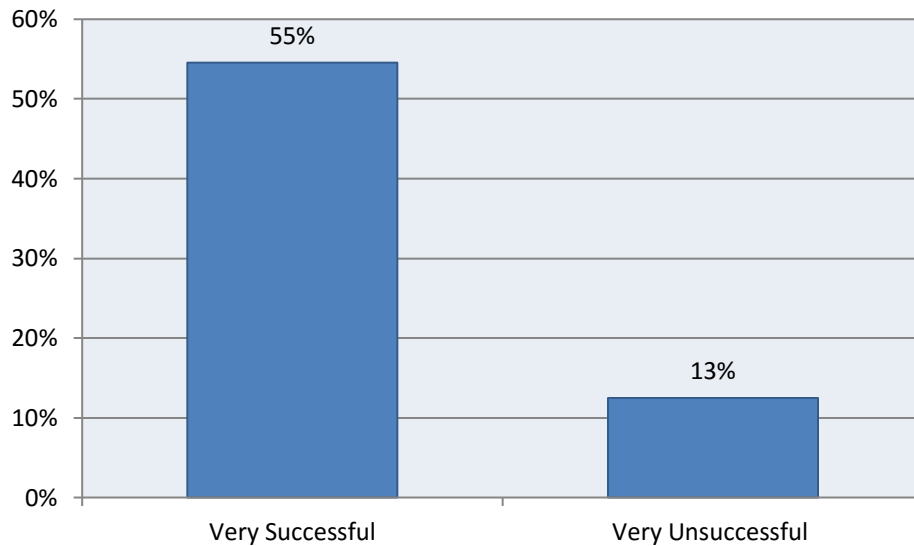

Figure 7: Advocacy and SPP Success

6. Continual Improvement

Continual improvement is an ongoing effort to improve an established policy and the implementation process, especially as new information or technologies emerge. Sustainable purchasing policies that incorporate continuous improvement principles allow for routine reviews and changes to be made over time. In other instances, they create vehicles for staff recommendations to update the policy. In general, SPPs should be updated every one to three years so that the policy is a living document that adapts to changes in science, best practices, and society (RNC, 2016).

For example, one California city included in this study requires that its SPP "must be reviewed every three years".

Almost two-thirds (64%, 7 out of 11) of cities with very successful SPPs allow for continual improvement over time. By contrast only 13% (1 out of 8) of unsuccessfully implemented policies included continual improvement as a component of their SPP.
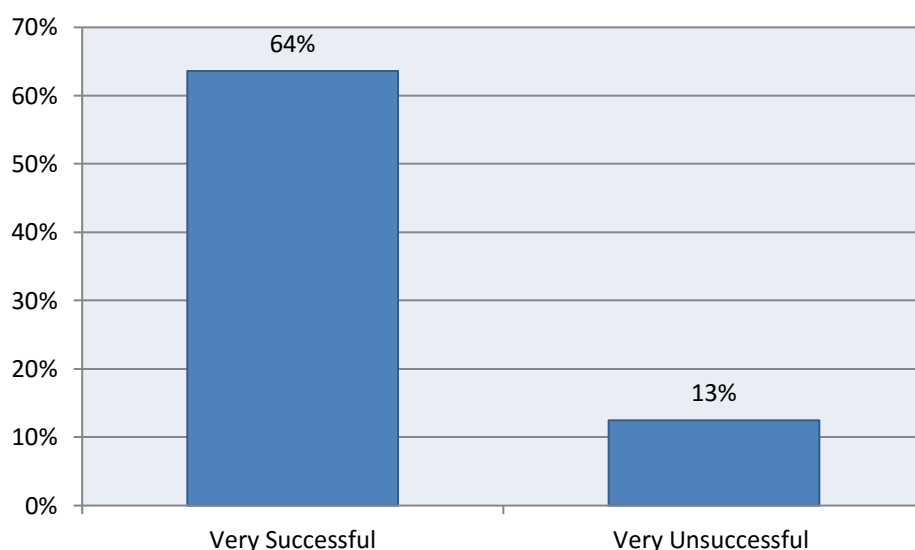

Figure 8: Continual Improvement and SPP Success

City of Phoenix:

The City's 2007 EPP incorporated only two of the six policy elements – mandatory requirement and vendor requirements. The City had not developed or implemented a system for tracking the progress of the sustainable purchasing program, nor had it designated an advocate or liaison to ensure the program made adequate progress, leading to inefficient enforcement techniques. For instance, the 2007 policy stated that all City departments would be required to purchase paper that contained at least thirty

percent recycled content. Departments did not adhere to this requirement, citing differences in color and overall quality; however, departments were not forced to comply with the policy requirement. Additionally, the policy did not address information sharing or intergovernmental relationships or when and how the policy would be periodically updated to include future changes.

In the spring of 2017, the City's Office of Environmental Programs began revising the 2007 policy to increase City sustainable purchasing efforts. The Office of Environmental Programs Administrator Joe Giudice, and Deputy City Manager Karen Peters, tasked Marina Estrella, an environmental quality specialist in the Office of Environmental Programs with spearheading the policy updates. Updates included the revision of the sustainable preferred product evaluation form.

One of the first actions required that all City purchasers attend training on green purchasing. Over a two-months' time frame, six City purchasers attended the training provided by the American Purchasing Society. It was during this time that I began my internship with the City. I shared my preliminary research findings with my client (Marina Estrella) and we began working collaboratively on the policy revision. I provided my client with my six policy elements and corresponding recommendations, as well as examples of successful SPP policy language that had been implemented by other U.S. cities. My client took this information and incorporated all elements that she felt would be supported by the City Manager's Office, while also providing a successful and impactful sustainable purchasing policy.

To gain a more holistic understanding of the Finance Department's position on sustainable purchasing, my client and I held meetings with the City purchasers to discuss potential policy requirements and the details of the revised sustainable product evaluation form. These meetings were held to identify and mitigate concerns and answer questions early on in the revision process so that they would not pose a future risk to the success of the policy.

During these meetings, the purchasers were hesitant to support a sustainable preferred product evaluation form, claiming that such forms take too long to complete and are often not well understood by the employee filling them out. In this instance, the sustainable preferable product evaluation form consisted of a comparison between an SPP product and a conventional product where different criteria are evaluated including cost, environmental impacts and life cycle considerations (i.e. disposal costs). The form would be filled out any time a City purchaser or City employee wanted to purchase an SPP product instead of a conventional product. In addition, there was push back against including mandatory language in the policy (i.e. shall), compared to the 2007 SPP that included optional language (i.e. should). Citing a common misconception regarding sustainable preferred products, purchasers suggested that such products were not

feasible because they cost significantly more than conventional products and are incongruent with departmental budgets based on the City's General Fund. Furthermore, the inclusion of vendor requirements stating the City's preference for sustainable products and services during the bidding stage of City contract formation would not be permitted because it would likely give the impression of reducing competition and lead to long-time vendors losing their contracts.

Vendor requirements are an important policy element and play a significant role in the overall success of the policy. In order to send a signal to vendors from the City that a shift toward sustainable preferable products is forthcoming, Arizona State University professors, specializing in lifecycle cost analysis (LCA) were consulted. These specialists proposed a ramping up period of the City's choosing during which vendors could make the necessary changes to comply with the new product and service specifications. Vendors would also have their products and services evaluated using a "scorecard" that identified if the product had been third-party certified to have met common environmental and social criteria.

The 2017 SPP now states vendor requirements related to the use of recyclable materials and duplex printing beginning at the bidding stage. More importantly, I developed specific SPP language that will be included in the City's Scope of Work guidelines that is referenced by City purchasers when initiating the bidding process. The inclusion of this language signals to vendors that the City is moving in the direction of sustainable preferable products and services and will be evaluated using such criteria.

The City has also begun working with vendors that supply items on the "punch list" to revise the vendor portals that City employees use to purchase these items. These items include office supplies and janitorial products. The vendor websites have been amended to display SPP products before conventional products as well as logos signifying product's environmental specifications (i.e. recycled content).

The 2017 sustainable purchasing policy incorporates all six policy elements - mandatory requirements, accountability, multi-level governance, vendor requirements, advocacy, and continual improvement. While minimal, the revised policy does include some vendor requirements and my client feels that this element can be expanded upon and solidified in the near future. As an initial step, Rosanne Albright, acting Office of Environmental Programs Administrator presented the 2017 SPP at the first annual procurement conference to better inform vendors and begin the conversation of the City transitioning to more sustainable products and services.

The revised policy faced an immense challenge in October 2017, when my client was notified that the City of Phoenix Finance Procurement A.R. included the sustainable purchasing policy. My client was not aware that the A.R. covered the 2007 EPP and that

the A.R. would have to updated along with the SPP. An A.R. has to be approved by City Council and the finance A.R. had just been reviewed and approved in July 2017 making it unlikely that City Council would revisit the issue until next year. The SPP revision does not require City Council approval, however the new policy will lack proper enforceability until the A.R. is updated to incorporate the changes next year.

Conclusions

As a result of the project, six key policy recommendations for successful SPP implementation have been identified - mandatory requirements, accountability, multi-level governance, vendor requirements, advocacy, and continual improvement. Based on these elements, I have drafted recommendations, which U.S. cities updating or implementing SPPs can reference and which the City of Phoenix utilized throughout its 2017 SPP revision – create a mandatory sustainable purchasing policy, track, measure and report on SPP implementation, enhance collaborative information sharing networks, utilize vendor requirements in contracts, assign an SPP advocate, and create a living document.

Sustainable purchasing policies implemented at the City level, serve a variety of functions including reducing greenhouse gas emissions, decreasing energy and water consumption, and offering significant financial savings.

Based on the project closeout meeting with my client and my own observations during my time with the City, the following barriers affected the success of the 2007 EPP and have the potential to adversely affect the revised policy if not mitigated:

1. Lack of resources to provide uniform training on the policy and program
2. Leadership has been assigned to oversee the success of the policy, yet they are unable to fulfill these associated duties
3. Difficulty in implementing employee training
4. Lack of buy-in from critical departments
5. Budget constraints
6. Out of date procurement system
7. Lack of employee and citizen awareness
8. Employee resistance to change due to process changes

The City is working on a way to address these barriers. The barriers are not related to policy content, but rather high level constraints, which fall outside the prevue of any one person, such as limited financial resources and lack of buy in from critical leadership.

Employees' resistance to sustainability related change and lack of awareness is being addressed through employee outreach activities such as the Sustainable Fashion Show brown bag luncheon and the Sustainable Home Design Competition.

It is important to acknowledge the limitations of working with one city. The barriers and outcomes of this project may vary based on the form of government (i.e. strong mayor v. weak mayor), available resources and other political pressures. That being said, the recommendations are meant to be general in applicability and can be catered to the unique needs of individual cities.

Future Directions

Based on the differences between the elements contained in successful versus unsuccessful SPPs, I offer six recommendations for cities interested in advancing a sustainable purchasing policy.

1.) Create a mandatory sustainable purchasing policy

Nearly two-thirds of very successful cities' SPPs have mandatory requirements. These city policies promote accountability within departments and enforce noncompliance. My findings show this "hard law" approach is a salient element in a successful SPP.

Cities that have not formally adopted a sustainable purchasing policy, but have developed complimentary policies and programs, such as climate action plans, environmental teams, and alternative energy policies are already participating in activities that are shown to lead to successful policy implementation (Darnall et. al, 2017). These activities put cities in a strong position to adopt a mandatory SPP.

2.) Track, measure, and report on SPP implementation

What gets measured gets managed. Local governments can track the progress of policy initiatives by measuring and tracking spending related to sustainable purchasing. In tracking the details of contracts that offer sustainable goods and services, cities are well positioned to measure the amount of money spent on these products as well as the types and quantities of sustainable products and services purchased by the city. Over half of very successful SPPs in this study include a tracking and reporting requirement.

Monitoring sustainable purchases creates opportunities for local governments. Cities that measure and track their sustainable purchases can make effective business cases for sustainable procurement programs by demonstrating that they are helping meet broader sustainability goals, such as reduced greenhouse gas emissions. Furthermore,

these cities can more easily identify areas for improvement within programs by showing where progress has been made and where more work is needed.

Cities can benefit from tracking their sustainable purchases through electronic procurement (e-procurement) systems. City-level e-procurement use has been increasing in the US (Bromberg and Manoharan, 2015) and sustainable product and service purchases tracking can be integrated into an e-procurement system to assess specific sustainable product criteria throughout the procurement process (Darnall et. al, 2017). Consolidated procurement platforms such as e-procurement use a centralized purchasing website or create a central forum where all city purchasing takes place. Using e-procurement limits the inherent variations in purchasing habits, reducing barriers to policy implementation.

3.) Enhance collaborative information sharing networks

A city has limited control over its multilevel governance structure. Nevertheless, cities can create similar support structures by reaching out to neighboring cities, regions, and organizations to create information-sharing networks. In a like manner, rural cities can collaborate with urban counterparts to develop large scale purchasing networks. Creating economies of scale, can lead to better prices and a simplified contracting process.

Participating in these networks can facilitate the sharing of innovations, vendor product information, and avenues by which cities can increase their sustainable purchasing efforts. Even more, three-quarters of very successful SPPs are either supported by pre-existing information-sharing networks or have created their own networks.

4.) Utilize vendor requirements in contracts

Vendors play a vital role in the success of sustainable purchasing policies. Nearly two-thirds of cities with very successful SPPs incorporate strong vendor requirements into their policies and purchasing contracts. Procurement of sustainable products and services can be a challenging process for cities given that sustainable product options are limited and cities often have limited information about sustainable products. Vendors are in an ideal position to fill this role and create collaborative relationships with the cities purchasing their products (Darnall et. al, 2017). Detailed product information provided by vendors can assist the city in conducting life cycle assessments and tracking policy goals.

Moreover, building vendor requirements into sustainable purchasing policies can create clear guidelines for each party. For instance, cities can include minimum product standards for criteria such as recycled content, labor treatment, and environmental practices.

5.) Assign an SPP advocate

City departments take on various roles and responsibilities related to the implementation of a purchasing policy. It is often the case that no one is responsible for leading SPP implementation or its success. A policy advocate fills this gap and serves as the primary point of contact for policy implementation. Similarly, some local governments have advocates in the form of green or sustainable purchasing committees or teams. In addition to identifying procurement opportunities, advocates can assist in drafting contracts, identifying sustainable products and services, and educating city staff on the principles of the policy.

6.) Create a living document

A sustainable purchasing policy should be a living document that evolves with science, best practices, and societal demands. For this reason, the Responsible Purchasing Network (RNC) suggests that SPPs should be reviewed and updated every one to three years. RNC cautions that updating the policy more frequently may deflect energy from implementation, while waiting longer to update risks not keeping up with emerging priorities. Policy changes should rely heavily on staff recommendations as they have the ability to identify problems during various phases of policy implementation.

The field of sustainable purchasing has only recently expanded. The project focused on cities with very successful policies and very unsuccessful policies, however, there is room for future work using the data from the Sustainable Purchasing Research Initiative. Such project could analyze smaller, more latent differences between cities that self reported as somewhat successful or unsuccessful, but that are looking to make minor improvements. Furthermore, future research can focus on bridging the gap between the self-reported success of a city's SPP policy and the measured success of a city's policy. The data used in the project was inherently subjective, nonetheless, it is unlikely that additional research would highlight a stark disconnect between perceived success and measured success.

<u>Appendices and Acknowledgements</u>

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