

Dimensions of Purchasing Social Responsibility in Sustainable Supply Chain
Organizations

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by

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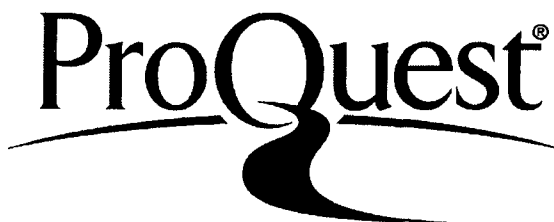
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APPROVAL PAGE

Dimensions of Purchasing Social Responsibility in Sustainable Supply Chain Organizations

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Abstract

Managers in integrated supply chains have looked beyond traditional boundaries to interfirm relationships to manage risk and advance corporate social responsibility (CSR) as consumers have shown concern with environment and societal issues. Purchasing social responsibility (PSR) has become a means of advancing CSR strategies. The problem is that it is not known if sustainability reporting is a true reflection of socially responsible purchasing designed to satisfy stakeholder demand. The purpose of this quantitative study was to compare, analyze, and evaluate the dimensions of PSR based on whether a firm identified with voluntary public sustainability reporting. After a pilot study, research commenced with distribution of the Purchasing Social Responsibility Questionnaire (PSRQ). Seventy-eight participants represented a random sample of purchasing managers from North American publicly held firms. Respondents indicated identification with voluntary public sustainability reporting. Multivariate Analysis of Variance (MANOVA) was conducted to analyze differences in PSR engagement in diversity, environment, human rights, philanthropy/community, and safety. The overall MANOVA was not significant, $F(5, 72) = 1.38, p = .240$. Some assumptions of MANOVA were not confirmed and nonparametric Mann-Whitney tests were performed to supplement. The results were not significant for PSRQ Diversity scores, $z = -1.68, p = .092$, PSRQ Environmental scores, $z = -1.06, p = .291$, PSRQ Human Rights scores, $z = -.08, p = .939$, PSRQ Philanthropy/Community scores, $z = -.32, p = .749$, or PSRQ Safety scores, $z = -1.16, p = .245$. Findings confirmed results from MANOVA that the two groups did not differ on any of the five dependent PSR variables. Evaluating PSR dimensions in firms identified with sustainability addressed the application of

stakeholder theory and provided insight into elements that distinguish strategic buyer-supplier relationships within integrated supply chains. Future research is needed into PSR alignment and standards development of sustainability reporting by industries, sectors, business models, and geographies. This research adds to knowledge of the integration of socially and environmentally responsible actions into corporate strategy and revealed that firms without public reporting of sustainable activities have imitated those that do, and sustainable initiatives have been adopted as normal strategic imperatives for business success.

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My most humble thanks are to my precious family for their love and support as I reached higher and farther than I ever thought possible. Without them, I would have quit long ago. When my parents first put me on the school bus, they had faith in my success. Later, my children and husband made me believe I would make it. I cannot count the number of times someone said, "You can do this," and my favorite, "When is graduation?" To my sweet husband, thank you for reading my papers and telling me that they sounded good, considering we both know you did not really understand all those statistics and fancy words. During my journey, because of family and friends, I found the courage within myself to reach beyond possibilities and circumstances and complete my terminal degree. To these, I say thank you for believing in me and giving me the courage to continue.

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Chapter 1: Introduction

Globalization has resulted in broadened commercial relationships worldwide. These connections have created challenges for organizational leaders, including a perception by environmental and human activists that corporate liability extends far beyond customers and suppliers. Organizations have become responsible for worldwide social welfare and the environmental impact of operations (Amaeshi, Osuji, & Nnodim, 2008). Within integrated supply chains, managers have looked beyond traditional boundaries to interfirm relationships to manage risk and advance corporate social responsibility (CSR) requirements. One of these CSR requirements is sustainability.

The buyer-supplier relationship connects companies through supply chains. Purchasing managers create a link between the internal functions and the external stakeholders of a firm (Carter & Jennings, 2004). Through this connection, CSR manifests as purchasing social responsibility (PSR), which includes socially responsible procurement and ethical sourcing (Koplin, Seuring, & Mesterharm, 2007).

The link between internal functions and external stakeholders may be understood in terms of stakeholder theory, which is based on a holistic model of the firm and the supply chain. Stakeholder theory explains an organization in terms of integrated relationships with suppliers, customers, employees, governments, media, the community, and competitors (Freeman, 2010). According to stakeholder theory ideals, a firm has an ethical and fiduciary responsibility to conduct business in deference to its stakeholders, not just its shareholders (Freeman, 2010). Stakeholder theory is a foundation of the concept of CSR, which can be exhibited through PSR strategies. Therefore, PSR has

become a critical method by which stakeholder theory affects policies and procedures for implementing CSR in supply chains through the interaction of buyers and suppliers.

Sustainable development is at the core of CSR. In 1987, representatives of the United Nations World Commission on Environment and Development introduced the concept of sustainable development as development "meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life" (World Commission on Environment & Development, 1987, p. 44). Understanding the complex interrelationships between economic/industrial development, the environment, and social systems is critical to achieving sustainable development (Hutchins & Sutherland, 2008; Seuring & Müller, 2008b).

Third parties can categorize firms as sustainable and list those firms with sustainability indexes, or managers can voluntarily submit sustainability reports to external organizations. However, not all firm leaders choose to publicly associate with sustainable reporting. An evaluation of PSR dimensions in firms identified with sustainability initiatives and those not identified as such provides insight into elements that distinguish strategic buyer-supplier relationships. In addition, such a study addresses the relevance of stakeholder theory application in contemporary supply chains.

Chapter 1 is organized to address the background of the topic and purpose for the investigation, as well as the theoretical framework related to issues, perspectives, and controversies associated with PSR relationships among organizations. The chapter continues with research questions and hypotheses to guide the study. The nature of the research design, contributive significance, definitions of essential terms, and a summary conclude the chapter.

Background

The rise of the corporation in modern industrial society highlights the influence firms have on people by touching their lives through employment and control of resources (Carroll, 1999). The application of this idea has resulted in efforts to define what this role should be, resulting in the concept of corporate social responsibility (CSR). Initially, CSR was referred to as social responsibility (SR) and included policies, decisions, and actions that addressed society members' needs and values (Carroll, 1999).

SR concepts extended beyond economic and technical interests of traditional firm management to stakeholders outside, and were at work whenever business managers or employees made decisions influenced in any way by the knowledge of impacts on public welfare and human values (Davis, 1960). These early ideas about corporate responsibility led to the development of the stakeholder model. From a stakeholder perspective, socially responsible actions can provide positive-sum benefits to any who encounter the organization's influence (Russo & Perrini, 2010), including employees (Pfeffer, 2010). Specific socially responsible organizational decisions such as offering health care, addressing inequality, reducing layoffs, and adequate job design have shown to affect employee life spans as well as physical and mental health (Pfeffer, 2010).

Supplier relationships can drive CSR strategies through the supply chain by influencing actions and behaviors by contributing to business ethics development and responsible corporate strategies (Russo & Perrini, 2010). Ethical obligations acceptable to society and stakeholders are manifested through company CSR activities carried out in the course of strategic initiatives, including supplier compliance enforcement (Boyd, Spekman, Kamauff, & Werhane, 2007). These activities support integration within a

supply chain, which can contribute to members' efficiencies, cost reduction, and competitive capabilities (Boyd et al., 2007).

Business decisions involve the use of resources. Effective management of resources includes strategies to prevent resource exhaustion so that they remain available for current and future use. This responsible use of economic, social, and environmental capital is the fundamental nature of sustainability (Carter & Rogers, 2008). Sustainability has been referred to as one way of conceptualizing CSR as it is often approached through issues management, corporate citizenship, and cause-related marketing (Montiel, 2008).

Globalization and technology advancement have broken down traditional information barriers to create an integrated and visible supply and buyer environment that crosses business sectors and geography. Many organizations include information about CSR activities on websites and in annual reports (Tate, Ellram, & Kirchoff, 2010). In 1998, 82% of *Fortune 500* firms that had Web sites provided information about socially and environmentally responsible actions (Montiel, 2008). Sustainability reporting to the public is part of this transparency, as organizational leaders convey their corporate social policies even when disclosure is not mandated or regulated. Firm leaders who take a proactive posture by communicating sustainability strategies place value on stakeholders and their needs (Henriques & Sadorsky, 1999). Leaders of some firms issue voluntary statements accounting for actions and policies in the supply chain, including those taken with suppliers. An effect of such statements is to change stakeholder expectations about corporate social and environmental responsibility, as well as about what constitutes accountability.

Third parties can categorize firms as sustainable and list those firms with sustainability indexes such as the Dow Jones Sustainability Indexes (DJSI), which tracks financial performance of sustainability-focused firms under several geographically indexed groupings. Index owners evaluate economic, social, and environmental criteria against public information (Dow Jones Sustainability Indexes, 2011). Firm leaders can also identify their own firms as sustainable by submitting sustainability reports to the Global Reporting Initiative (GRI), an organization with the goal of advancing disclosure regarding economic, environmental, and social performance reporting (Global Reporting Initiative, 2010). Companies can also join the Sustainability Consortium, a collaboration of corporations, non-governmental organizations (NGOs), and government entities administered by Arizona State University and the University of Arkansas (The Sustainability Consortium, 2011). The Sustainability Consortium focuses on sustainable supply chain issues and on reporting transparency (The Sustainability Consortium, 2011).

In recent years, a number of such reporting clearinghouses and organizations have established to organize, standardize, and document sustainability reporting. Managers may also choose to post sustainability reports prepared in-house on company websites; the design of these reports is often similar to marketing materials with color photographs and charts lauding corporate achievements. Much of the information collected and publicized relates to buyer-supplier relationships where CSR initiatives are carried out in an actionable and visible way through procurement practices such as requiring life cycle analyses (LCA), human and workers' rights initiatives, philanthropic actions, and supplier recycling.

Problem Statement

There is increasing pressure for corporate accountability from people concerned about dwindling resources, pollution, human rights, and social dilemmas (Henriques & Sadorsky, 1999). Reporting such accountability to the public is a critical part of communicating sustainability strategies. Sustainability reports outline CSR initiatives to address these concerns and results from such strategies, including the subset of procurement actions that support sustainability. Nevertheless, representatives of many firms do not submit sustainability reports or identify the firm with sustainability groups. The specific problem is that it is not known whether voluntary public sustainability or CSR reporting is a true reflection of socially responsible purchasing designed to satisfy stakeholder demands (Beloff, Tanzil, & Clarke-Whistler, 2007).

Previous studies have involved investigations of the CSR subset of PSR dimensions and the roles that diversity, environment, human rights, philanthropy/community, and safety have played in corporations. Organizations studied in terms of PSR include consumer products manufacturers in the United States (Carter & Jennings, 2004), a selection of supply chain industry leaders (Carter, 2004), public sector firms in the United Kingdom (Walker & Brammer, 2009), and corporate members of the Purchasing Association of Thailand (Salam, 2009; see Appendix A). However, prior to the current study, researchers have not compared PSR dimensions based on whether or not a firm identifies with public sustainability reporting. Findings from this research provide additional knowledge about stakeholder theory while identifying those PSR dimensions and priorities associated with sustainable firms.

Purpose

The purpose of this quantitative study was to compare, analyze, and evaluate the dimensions of PSR based on whether or not a firm identifies with voluntary public sustainability reporting. The study was nonexperimental and cross-sectional in design. Purchasing managers of publicly traded firms engaged in buyer-supplier relationships were surveyed using a modified version of the Purchasing Social Responsibility Questionnaire (PSRQ) developed by Walker and Brammer (2009; Appendix D).

The independent variable was membership in a sustainability category, defined as voluntary submission of public sustainability reports made public through company communication channels such as mailings or the Internet or to external organizations such as the GRI or the Sustainability Consortium (Global Reporting Initiative, 2010; The Sustainability Consortium, 2011). Sustainability reports are also known as "corporate social responsibility reports" or "CSR reports." For the purpose of this study, the terms "sustainability reports" and "sustainability reporting" indicate public statements about sustainable strategies. Participants not belonging to the sustainability category included purchasing managers of publicly traded companies that do not report activities that affect or relate to global economic prosperity, environmental concerns, and social consciousness.

Participants were purchasing managers who made strategic decisions including supplier selection and procurement program development, and who were employed by companies listed as publicly traded on the New York Stock Exchange (NYSE) North America, NASDAQ, or AMEX as of the survey date. The geographic restriction to North American companies was necessary to ensure that there were no language barriers

or cultural issues prohibiting the understanding of survey questions. Care was taken when selecting participants so that demographics of the sample groups were similar based on industry sectors defined by Industry Count, NASDAQ, NYSE, AMEX North America List as of May 21, 2011 (Appendix B). Selected firms represented multiple industries, and respondents chose an industry category as structured by the North American Industry Classification System (NAICS; Appendix C; NAICS Association, 2008).

Dependent variables were defined as the dimensions or constructs of PSR, which include concerns for diversity, the environment, human rights, philanthropy/community, and safety (Carter, 2004; Carter & Jennings, 2004; Salam, 2009; Walker & Brammer, 2009). Seventy-eight purchasing managers of firms engaged in buyer-supplier relationships completed the PSRQ. Mean values of the dependent variables were compared between the two independent groups identified as sustainable and not sustainable using multivariate analysis of variance (MANOVA) and Mann-Whitney nonparametric procedures.

Theoretical Framework

The basic and traditional purpose of a firm is to create and distribute value through its activities (Donaldson & Preston, 1995; Fontrodona & Sison, 2006; Freeman, 2010). In divergence to this model, which depicts the firm as a unit through which inputs and outputs pass for specific benefit of those directly influenced, stakeholder theory helps explain the changing responsibilities of the firm as organizational actions influence and integrate into the lives of individuals and society (Donaldson & Preston, 1995). Stakeholder theory is in sharp contrast to the traditional view of the firm as responsible only to shareholders, such as those receiving monetary rewards or participating with a

financial investment in the success of the enterprise (Freeman, 2010). This concept supports the notion that firms are not only obligated to perform economic activities, but also noneconomic ones (Fontrodona & Sisson, 2006). Stakeholder theory is widely accepted as an important tool in strategic management in a globalized economy, because it provides a framework for recognizing that many different stakeholders can affect the success of a firm regardless of financial investment (Freeman, 2010).

The stakeholder concept was articulated in a study in the 1960s at the Stanford Research Institute (Freeman, 2010; Preble, 2005). The term "stakeholder" identified the wider hypothesis that others beyond shareholders affected, and in turn, were affected by a firm's activities (Preble, 2005). The dynamic nature of modern business relationships support the idea that uncertain and evolving business environments call for ways to scan for emerging issues so that managers can develop appropriate responses; observation of stakeholder requests help interpret these external changes (Preble, 2005). Some changes include the emergence of consumer and environmental activist groups, an increase in government regulation and monitoring activities, market globalization and competition, an intensification of media attention and hostility, and the relative loss of confidence in business (Freeman, 1984).

Stakeholder theoretical models support a view of aggregate and composite supply chain relationships rather than those that are singular and simplistic. A stakeholder map of an organization as shown in Figure 1 may include various groups with a investment or interest in the success and activities of the firm, such as owners, suppliers, competitors, employees, customers, government, political groups, and others (Freeman, 2010). Stakeholder requirements are key motivators for strategic actions taken by firm

managers, including ethical and financial activities (Freeman, 2010). By extension, stakeholders may mandate socially responsible actions as public awareness evolves through media influence, social changes, and cultural shifts. The perspective of placing responsibility on organizations developed from the acknowledgment that broadened corporate activities had potential for repercussions on the general welfare of members of society (Russo & Perrini, 2010).

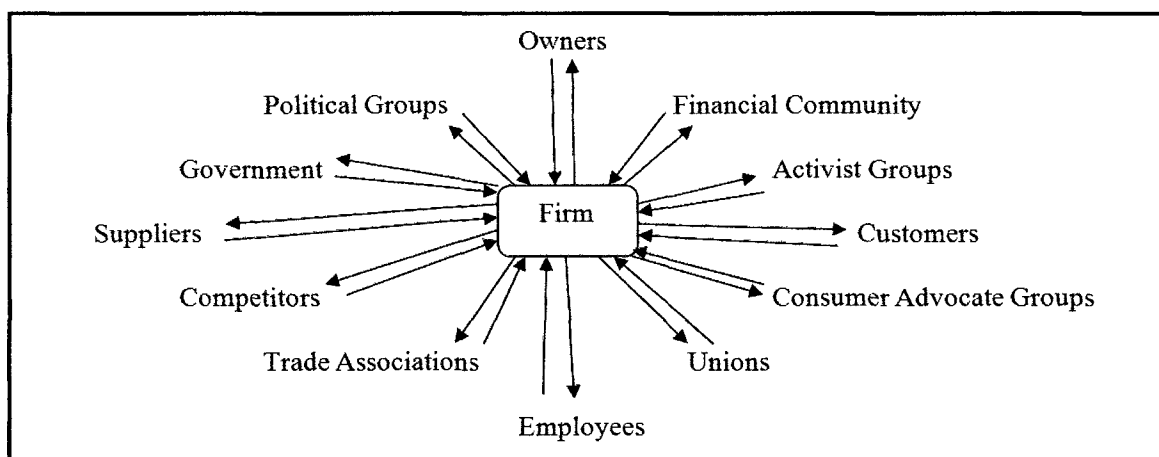


Figure 1. Stakeholder map of a very large organization. From *Strategic Management: A Stakeholder Approach* (p. 55), by R. E. Freeman, 2010, Cambridge, UK: Cambridge University Press. Copyright 2011 by Cambridge University Press. Reprinted with permission.

Not all theorists and financial economists support the idea that corporations are obligated to society, but in contrast, are restrained to generate profit and cash flow for shareholders (Friedman, 1962). However, a modern firm's success is rooted in "stakeholder relationships, which encompass many interests, chief among them social and environmental issues" (Russo & Perrini, 2010, p. 208). Ignoring stakeholder requirements places a firm at risk as it may compromise long-run self-interest, public image, business viability, avoidance of government regulation, sociocultural norms, and stockholder interest (Davis, 1973).

A comprehensive stakeholder management model proposed by Preble (2005) included six steps to facilitate stakeholder management in organizations. This model provides a clear outline to managers and scholars seeking to understand and address stakeholder concerns. The first step is stakeholder identification, which classifies stakeholders into primary, public, and secondary depending upon the depth of dependency and residual effects (Preble, 2005). Then, an assessment of the nature of claims and expectations is required and categorized as equity, economic, or influencers (Preble, 2005). Third, determining performance gaps by defining stakeholder expectations by conducting performance audits reveals gaps and influencing strategies (Preble, 2005). The next step involves prioritizing stakeholder demands, strategic importance, and salience, which includes analyzing urgency, legitimacy, and power (Preble, 2005). The fifth step includes developing and organizational responses that may include communication, collaboration, policy development, and allocating resources as well as other implementation strategies (Preble, 2005). The final step is continuous monitoring and control to evaluate progress, check stakeholder positions, and conduct social/environmental audits (Preble, 2005). Submitting sustainability statements and reports to the public is one method used to report such audit digests.

Stakeholder theory is a framework for understanding the abstract concepts of CSR because it outlines a path for integrating social and financial concerns (Freeman, Harrison, Wicks, Parmar, & de Colle, 2010). Relationships with stakeholders may be explained in terms of three levels of engagement: *compliance*, wherein CSR is accepted as a cost of doing business; *strategic*, in which CSR is considered an investment in the firm's unique competencies; and *forced*, which is the view that these activities are a type

of tax mandated by stakeholders (Munilla & Miles, 2005). Firm managers engaging in strategic CSR relationships may choose to self-impose controls perceived to be important to stakeholders, such as restrictions imposed by General Electric (GE) on greenhouse gas emissions (GHG) in an effort to curb global warming (Munilla & Miles, 2005). Others may choose transparency and release statements on responsible activities through sustainability reporting and networking.

Research Questions

The research questions focus on PSR dimensions identified as broad categories of responsible purchasing. The five dimensions are interrelated concepts within the wider framework of socially responsible activities carried out by firm leaders through procurement policies (Carter & Rogers, 2008). Prior studies have indicated that managers should implement strategic policies that address the dimensions in combination rather than independently, and that failing to address one dimension may lead to injured public reputation (Carter & Rogers, 2008). Managers who support one aspect of PSR should consider supporting the remaining (Carter & Jennings, 2004). Therefore, to build a more complete understanding of purchasing policies, the five PSR dimensions were examined in this context.

To compare dimensions of PSR in firms based on whether the firm is publicly identified as sustainable through voluntary submission of sustainability reports to external organizations or through company communication channels, with firms not associated with same, the following research questions were addressed:

Q1. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of diversity, as measured by the PSRQ?

Q2. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of environmental initiatives, as measured by the PSRQ?

Q3. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of human rights initiatives, as measured by the PSRQ?

Q4. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of philanthropic and community initiatives, as measured by the PSRQ?

Q5. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of safety initiatives, as measured by the PSRQ?

Hypotheses

To address the research questions, the following null and alternative hypotheses were tested:

Q1.

H1₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of diversity, as measured by the PSRQ.

H1_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of diversity, as measured by the PSRQ.

Q2.

H2₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of environmental initiatives, as measured by the PSRQ.

H2_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of environmental initiatives, as measured by the PSRQ.

Q3.

H3₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of human rights initiatives, as measured by the PSRQ.

H3_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of human rights initiatives, as measured by the PSRQ.

Q4.

H4₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not

identified as sustainable in terms of philanthropic and community initiatives, as measured by the PSRQ.

H4_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of philanthropic and community initiatives, as measured by the PSRQ.

Q5.

H5₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of safety initiatives, as measured by the PSRQ.

H5_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of safety initiatives, as measured by the PSRQ.

Nature of the Study

A quantitative, nonexperimental design was used to compare, analyze, and evaluate the dimensions of PSR based on whether a firm is publicly identified as sustainable through voluntary submission of sustainability reports to external organizations or through company communication channels. After a pilot test was conducted and modifications made, the study commenced with distribution of a validated survey designed to measure drivers and dimensions of purchasing social responsibility. Participants were purchasing managers selected from North American firms listed with

the New York Stock Exchange (NYSE), NASDAQ, or AMEX responsible for making strategic decisions about suppliers.

Research questions sought to identify how much variability could be explained by sustainability status, the independent variable, defined as whether the firm was identified as sustainable through voluntary public submission of sustainability reports to external organizations or through company communication channels. The five constructs or dependent variables measured were supplier diversity, environment, human rights, philanthropy/community, and safety as shown in an influence diagram (see Figure 2). Using the Statistical Package for the Social Sciences (SPSS) Graduate Pack version 19.0, responses were analyzed using parametric MANOVA analysis and nonparametric Mann-Whitney analysis. MANOVA was chosen because there were multiple theme-related dependent variables and one categorical independent variable. Mann-Whitney augmented the analysis after a review of MANOVA requirements.

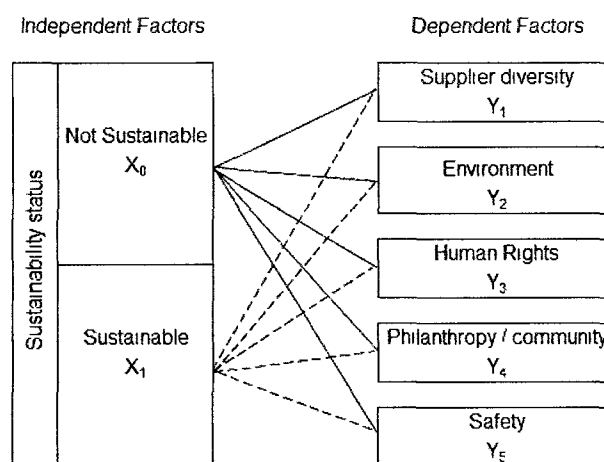


Figure 2. Influence diagram depicting relationship between sustainability status and PSR dimensions.

Significance of the Study

Sustainable supply chains have become a business imperative as consumers have increasingly shown concern with conservation, the environment, and societal issues (Pagell & Wu, 2009). However, managers must find ways to balance these concerns with economic viability and as a result, purchasing social responsibility has become an integral part of sustainable supply chain management. Results from this study determined whether there are differences in PSR initiatives between firms identified as focused on sustainability and firms not identified as focused on sustainability. Success and organizational survival of the modern firm in a globalized economy may be linked to the depth of socially responsible corporate images and activities. Findings will provide guidance to managers seeking to implement PSR or to refine their current programs as to whether their firms will have a more visible influence on human and global issues by identification with sustainability groups and listings.

Managers may be able to justify inclusion in sustainable listings or rationalize sustainability reporting by benchmarking the relative levels of the five PSR dimensions of supplier diversity, environment, human rights, philanthropy/community, and safety compared to other firms. This type of recognition may enlarge or intensify PSR activities and the focus on CSR. Purchasing strategies that identify a sustainable company were investigated so that universally accepted guidelines, benchmarks, and policies can be developed and adopted. This analysis may result in firms with similar strategies working in concert rather than independently for the greater good. Companies without large sustainability budgets could collaborate with others or focus on certain CSR programs. Ultimately, an increase or refinement in sustainability initiatives initiated through the

buyer-supplier relationship will have positive results for the world community and environment by supporting the concept of sustainable development as defined by the United Nations World Commission on Environment and Development (1987).

A recent review of academic literature on sustainability indicated that new behaviors are needed which focus on collaboration with nontraditional members and supply base continuity (Pagell & Wu, 2009). In addition, "side activities such as supplier certification, including social and environmental criteria in supplier selection, and ensuring the traceability of physical flows through the entire chain" are critical to effective supply chain management (Pagell & Wu, 2009, p. 53). Sustainable supply chain management (SSCM) supplier certification activities often include analyzing and reporting CSR activities to buyers as well the community (Pagell & Wu, 2009). A study of relationships between sustainability reporting and social responsibility manifested through PSR activities supports the need for additional research on evolving supply chain management practices.

The main subtopics in recent supply chain research have included sourcing strategies, buyer-supplier alliances, supplier selection, supply cost issues, and logistics partnerships. Logistic partnerships include buyer-supplier relationships (Rungtusanatham, Choi, Hollingworth, Wu, & Forza, 2003), which is also the focus of this research. Trends in purchasing literature include relegating responsibility for design, inventory, and other procurement functions to suppliers rather than handling these functions in-house (Wu, Choi, & Rungtusanatham, 2010). As firm managers seek to find ways to secure competitive advantage, improved buyer-supplier relationships and partnerships may provide part of the solution.

CSR supports the concepts outlined in stakeholder theory, addressing the needs of multiple stakeholder groups and their interest in the organization, as well as the organization's interest in the stakeholder (Freeman, 2010). A study of how firm managers adopt social responsibility through purchasing activities adds additional understanding about stakeholder theory. Conclusions provide insight into how stakeholder theory manifests in relationships between buyers and suppliers by mapping the level of engagement by firm representatives in activities that address socially responsible actions (Freeman, 2010; Russo & Perrini, 2010).

Definitions

Following are definitions of key terms used in this study.

Community. In the context of this study, community referred to local as well as the global members of society.

Corporate social responsibility (CSR). An early definition of CSR is "the firm's consideration of, and response to, issues beyond the narrow economic, technical, and legal requirements of the firm" (Davis, 1973, p. 312). The simplicity of this definition incorporates the fundamental idea that CSR actions apply to a realm beyond the traditional view of the firm as responsible only to shareholders. Instead, CSR actions extend to all stakeholders. The responsibilities of the firm engaged in CSR include economic, legal, ethical, and philanthropic activities, illustrated as a pyramid with economic activities at the base and philanthropic activities at the top (Carroll, 1991). The five dimensions of CSR have been identified as the stakeholder dimension, the social dimension, the economic dimension, the voluntariness dimension, and the environmental dimension (Dahlsrud, 2008).

Corporate sustainability. As an extension of the concept of sustainability, corporate sustainability includes actions designed to meet the needs of the direct and indirect stakeholders of a firm, without compromising the needs of stakeholders in the future (Dyllick & Hockerts, 2002). The concept includes the triple bottom line (3BL) model of economic prosperity, environmental concerns, and social consciousness (Elkington, 1994).

Diversity. Diversity includes policies and actions carried out by firm representatives to purchase from minority or women-owned business enterprises (MWBE). The reasons for purchasing from MWBEs may be varied, and include the spectrum from fairness policies to capitalizing on a growing market segment (Carter & Jennings, 2004). Diversity also includes purchasing from small or local supplier (Walker & Brammer, 2009). Diversity in the context of this study is synonymous with supplier diversity (SD).

Environmental purchasing (EP). In this study, environmental purchasing was defined as purchasing policies formed in response to concern about the environment. Often, these concerns manifest in purchasing strategies through supplier selection and evaluation, recycling and reuse strategies, waste disposal, and resource reduction (Zsidisin & Siferd, 2001).

Philanthropy. Philanthropy referred to donations to philanthropic organizations, volunteerism, and sustaining activities designed specifically to support the community (Carter & Jennings, 2004), which can include local or global members of society, or both.

Process chain. A process chain is a supply chain characterized as a web, and includes entities willing to work together to achieve optimization of the entire global supply chain so that all members benefit (Kim, 2006).

Purchasing social responsibility (PSR). PSR is a segment of CSR related to procurement functions within an organization. The purchasing manager interacts with buyers and suppliers, coordinating to ensure that the relationship of the company with suppliers is based on socially responsible conduct (Carter & Jennings, 2004). Other synonymous terms used in academic research for PSR are ethical sourcing and socially responsible buying (Koplin et al., 2007). Social responsibility is defined within the context of the industry or within parameters set by managers. Firm leaders develop guidelines for implementing PSR to reflect these organizational strategies. PSR is also referred to as socially responsible purchasing (SRP) (Leire & Mont, 2010). PSR includes corporate as well as operational decisions and actions.

Stakeholder theory. In 1984, Freeman (2010) proposed the concept of stakeholder theory. Stakeholder theory is a framework or strategy relating the position of organizations to the larger environment, including employees, competitors, government, customers, suppliers, and society. Rather than viewing firms in a narrow context, this worldview creates a connection between business and its environment, even if the effect or influence of the connection is unknown. Based on this view, firms have a responsibility to conduct business in an ethically responsible manner (Freeman, 2010).

Strategic supplier relationship management (SSRM). The definition of SSRM used in the this study includes structured interfirm process and linkages that enhance value among suppliers and their customers (Day, Magnan, Webb, and Hughes, 2008).

Supply chain. Supply chain refers to the system through which products are made available to users. The classic definition of a supply chain is used in this study, and it includes:

all the activities involved in delivering a product from the raw materials through to the customer including sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, delivery to the customer, and the information systems necessary to monitor all of these activities. (Lummus & Vokurka, 1999, para. 5)

Supply chain management (SCM). The definition of SCM adopted for the purposes of this study is the management of the activities of the supply chain for the purposes of attaining competitive advantage (Seuring & Müller, 2008b).

Supply management or procurement. Supply management, or procurement, was used in this study in a broad sense to describe the processes firm leaders use to manage the selection of suppliers, the purchase of materials, and the design of supply chains. These processes are designed to fulfill requirements for raw materials, component parts, or products for resale. Typically, a purchasing manager and departmental staff will accomplish these tasks through interaction and agreements with representatives of supplier firms in the supply chain.

Sustainability. Sustainability refers to conditions that include meeting current human needs and those of future generations by the responsible use of resources. A sustainable design requires the competent and responsible use of resources so that those resources are not fully exhausted. Sustainable processes should also increase resource

efficiencies and reduce waste (Balkau & Sonnemann, 2010). Sustainability requires a holistic or complete systems approach to supply chain management.

Sustainable development. In 1987, representatives of the United Nations World Commission on Environment and Development introduced the concept of sustainable development as development "meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life" (World Commission on Environment & Development, 1987, p. 44). Understanding associations among the basic institutions of economic and industrial development, the environment, and society is critical to achieving sustainable development (Hutchins & Sutherland, 2008; Seuring & Müller, 2008b).

Sustainable procurement (SP). Related to the concept of PSR, sustainable procurement is the strategic purchasing function of an organization carried out to be consistent with the principles of sustainable development (Walker & Brammer, 2009). The aim of SP is to use those suppliers and products that exhibit justifiable socioeconomic benefits or improvements. The constructs of diversity, environment, human rights, philanthropy/community, and safety are broad measurement categories of sustainable procurement (Walker & Brammer, 2009).

Sustainability status. For the purposes of this study, sustainability status was defined as whether the firm is identified as sustainable through voluntary public submission of sustainability reports to external organizations or through company communication channels, such as mailings or the Internet. Participants were asked to identify the sustainability status of their firms.

Sustainable supply chain management (SSCM). SSCM involves managing information, material, and capital by cooperating with others in the supply chain to address the 3BL elements of economic, environmental, and social concerns, with a purview for stakeholder requirements (Seuring & Müller, 2008b).

Summary

The world's population is expected to exceed 7 billion in 2011, creating an unprecedented demand for resources (United Nations Population Division Department of Economic and Social Affairs, 2009). About 82% of the population will live in undeveloped regions and many individuals will live below poverty level (United Nations Population Division Department of Economic and Social Affairs, 2009). At the same time, the expansion of globalization has created connections that extend supply chains farther than ever. Organizations own plentiful resources and as a result, have become responsible for worldwide social welfare and the environmental impact of operations (Amaeshi et al., 2008). To meet this challenge, organizational managers have become involved in socially responsible activities such as CSR. The introduction of integrated supply chains has extended the boundaries of corporations so that buyer-supplier relationships contribute to CSR through PSR.

The problem addressed in this study was that it was not known if sustainability reports detailing CSR activities are true reflections of socially responsible purchasing designed to satisfy stakeholder demands (Beloff et al., 2007). The focus of this study is on PSR dimensions as related to stakeholder theory, which helps to explain the shifting responsibilities of the firm from purely wealth creating to one in which social, environmental, and financial concerns are integrated (Freeman et al., 2010). This study

investigated the relationship between PSR dimensions and sustainability reporting or identification. Conclusions drawn in this study provide insight how managers engage with others in the supply chain to address socially responsible activities (Freeman, 2010; Russo & Perrini, 2010).

Chapter 2: Literature Review

The purpose of this quantitative study was to compare, analyze, and evaluate the dimensions of PSR based on whether a firm identifies with voluntary public sustainability reporting. The study was nonexperimental and cross-sectional in design. Purchasing managers of firms engaged in buyer-supplier relationships were surveyed using the Walker and Brammer (2009) PSRQ, modified for American readers. The constructs included five dimensions of PSR including diversity, environment, human rights, philanthropy/community, and safety (Carter, 2004; Carter & Jennings, 2004; Salam, 2009; Walker & Brammer, 2009).

A literature review was conducted using database search engines including ScienceDirect, ProQuest ABI/INFORM Global, LexusNexus Academic, Gale Academic OneFile, Ebrary, Sage Education, and Google Scholar. Keywords used in the search included sustainability, sustainable development, purchasing social responsibility, corporate social responsibility, social responsibility, triple bottom line, stakeholder theory, environmental purchasing, supply chain management, ethics, sustainability reporting, social responsibility reporting, buyer-supplier partnerships, green strategies, green supply chain management, sustainable supply chain management, integration, collaboration, supplier diversity, human rights, philanthropy, safety, risk management, and other terms used in operations management literature.

Academic and business literature related to sustainability, CSR, and green supply chain management has increased exponentially within the past 10 years, as managers and scholars seek new ways to address stakeholder requirements in a globalized economy. Many of the peer-reviewed articles discovered began with a discussion of historical

context and end with summaries of limitations and directions for new research. Quite a few authors published models to understand or apply the concepts to modern global business environment practices, as well as to develop new theory. A number of articles in this search contained a quantitative component, some were case studies, and others were commentaries. A keyword search in ScienceDirect with the term *sustainability* returned 58,930 articles. A subject-only search for peer-reviewed articles in ProQuest ABI/INFORM Global using the term *social responsibility* resulted in 4,695 documents. A Google Scholar search using *corporate social responsibility* included 64,200 results.

A discussion of sustainability and sustainable development is presented in the following literature review, including historical context, academic framework, and some of the tools and management philosophies supporting sustainability. A review of research on sustainable supply chain management follows, focusing on integration and collaboration within the supply chain. An analysis of the literature related to buyer-supplier partnerships is followed by a discussion about managing risk through supplier collaboration. The literature review continues with a discussion of corporate and purchasing social responsibility. Issues related to the debate regarding the limitations of corporate liability in a modern firm are presented. Next is a discussion of the dimensions of PSR constructs and their definitions as examined in the study. Finally, a review of sustainability accounting, auditing, and reporting provide insights into social and environmental strategies in sustainable supply chains. A summary of the literature review follows.

Sustainability and Sustainable Development

The idea of sustainability and human impact on the earth is not new. As early as 1798, Malthus considered the influence that rising population would have on society members when demand for food exceeded supply (Elliott, 2005; Malthus, 1798/1998). In 1962, public attention was drawn to environmental concerns by recounting the effects of the pesticide DDT on birds (Carson, 1962/2002). A decade later, three scientists used a computer simulation to explore the relationship between finite resources and expanding population growth, and prophesied that unchecked growth would result in sudden population decline because of a lack of resources (Meadows, Randers, & Meadows, 2004).

One of the most quoted and earliest definitions of the concept of sustainable development is the following statement from the Brundtland Report (World Commission on Environment & Development, 1987):

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of “needs,” in particular the essential needs of the world’s poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.

(para.1)

This definition captured the attention of political and governmental leaders in appearing to transfer environmental responsibility from individual to communal ownership. Gro Harlem Brundtland, a Norwegian Social Democrat appointed by United

Nations Secretary-General Javier Pérez de Cuéllar, chaired extensive public hearings about sustainable development. The resulting Brundtland Report linked the world environment with sustainability in a new way and laid the foundation for additional conferences and agreements to facilitate cooperation among nations for sustainable actions (Hutchins & Sutherland, 2008). Although controversial at the time, the report defined sustainable development so that realistic proposals could be developed to meet environmental challenges. These challenges entailed designing technologies and institutions that would be able to address the needs of the current generation without bankrupting future generations.

Just as interest in sustainability has risen in popular and political culture, sustainability has also garnered much attention in business literature. Elkington (1994) introduced the idea of the triple bottom line (3BL) of economic prosperity, environmental concerns, and social consciousness, expanding the idea that it was possible to link success with environmental values and concluded with an important statement:

The challenge facing individual companies will be to work out new ways of co-operating with their suppliers, customers, and other stakeholders – including competitors – in this key area of business activity, while ensuring they benefit not only in corporate citizenship terms, but also in terms of competitive advantage.

(p. 99)

In 3BL theory, the seven dimensions of a sustainable future include markets, values, transparency, life-cycle technology, partnerships, time, and corporate governance (Elkington, 1994). Subsequent research related integration, supply chains, and sustainability, and offered a definition of sustainability as well as an historical outline of

how sustainability became a management topic, and identified the following three theoretical frameworks for understanding sustainability: conventional technocentric, alternative ecocentric, and integrated sustaincentric worldviews (Gladwin, Kennelly, & Krause, 1995). However, transforming management theory and practice to address and advance sustainable development "is, in our view, the greatest challenge facing the Academy of Management" (Gladwin et al., 1995, p. 900).

However, the debate continues regarding the view that businesses have extended responsibility, with some maintaining the traditional view of the firm as responsible to society for purposes of increasing equity and making a profit (Friedman, 1962). Profit is achieved by decisions that advance the present value of future cash flow, which may be in opposition to socially responsible activities that place the organization at risk for discipline by nontraditional market corrective actions (Mackey, Mackey, & Barney, 2007). Determining trade-offs between current value and future values, as well as current consumption versus future consumption, are fundamental questions about organizational sustainable responsibility (Elliott, 2005).

A significant number of academic studies have focused on economic feasibility of sustainability by examination of environmental elements such as product life cycles and the impacts of waste (Hutchins & Sutherland, 2008). However, studies of the link between profitability and environmental performance have shown contradictory results. Findings from some studies have indicated that supporting environmental initiatives can be beneficial, and managers who resisted these initiatives could incur financial losses, while other studies show no direct relationship between actions and revenue (Russo & Fouts, 1997). One confounding issue seems to be the lack of tools to track the linkages

(Pelozo, 2009; Russo & Fouts, 1997). However, more research is needed both before and after prosustainable measures are implemented to identify the point at which advantage is gained, as well as which strategies have worked most effectively (Russo & Fouts, 1997).

Corporate sustainability performance (CSP) describes the relationship between sustainability and economic profitability; as such, activities related to CSR and environmental management systems are included (Wagner, 2010). The fundamental issue is addressing sustainable actions while not jeopardizing the economic performance of organizations (Wagner, 2010). Regression analyses of economic performance defined as stock performance indicated that there was a positive association of corporate sustainability with economic performance when a "sufficiently high level of advertising that enables a certain level of diffusion of the knowledge about its socially-related activities to relevant stakeholders such as consumers, non-governmental groups or regulatory agencies" (Wagner, 2010, p. 1559). Without such communication, the cost for sustainable actions exceeded the value received by the firm, that is, a reduction in CSP. In this study, communication strategies such as those related to sustainability reporting efforts were examined in relation to socially responsible purchasing strategic dimensions.

Sustainability includes the idea of viability and continuance. If supply chains are sustainable, then they must perform "well on both traditional measures of profit and loss as well as on an expanded conceptualization of performance that includes social and natural dimensions" (Pagell & Wu, 2009, p. 38). Although economic success is critical, business leaders have acknowledged the significance of social and environmental issues in strategic planning (Pagell & Wu, 2009). This revised concept of supply chain management supports 3BL theory, which addresses economic, environmental, and social

concerns (Elkington, 1994). Traditional supply chain ideas that increase operational performance such as total quality management (TQM) and just-in-time (JIT) also support sustainability issues such as the reduction or management of waste and effective resource allocation. Sustainable supply chains must also address 3BL problems such as reverse logistics, ecocentricity, social concerns, and life cycle management (Pagell & Wu, 2009).

Historically, actions to promote and ensure sustainability were regulations-based cost centers, yet management strategy has shifted to capture opportunities and market share through responses to sustainability requirements of stakeholders (Beloff et al., 2007). Subsequently, there have been a number of CSP instruments and management philosophies developed to measure, track, and perform analysis. For example, recently developed tools such as the GEMI Metrics Navigator provide systematic procedures to institute sustainability performance measures in an organization while supporting good business practices (Beloff et al., 2007). The Global Environmental Management Initiative (GEMI) is an organization of individuals representing more than 40 companies for the purposes of creating tools such as the GEMI Metrics Navigator and strategies to address 3BL concerns including environmental, health, safety, and sustainable development (Beloff et al., 2007).

Researchers have also exhibited great interest in building sustainable development tools and management philosophies. The Strategic Sustainability Justification Methodology (SSJM) was developed as a tool for project evaluations based on activity-based management (Presley, Meade, & Sarkis, 2007). Based on 3BL theory (Elkington, 1994), the SSJM was built on research showing that sustainability affected long-term financial viability and success. Using traditional metrics such as payback, return on

investment, and cash flow was shortsighted, failing to capture intangible benefits of sustainability (Presley et al., 2007). Four primary areas were discovered as requiring future work: the lack of assessment data for sustainability decision-making, the need for measurements and testing to determine effectiveness of sustainability efforts, a concise definition of accumulation (life cycle impacts), and further investigations into the reliability of the SSJM tool and process (Presley et al., 2007).

The SSJM addresses issues related to new or proposed projects, practices, processes, programs, or technology as related to sustainable activities undertaken by the organization (Presley et al., 2007). The tool takes into account qualitative and quantitative elements, using a matrix based on 3BL theory to include economic, environmental, and social aspects as related to strategic, tactical, and operational concerns (Presley et al., 2007). As with any instrument, the SSJM relies on user input and therefore missing information will influence the analysis.

Subsequent researchers (Carter & Rogers, 2008) developed a framework of SSCM that extended sustainability beyond 3BL theory. A resource-based view of the firm was based on a model in which sustainability was placed at the juncture between environmental, social, and economic performance. Resource-based theory (RBT) is the view that competitive advantage is gained through the effective management of resources available to the firm, which by extension relates to sustainability (Barratt & Oke, 2007; Russo & Fouts, 1997). However, more theory-building research is required, including longitudinal studies to measure multiyear economic returns (Carter & Rogers, 2008; Russo & Fouts, 1997).

Green supply chain management (GSCM) is a management philosophy that involves decreasing environmental impacts while increasing ecological efficiency (Zhu, Sarkis, & Lai, 2008). GSCM involves three performance outcomes: environmental, economic, and operational. The model includes 21 measurement items by which managers can gauge their firm's GSCM implementation strategy (Zhu et al., 2008). However, this framework did not address social sustainability concerns, which are included in 3BL and stakeholder theoretical models.

Sustainability has become a business imperative for many corporations and purchasing departments are conduits for PSR endeavors such as green or eco-purchasing (Michelsen & de Boer, 2009). In addition to public and private firms, managers of municipalities may also be subject to environmental restrictions, waste management guidelines, or green purchasing requirements. A study of public procurement in Norway indicated that larger municipalities generally had more effective and extensive sustainable procurement practices, which may indicate a need for purchasing departments in smaller cities to cooperate with those in other towns (Michelsen & de Boer, 2009).

Sustainable Supply Chain Management: Integration and Collaboration

Supply chain management (SCM) grew from the idea that firms could not compete effectively when isolated from suppliers and customers. Interdependence in the supply chain and in supplier partnerships reduced costs and shared information resulted in competitive advantage (Lummus & Vokurka, 1999). Globalization forced greater materials and finished goods management of flows in and out of the firm. As a result, different types of supply chains were recognized, depending on the extent of contact and collaboration. Types of supply chains included direct, extended, and ultimate supply

chains (Mentzer et al., 2001). Ultimate supply chains include “all the organizations involved in all the upstream and downstream flows of products, services, finances, and information from the ultimate supplier to the ultimate customer” (Mentzer et al., 2001, p. 4).

SCM is a management philosophy based on a systems approach to the supply chain as a whole. Under this philosophy, a supply chain has integrated behaviors and processes, information and goal sharing, cooperation, mutual risks and rewards, and long-term partnerships (Mentzer et al., 2001). In contrast, sustainable supply chain management (SSCM) takes into account the added 3BL dimensions of economic prosperity, environmental concerns, and social consciousness, which are derived from customer and stakeholder requirements (Seuring & Müller, 2008b). Based on a case study of 10 firms, researchers created a model showing the necessary elements for a sustainable supply chain, thereby reconceptualizing the supply chain to create an ecocentric model. In an ecocentric model, considerations of strategy are viewed in the broader social and environmental context (Pagell & Wu, 2009).

Triggers for SSCM can originate from stakeholders such as customers who may impose sustainability requirements, social pressure groups, and governments that compel regulatory compliance (Seuring & Müller, 2008b). Demands and incentives from these and other stakeholders pass through to suppliers in the form of evaluations, requirements, and performance measures (Seuring & Müller, 2008b). The most significant distinctions between SCM and SSCM are that longer portions of the supply chain, wider performance objectives that include social and environmental concerns and broader definitions of

which stakeholders must be taken into account when considering strategy (Seuring & Müller, 2008b).

Other models redefine supply chains into networks rather than vertical or horizontal representations. Process chains are nonlinear or weblike organizations of supply chains (Kim, 2006). Process chains enable quicker adaptations than those possible for traditional supply chains. The level of supply chain integration has reached even farther because of the influence of the Internet and technological advances (Kim, 2006). Building and implementing process chains includes analyzing the industry and business model, forming a council of key leadership from the organizations in the chain, developing joint strategies with performance measurements, executing the plan, and finally assessing the plan (Kim, 2006).

Collaboration with others in the supply chain can lead to cost decreases, shorter product lead times, and inventory reduction (Crook, Giunipero, Reus, Handfield, & Williams, 2008; Forker & Stannack, 2000). Integration in the supply chain improves competitive advantage by extending access to resources, lowering production costs, reducing transaction costs, and hastening product development (Boyd et al., 2007; Crook et al., 2008). Supply chain executives cited supplier relationship management and coordination more times than they cited any other required specialized supply chain skill (Crook et al., 2008). In addition, firm representatives achieved greater advantage when collaborating and sharing knowledge in the supply chain (Crook et al., 2008). Strategic supplier relationship management (SSRM) processes allow customers and suppliers to capture value; a survey showed that respondents considered supplier relationships to garner 23% additional value (Day et al., 2008).

In a study of demands for SSCM, four topics were identified as core issues: pressures and incentives for SSCM, identifying and measuring impacts on SSCM, supplier management addressing issues at the supplier-buyer interface such as SSRM, and supply chain management relating to issues across all companies involved in the supply chain (Seuring & Müller, 2008a). The study, in which questions were posed to experts in the field (the Delphi method), extended previous research in SSCM, revealing that a more cooperative approach is required than previously practiced in traditional supply chains (Seuring & Müller, 2008a). This focus on collaboration and integration will create opportunities for additional study and "a wealth of research opportunities concerning the design, implementation, and control of the supply chain" (Maloni & Benton, 1997, p. 420).

Advancements in information systems have permitted suppliers and customers to collaborate with others in their supply chains by coordinating operations to reduce inventory requirements, improve quality, and increase customer satisfaction (Drake & Schlachter, 2008). The purpose of these activities was to improve internal decision-making and elevate operating performance, yet information sharing was not a panacea for all supply chain issues (Barratt & Oke, 2007). Rather, visibility or the sharing of mutually useful information yields greater benefit; as such, the quality of information is more important than the quantity (Barratt & Oke, 2007).

The sharing of information and requirements among supply chain members can take range across a continuum of interfirm links. "Dictatorial relationships" occurred when powerful members of the supply chain forced other firms to follow their requirements, and "sustainable collaboration," took place when channel partners shared

resources and engaged in collaborative efforts to solve problems (Drake & Schlachter, 2008). Findings indicated that sustainable collaboration was favored over dictatorial relationships and was more sustainable in the long term. Dictatorial supply chain behavior such as mandating requirements between entities exists but has not been fully examined in academic literature (Drake & Schlachter, 2008).

Findings from a study of 322 manufacturers who participated in the International Manufacturing Strategy Survey (IMSS) resulted in the development of scales for measuring integration within the supply chain (Frohlich & Westbrook, 2001). Five strategies were identified with a specific arc of integration representing the direction toward suppliers or customers and the intensity associated with it (Frohlich & Westbrook, 2001). The broader the arc (and greater the integration), the higher the level of company performance; the practical inference is that firms should move toward greater integration in the supply chain (Figure 3; Frohlich & Westbrook, 2001). Later, a concise definition of integration intensity emerged to reflect, "The relative external integration that is an expression of a firm's cross-business relationships upstream with suppliers and downstream with distributors and customers" (Rozenzweig, Roth, & Dean, 2003, p. 438).

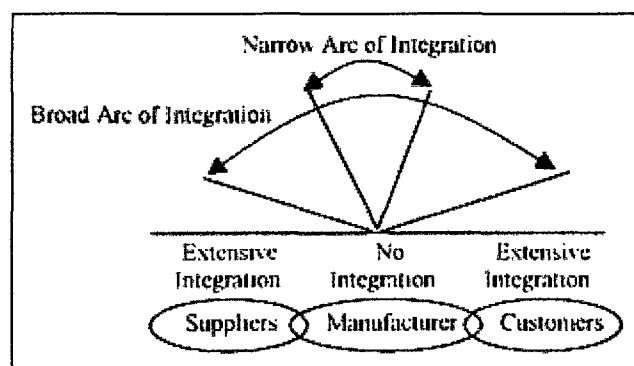


Figure 3. Arcs of integration. From "Arcs of integration: An international study of supply chain strategies," by M. T. Frohlich and R. Westbrook, 2001, Journal of Operations Management, 19(2), p. 187. Copyright 2001 by R. Westbrook. Reprinted with permission.

The capability to manage business relationships is a critical aspect of effective supply chain management, which can range from transactional to cooperative integration, and rank according to relationships and dependence (Autry & Golicic, 2010). In a longitudinal study of the highway construction industry, the level of participation and collaboration within vertical buyer-supplier relationships were found to move in a cyclical pattern, indicating that investments in supplier relationships results in increased performance and strength of the relationship (Autry & Golicic, 2010). Conversely, if suppliers consistently did not meet expectations, the future relationship level declined: reduced performance decreased the strength of the relationship (Autry & Golicic, 2010). Limitations of the study included establishing locations of the decision point triggers and factors, as well as tracking velocity (Autry & Golicic, 2010). Acknowledging relationships as contingent on past and present actions is an important step in understanding the strength of associations when considering buyer control over CSR activities of suppliers.

Buyer-supplier Partnerships

Supply chain partnerships form when independent entities in a supply chain collaborate to achieve specific objectives and advantages, such as financial or operational performance (Maloni & Benton, 1997). Research into buyer-supplier partnerships has indicated that integration improved performance (Das, Narasimham, & Talluri, 2006), resulted in greater supplier satisfaction (Forker & Stanack, 2000), and increased competitive advantage (Rozenzweig et al., 2003). Buyer-supplier partnerships often resulted in reduced supplier base, as well as reduced cost uncertainty, improved timing, and economies of scale (Maloni & Benton, 1997). Traditional supply strategies are

typically price-driven, while partnership alliances often have multiple criteria for supplier selection (Maloni & Benton, 1997). As strategic partnerships develop, the number of suppliers reduces to facilitate and increase collaboration (Mentzer et al., 2001). These types of activities support quality management principles, such as total quality management (TQM), which supports improving the quality of processes as well as products.

Reliance on few suppliers rather than many can be risky; suppliers can fail to deliver and create additional switching or replacement costs (Maloni & Benton, 1997). A recent survey indicated that market capitalization of companies with high collaboration grew by more than 8% and increased valuation 17 to 26% (Spekman & Carraway, 2006). Suppliers of automobile maker Toyota, which is known for high levels of buyer-supplier collaboration, gained 140% output per worker, lowered inventory by 25%, and achieved far fewer defects than competitors (Spekman & Carraway, 2006). As Toyota managers extended the arc of integration in their supply chain, it led to higher level of supplier company performance (Frohlich & Westbrook, 2001).

Supplier integration involves blending different practices and systems into a type of "syncreticism among the supplier, purchasing, and manufacturing constituents of an organization" through internal and external initiatives (Das et al., 2006, p. 564). A balanced approach based on integration was favorable to performance (Das et al., 2006). Firms in a cooperative relationship with suppliers had a smaller satisfaction gap than those in a competitive relationship (Forker, & Stannack, 2000). A sample of consumer products manufacturers achieved performance benefits from outward integration intensity, which directly influenced product quality capability, delivery reliability

capability, process flexibility capability, and cost leadership capability (Rozenzweig et al., 2003). The managerial implication is that supply chain integration is an important addition to supply chain strategy (Rozenzweig et al., 2003).

Competitive advantage may be gained for both members in buyer-supplier partnerships (Saccani & Perona, 2007). Potential disadvantages include loss of bargaining power because of high dependence on the success of the other party (Saccani & Perona, 2007). Using contingency theory, or one that depends on individual situations, an analysis of manufacturing buyer-supplier partnerships indicated that no specific kind of relationship is universally best. Rather, the relationship achieves highest returns when it is consistent with the context in which it operates (Saccani & Perona, 2007). This finding reveals that not all buyer-supplier partnerships are advantageous and there is no one-size-fits-all methodology. Purchasing managers must evaluate if high operational impact exists, including product cost, volumes, and stock-out costs; as well as high criticality such as customization or technological content exists (Saccani & Perona, 2007). In contrast, if low operational and criticality is present, a traditional buyer-supplier relationship may be sufficient, as it will likely yield the same results.

A model was proposed to capture elements critical to transitioning to supplier collaboration, which set the relative impact on value/economics versus difficulty obtaining supply (Spekman & Carraway, 2006). If a purchase had low impact on value or economics and the firm experienced little difficulty obtaining supply, then the buyer-seller relationship required low collaboration (Spekman & Carraway, 2006). However, if the impact on economics was high and the product was difficult to obtain, then the buyer-seller relationship should transition to a partnership (Spekman & Carraway, 2006). The

transition works most effectively when there are facilitating capabilities, which may include skill sets, information transfer, and processes to accomplish the objectives, as well as fundamental enablers such as trust and focus on stakeholders (Spekman & Carraway, 2006).

Activities related to collaboration in the automobile industry supply chain provided insight into practical approaches to sustainable development, collaboration, integration, and buyer-supplier relationships (Koplin et al., 2007). An analysis revealed that SSCM consisted of four levels, including normative requirements or standards, early detection of issues and liability reporting, self-disclosure and evaluations, and supplier development and monitoring (Koplin et al., 2007). Motivated by the need for interdependency, the length and breadth of integration should be carefully planned, implemented, and monitored, so that the relationship is balanced with optimal performance (Das et al., 2006).

Managing Risk through Supplier Collaboration

Complex global supply networks lead to increased risk as supply chains become web-like, extending influence and relationships (Harland, Brenchley, & Walker, 2003). Risks to organizations include financial loss, performance loss, physical loss, psychological loss, social loss, and time loss (Harland et al., 2003). Zero risk does not exist, and so managers must manage risk through balancing risk and reward trade-offs (Harland et al., 2003). Supply risk includes the adverse affects that may occur related to the inward flow of any resource. The move toward more intense supplier cooperation and collaboration has led to new examinations of how interfirm activities contribute to risk reduction or increase because shared relationships, rights, and obligations follow the

network linkages (Harland et al., 2003). In an industrial setting, one of the primary reasons for collaboration in networks is risk sharing, which spread the economic impact across parties in the supply chain (Danilovic & Winroth, 2005).

Understanding and mitigating shared risk in the supply chain requires an in-depth analysis and practical steps. A six step supply network risk tool outlined processes to identify and assess risk: (1) map the supply network, including structure, key measures, and ownership; (2) identify risk, including type and potential loss; (3) assess risk, the likelihood of occurrence, the stage in life cycle, potential exposure, likely triggers, and likely loss; (4) manage risk and develop associated risk position and develop scenarios; (5) form collaborative supply network strategies to mitigate the risk; and (6) implement the supply network risk strategy (Harland et al., 2003). A draft agreement among partners should include risk allocation and subsequently how costs are shared (Danilovic & Winroth, 2005). Shifting risks around the network may position the organization to manage the impact of risks more effectively (Harland et al., 2003).

Two major concerns in managing supplier networks and risk are the changing interpretations of sustainability and evolving sustainability standards (Foerstl, Reuter, Hartmann, & Blome, 2010). Effective management of buyer-supplier relationships and other associations in the supply chain can reduce the risk of corporate reputational damage caused by supplier misconduct (Foerstl et al., 2010). Sustainability is linked with stakeholder relationships and so managers seek to "distinguish themselves from other firms by not knowingly doing anything that could harm their stakeholders" (Forestl et al., 2010, p. 118). Focus on stakeholders is critical: a recent survey indicated that 20% of managers viewed environmental or CSR issues as the most significant supply chain risk

and 25% of firms required suppliers to adhere to CSR strategies (Harwood & Humby, 2008).

Irresponsible as well as responsible supplier behavior could project onto the buyer firm (Carter & Jennings, 2004). A case study of supplier management in the European chemical industry revealed that early assessment of sustainability-related supplier risk management yielded greater capabilities managing that risk (Foerstl et al., 2010).

Engaging in supplier development also helped to manage risk, yet the dynamic nature of sustainable practices require periodic review and adjustment of indicators and supplier development programs (Foerstl et al., 2010).

Corporate and Purchasing Social Responsibility

The essence of CSR is the idea that corporations own valuable and plentiful resources that can be applied to social problems (Davis, 1973). The idea of CSR is that organizational leaders should address social concerns developed in the post-Depression era in the United States (Carroll, 1999). In 1946, *Fortune* magazine representatives polled business executives about their views regarding social responsibilities, yet it was not until the 1950s that CSR concepts gained wide acceptance and defined operationally as an obligation (Carroll, 1999).

The difficulty with defining CSR and its consequent PSR is that it is nearly impossible to create an unbiased and singular meaning (Dahlsrud, 2008). There are no universally accepted written guidelines as to what specific actions are identified as social responsibility; as a result, a formal definition is elusive. Defining CSR often takes the form of descriptions and elements. The definition of social responsibility proposed by Carroll (1979) stated, "The social responsibility of business encompasses the economic,

legal, ethical, and discretionary expectations that society has of organizations at a given point in time" (p. 500). This foundational definition distills the most important aspects of CSR while addressing its changing nature as society changes. How CSR is defined in the future will be based on society members' interpretations of what is required as well as economic reality. The changing definitions of CSR are explored in the following paragraphs.

Commerce is the basic economic unit that creates worth in society by producing goods and selling them (Carroll, 1979). Firm managers have legal responsibilities that are those expectations for governance required by members of society (Carroll, 1979). Discretionary responsibilities are voluntary activities undertaken based on judgments made by organization managers, such as philanthropy (Carroll, 1979). Ethical responsibilities are those addressing behaviors and activities, and extend beyond legal responsibilities to include members of society (Carroll, 1979).

Definitions of CSR proliferated in the 1970s with a focus on both social and environmental responsibility, ultimately evolving to include five consistent dimensions: the environmental dimension, the social dimension, the economic dimension, the stakeholder dimension, and the voluntariness dimension (Dahlsrud, 2008). The environmental dimension refers to issues related to the natural environment, which includes stewardship regarding clean air, water, and land; waste reduction; recycling; eco-friendly packaging; conservation; analyzing impacts on global resources and sinks, and other "green" concerns (Dahlsrud, 2008; Kovács, 2008; Meadows et al., 2004). The social dimension includes actions involving the relationship between business and society, such as integration of social concerns such as workers' rights and diversity into

business strategy, recognition of the scope of operations impact on communities, and activities to minister to the needs of society members (Dahlsrud, 2008).

The economic dimension describes CSR in terms of the financial impact of business operations, such as economic development of communities through services, wages, and products (Dahlsrud, 2008). CSR defined as a stakeholder dimension includes how organizations interact with and treat those who directly or indirectly are impacted by operations, or affect operations themselves; these may include customers, suppliers, community members, and others (Dahlsrud, 2008). The voluntariness dimension includes actions undertaken by members of a firm that are not legally prescribed or mandated, but based on ethical values instead (Dahlsrud, 2008). These firm members can include managers participating on behalf of the organization, or individual employees expressing personal volunteerism.

Mackey et al. (2007) developed a consolidated definition of CSR as a “focus on voluntary firm actions designed to improve social or environmental conditions” (p. 818). The study investigated whether these actions would increase, decrease, or have no effect on the value of a firm. Findings indicated that some investors might have more than simply wealth maximization in mind when choosing investment strategies, and if demand for CSR exceeded supply, then the value of firms that engaged in CSR increased (Mackey et al., 2007). When entering into socially responsible activities increase a firm's present economic value, then the activities should continue; this makes financial common sense (Mackey et al., 2007). Estimating changes in the supply and demand of CSR is difficult, yet marketing campaigns underscoring social responsibility may have some impact on increasing demand (Mackey et al., 2007). Therefore, sustainability reports

outlining CSR activities may have an impact on firm value by increasing demand for socially responsible actions.

Weber (2008) developed a model and performance indicators to “serve as a basis for rational decision-making concerning a company’s CSR strategy and initiatives” (p. 259). A significant gap has been found between CSR policies and strategies to realize sustainability, specifically ways to implement strategies in complex systems (Porter, 2008). Incorporating and relating prior research, Porter (2008) offered three contributions to the literature: a definition and relationship discussion of CSR and sustainability, a typology of CSR, and methods and metrics for complex systems.

Sustainable business practices should contribute to stakeholder value as well as increase the firm's value (Svensson, Wood, & Callaghan, 2010). Increasing wealth rather than ensure sustainable development is at the center of commercial traditions of buying and selling (Svensson et al., 2010). The process of sustainable business practices begins when market and societal expectations trigger prompt an examination of ethical requirements (Svensson et al., 2010). Five elements will lead to social, environmental, and economic balance: creation of a foundation to develop and manage business practices, effective communication with stakeholders about efforts to achieve sustainability, appropriate guidance within companies to address CSR concerns, evaluations of the outcomes of sustainable business practices, and reconnection endeavors that involve controls and adjustments to activities (Svensson et al., 2010).

CSR has become a part of conducting business in the 21st century. Public interest in environmental and social concerns has precipitated the introduction of sustainability measures at firms such as Wal-Mart Corporation, Hewlett-Packard, General Electric, and

others (Leire & Mont, 2010). Many of these measures focus on integrated buyer-supplier relationships, such as hiring practices, worker safety, social programs, life cycle analysis, and waste management (Leire & Mont, 2010). There are benefits to integration, yet optimal ways to achieve balance, requirements, and reporting are unclear because of a dynamic business environment. CSR is ultimately an extension of stakeholder theory, which expands the limits of the firm (Freeman, 2010). Thus, all actions must be managed carefully with a worldview rather than in isolation (Freeman, 2010). The implications of buyer-supplier decisions on society and the environment are significant, and so PSR is an effective method of implementing CSR in organizations.

In a case study of nine companies in Europe, drivers for CSR integration across traditional supply chain barriers to suppliers and others included positive environmental and social impacts, benefits to company reputation, enhanced supplier performance, positive customer opinion, and compliance with legal standards and regulations (Harwood & Humby, 2008). Constraints preventing deeper CSR integration were the cost of CSR/PSR, competition among resources, cultural issues, persistent stakeholder demands for profit, continuous changes to standards and requirements, low levels of data sharing, and uncertainty as to what the CSR and sustainability includes (Harwood & Humby, 2008). Increasing data integrity and awareness of CSR issues, along with reducing cynicism and challenging reward structures may remove or reduce the effect of some of the restraining forces (Harwood & Humby, 2008).

The role of the purchasing department is no longer simply to buy products at the lowest possible price: the buyer-supplier interface can be instrumental in driving CSR strategies in the supply chain (Leire & Mont, 2010). Purchasing departments are

responsible for executing CSR agendas through PSR in both the private and public sectors (Leire & Mont, 2010). The process begins when managers identify stakeholder expectations regarding social issues and designate which departments, such as purchasing, will carry out processes to address those expectations. Often a supplier code of conduct is developed, and parts of the supply chain identified in which the firm can take a socially responsible role (Leire & Mont, 2010).

Although no universal set of standards for PSR exists, organizations such as the International Labor Organisation (ILO), the Global Reporting Initiative (GRI), and similar groups provide modeling frameworks. Once guidelines are developed, it is necessary to monitor supplier performance. An internal focus develops, including decisions not to bring about supplier nonconformance by shortening for environmental damage (Leire & Mont, 2010). In many cases, these organizations publish reports and presentations about ongoing research and other activities. Information is made available on the Internet is easily distributed and may lead to greater public awareness of sustainable development activities.

Implementing CSR within the supply chain often involves supplier compliance and monitoring (Boyd et al., 2007). The use of procedural justice criteria in interfirm alliances, or following guidelines that are transparent, ethical, unbiased, and correctable, are shown to be an effective means of increasing compliance (Boyd et al., 2007). Committing to such an association often changes a transactional buyer-supplier relationship to long-term by fostering a commitment-based model of CSR with a lower monitoring requirement (Boyd et al., 2007).

Socially responsible requirements often address ethical behaviors. Ethical responsibilities reflect those standards, expectations, and norms that stakeholders deem to be fair and just (Carroll & Shabana, 2010). Society members create and impose ethical responsibilities that may be in conflict with company strategies or ethical views of firm managers. Ethical requirements are often ill defined and can vary by location or culture; these issues are among the most difficult to manage (Carroll, 1979), especially for firms operating in diverse settings. Standardized ethics initiatives such as the U.N. Global Compact, GRI reporting, ISO 14000, and SA 8000 can be used to hold companies and their managers accountable for their actions (Gilbert & Rasche, 2008). Although these initiatives have common ground, they differ in the issues they standardize, the processes they address, and the specificity of their norms (Gilbert & Rasche, 2008).

Buyers may require supplier codes, policies, or standards of ethics. Questionable ethical practices may include showing favoritism in supplier selection (Carter & Jennings, 2004). Ethical abuses can include rights violations, labor discrimination, the destruction of unions, unfair hiring practices, child labor, gender inequity, and race discrimination. Ethical issues may also include deceitful practices such as supplier exaggerations and misleading statements, as well as subtle practices including accepting gifts, sharing information, and using obscure contract terms to gain advantage (Carter & Jennings, 2004). Company culture in regards to ethics is often shaped by top executive example and other antecedents include ethics policies, standards, and codes (Carter & Jennings, 2004).

Managers at coffee vendor Starbucks extended the definition of ethical responsibility to include sourcing suppliers (Carroll & Shabana, 2010). The company

participates in the fair trade coffee market, which is certified by Trans-Fair USA, a branch of Fair Trade Labeling Organizations (FLO; Carroll & Shabana, 2010). Farmers receive a guaranteed minimum price for each pound of FLO coffee, thereby avoiding black market and other unethical practices, which take advantage of rural suppliers (Carroll & Shabana, 2010). Starbucks communicates their efforts in this program through the Starbucks website, advertisements, and product labeling. A number of other coffee importers and sellers have followed Starbucks' lead and support the fair trade coffee market.

Increased competition and cost pressures have resulted in the reliance on global supply bases, leading to the development of global supply chains, exposing organizations to risks that require dynamic management strategies (Reuter, Foerstl, Hartmann, & Blome, 2010). Long supply chains are fraught with supply interruptions as well as varying legal and social requirements and standards (Reuter et al., 2010). Sustainable global supplier management (SGSM) is the integration of environmental and social principles into worldwide supplier management (Reuter et al., 2010). Verification of sustainable procedures exist at supplier operations and in supply chains is an important part of SGSM, as it ensures that supplier behavior will not cause costly reputation loss or legal obligations (Reuter et al., 2010). After a review of four case studies of chemical industry firms, the research indicated advantages to SGSM: "The earlier firms begin to evaluate their suppliers for CR-related issues, the greater the accumulation of sustainability-related capabilities relative to their competitors" leading to "competitive position of the firms through more advanced and wider risk mitigation" (Reuter et al., 2010, p. 58).

Debate Regarding Limitations of Corporate Liability

Questions remain whether organizations are liable for social and environmental issues and if so, to what extent. Early researchers argued that a firm's single responsibility to society was to make a profit and the idea that business should engage in socially responsible activities was subversive to capitalism (Friedman, 1962). Others believed that business functions as an adjunct member of society, taking resources, creating value, and participating in social and environmental impacts. Carroll (1979) argued that social, environmental, and economic responsibilities were not in opposition or mutually exclusive.

Today, strategic decisions by firm managers cannot be made without recognizing global impacts through far-reaching and wide supply chains. It is also highly likely that it is in business' long-term self-interest to support CSR activities (Carroll & Shabana, 2010). A survey of business executives revealed that 73% believed that cost savings was one of the top three reasons why companies became involved in CSR endeavors (Carroll & Shabana, 2010). Many firms fall along a continuum of social and environmental strategies and some researchers predict that managers will eventually realize the gain associated with more proactive CSR strategies (Tate et al., 2010)

Based on the number of organizations with strategic supply chain strategies to address social responsibility, there appears to be some agreement that organizations should support some form of CSR, but the issues remain how to define the scope and how far to extend its reach (Amaeshi et al., 2008). Additionally, there is fundamental debate about whether the supply chain, which can be vast and complex, is elementally part of the organization or not. There are three underlying questions: who has

responsibility for stakeholders, the definition of that responsibility, and how to address actions beyond the control of the organization if no clear ownership exists. The translation of social and environmental responsibility into actions will involve a modified rather than traditional view of the firm, accompanied by a map of its control and influence. Purchasing companies should not have indefinite responsibility for the actions of its suppliers, yet it is possible for these firms to exercise positive influence to modify the practices of suppliers and others in the supply chain (Amaeshi et al., 2008).

Some authors argue that because business derives its existence from society, then a social contract exists which creates a requirement for business to be responsible for society (Amaeshi et al., 2008). This relationship is apparent when market forces reprove or reward corporate behaviors by abandoning or supporting the firm or its brands (Amaeshi et al., 2008). In contrast, the business case for CSR is based on cost and risk reduction, gaining competitive advantage, developing reputation and legitimacy, and seeking mutually advantageous outcomes through synergistic value creation among stakeholders (Carroll & Shabana, 2010).

Stakeholder theory addresses the needs of all who may affect or are affected by an organization or its pursuits, which may include groups with a wide variety of interests including consumers, regulators, employees, shareholders, competitors, suppliers, and others in the local and global community (Amaeshi et al., 2008). Subsequently, CSR is the method by which organizational managers address these needs. However, managers of multi-national companies (MNCs) and global brands with complex supply chains may struggle with effective development and application of CSR policies. Critics may see sourcing strategies in developing countries that reveal exploitation of resources or

individuals and publicly rebuke the firm. Firms such as McDonalds, Nike, Wal-Mart, and Adidas were targeted with anti-sweatshop campaigns to build public resentment and initiate change (Amaeshi et al., 2008). Arguments such as this place organizations directly responsible for all of the activities along multi-tiered supplier networks.

Few practitioners would dispute that the economic responsibility of business is to create products and sell them, yet the question of to what extent to pursue profits does not have an easy answer (Carroll & Shabana, 2010). Hyper-profits could signal exploitation of stakeholders and may have negative effects on organizational acceptance (Carroll & Shabana, 2010). Although multiple business cases exist for rationalizing participation in CSR activities, it is clear that mediating variables and situational contingencies influence success (Carroll & Shabana, 2010). All activities have a social, financial, or environmental cost associated, even those related to CSR. Therefore, it is possible that CSR can have negative effects on firm performance. When managers pursue socially responsible activities with stakeholders' support there is a far greater probability of positive returns (Carroll & Shabana, 2010).

The lack of international regulation and comprehensive multinational policies on CSR and sustainability create significant strategic and implementation issues for managers of multinational enterprises (MNEs) because of the global reach of these organizations. An international patchwork of laws and issues require a policy balancing act; managers must determine what issues to address and how (Kolk & van Tulder, 2010). MNE managers work in a highly complex environment where ethical trade-offs are often made between social, environment, economic, legal, and ethical issues (Kolk & van Tulder, 2010). These trade-offs may come at a high social or environmental price;

some have proposed that MNEs should bear more of the burden because of the vast reach of their supply chains (Kolk & van Tulder, 2010). Identifying stakeholders of an MNE may be possible, but fully acknowledging organizational responsibility to those stakeholders is problematic. Therefore, the full impact of MNEs socially responsible or irresponsible actions within national and international contexts are unknown (Kolk & van Tulder, 2010).

Dimensions of PSR

Research into PSR activities has included sourcing from MWBEs, environmentally conscious purchasing, human rights, ethics, worker safety at supplier plants, and philanthropic community activities (Salam, 2009). PSR can influence legislation, public policy, economic opportunities, ethical influences, and stakeholder expectations (Worthington, Ram, Boyal, & Shah, 2008). Organizational culture, top management leadership, employee initiatives, values of individual purchasing employees, government regulation, and customer pressures drove PSR initiatives within a sample of consumer products firms (Carter & Jennings, 2004). Critical dimensions were essential to the strategy and execution of purchasing functions within sustainable supply chains, and included diversity, the environment, human rights, philanthropy/community, and safety (Carter, 2004; Carter & Jennings, 2004; Walker & Brammer, 2009). Carter (2004) conceptualized these dimensions as being under the "umbrella" of PSR. A discussion of each dimension follows.

Supplier diversity. Programs that supported supplier diversity included those with objectives providing buying opportunities to small firms, businesses owned by women, or businesses owned by ethnic minorities (Carter & Jennings, 2004). Minority

purchasing and supplier development programs can be legally mandated or voluntary (Worthington, 2009). Some of the motivating factors for diversity initiatives were economic and social, as well as for the purposes of maintaining organizational legitimacy among stakeholder groups (Worthington et al., 2008).

Strategies for purchasing from small and local businesses were embedded in supplier diversity practices in the UK public procurement sector (Walker & Brammer, 2009). Small and medium sized enterprises (SMEs) are those companies employing less than 250 people. A lack of human, physical, and financial resources contributed to the reduced incidence of formal practices to address sustainability issues, yet purchasing from SMEs is part of sustainability practice (Walker & Preuss, 2008). Sourcing from SMEs resulted in healthier local economies because monies tended to stay in the community and cycle several times, increasing the well-being of the population (Walker & Preuss, 2008). Another benefit included the ability to customize and align offerings with local needs through collaboration that led to sustainable development (Walker & Preuss, 2008).

Environment. Environmental initiatives include the presence of life-cycle analyses (LCA); design of products; supplier requirements, including waste reduction, recycling, and reuse; purchase of recycled packaging; and purchase of lighter-weight packaging (Kovács, 2008). The ecological aspect of CSR, or corporate environmental responsibility (CER), includes downstream effects such as life cycle emissions, as well as upstream collaboration with suppliers including environmental audits (Kovács, 2008). Supply chains are under increasing pressure related to responsibilities for the

environment. Such responsibilities therefore often involve several supply chains crossing regional and industrial boundaries (Kovács, 2008).

Terminology in supply chain literature related to approaches in managing environmental matters across entities includes sustainable supply network management, green purchasing, supply chain environmental management, green logistics, and sustainable supply chains (Bai & Sarkis, 2010). Maintaining a *greener* supply chain is critical yet it cannot come at the expense of poorer performance. Including a green supplier development program in strategic planning can lead to collaborative responses to environment issues, yet there are few formal models to address this task (Bai & Sarkis, 2010). The more visible environmental practices such as waste and recycling management are usually the focus of supplier collaboration efforts.

Life cycle analyses (LCA) are performed as part of life-cycle management (LCM), which is defined as "the application of life cycle thinking to modern business practice, with the aim to manage the total life cycle of an organization's product and services toward more sustainable consumption and production" (Scientific Applications International Corporation, 2006, p. 5). LCA focuses on "the inputs and outputs of materials and energy with their associated environmental impacts throughout the different stages in the life of a product or process" from "extraction, production, use, and disposal" (Barber, 2007, p. 502). The difficulty with LCA is appropriately mapping all of the inputs and outputs, which are often highly complex or variable.

Organizations such as the Society of Environmental Toxicology & Chemistry (SETAC) have standardized some LCA/LCM practices into ISO 14040 (Barber, 2007). The U.S. Environmental Protection Agency (EPA) and Environment Canada have

developed and supported LCA programs (Barber, 2007). Extended Producer Responsibility (EPR) is a similar program but it focuses on responsibility for end-of-life recycling and waste disposal, in support of LCA ideals, which involve the entire life cycle of a product (Barber, 2007).

Human rights. Human rights issues include paying a living wage to workers and monitoring working conditions, as well as observation of labor laws and regulations (Carter & Jennings, 2004). Abuses can include rights violations, labor discrimination, the destruction of unions, unfair hiring practices, child labor, gender inequity, and discrimination. Companies based in developed countries may have factories in underdeveloped countries that do not support, or have laws regarding, human rights. As a result, workers may be exploited (Ciliberti, Pontrandolfo, & Scozzi, 2008). Human rights also include poverty, defined as subsisting on less than a living wage or less than \$1 per day as a uniform measure of absolute poverty (United Nations Department of Economic and Social Affairs Division for Sustainable Development, 2007).

Philanthropy/community. Philanthropy involves volunteering, donations, and increasing the performance or engagement of suppliers in the community (Carter & Jennings, 2004). Philanthropy includes those activities focusing on the betterment of society rather than on the principal functions of business (Carroll & Shabana, 2010). These types of activities are most often voluntary. Philanthropic and community-focused activities may include funding museums, art programs, or fellowships (Hutchins & Sutherland, 2008). According to a 2007 survey, the median total of philanthropic donations by *Fortune 100* companies in the U.S. was \$46.3 million (Carroll & Shabana,

2010). Corporations such as Wal-Mart, Kroger, and Merck and their employees actively participate in support for disaster relief (Carroll & Shabana, 2010).

Safety. Safety initiatives involve the operation of supplier plants in a safe manner and the secure movement of products to company facilities. Process and occupational safety is of critical importance to organizations, as safety leads to reducing lost production hours and cost. Managers may inspect or monitor the safety records of suppliers (Ciliberti et al., 2008). Regulatory agencies monitor the number of injuries on the job and days lost to injury as a way of identifying the level of safety (Tate et al., 2010).

In addition to being involved with suppliers through PSR activities related to supplier diversity, the environment, human rights, philanthropy/community, and safety, corporate buyers should be aware of collaborative or integrated relationships between suppliers and proactively manage those relationships (Wu et al., 2010). As managers choose to monitor and control these connections, the implications for PSR expand, as organizational reach extends beyond the first-level buyer-supplier interface to second-level suppliers within the value chain. Greater transparency, collaboration, and communication will be required to implement multigenerational supply chain initiatives including CSR through PSR.

Sustainability Accounting, Auditing, and Reporting

Highly publicized events such as the Enron and WorldCom scandals focused public concern on corporate transparency and accountability (Swift & Dando, 2002; Zadek & McIntosh, 2002). Determining the balance of voluntary and statutory reporting, as well as identifying which forms or methods of accounting are appropriate are

emerging themes in research and business literature (Zadek & McIntosh, 2002). In the 1990s, reporting on corporate governance and social responsibility appeared under the label of "social auditing" or "social accounting," which later became "social and ethical accounting, auditing, and reporting" or SEAAR (Freeman et al., 2010). This type of reporting has been popularized in recent years as "sustainability reporting," which generally includes accounting, reporting, and auditing of social, ethical, and environmental activities (Tate et al., 2010).

Stakeholders demand greater accountability, yet public corporate communications often lack substance and auditor independence (Swift & Dando, 2002). The struggle to develop standardized, internationally accepted reporting methodologies for measuring and reporting corporate performance related to these activities continues as firm managers can choose which items to report and how to report them (Freeman et al., 2010). Many sustainability and social audits lack third-party assurance statements or other forms of external verification, leading to criticism that this type of reporting is simply a form of corporate advertising and public relations (Swift & Dando, 2002). However, reporting has become increasingly more popular because of the introduction of voluntary and international reporting standards such as ISO 14000 and others, as well as a desire to reduce the cost of future compliance (Montabon, Sroufe, & Narasimhan, 2007; Morhardt, Baird, & Freeman, 2002).

Voluntary public sustainability reporting has become a high-profile strategic initiative for many organizations (Tate et al., 2010) and in some cases, an expensive strategy. An examination of 45 corporate sustainability reports indicated that reporting and other environmental management practices related positively to firm performance

(Montabon et al., 2007). However, the quality and depth of reports varied because no universal reporting standard exists as there is for reporting financial data (Montabon et al., 2007). Sustainability reporting is relatively new and longitudinal analysis was not possible, highlighting a need for more research into identifying a comprehensive set of environmental management practices (Montabon et al., 2007).

Supplier codes of conduct are often developed to address stakeholder requirements for accountability, yet even these may be inadequate. For example, the Apparel Industry Code of Conduct for U.S.-based apparel firms states that managers have the responsibility to ensure code compliance with suppliers (Amaeshi et al., 2008). However, it is unclear if this duty extends to all members of the supply chain regardless of distance or integration level (Amaeshi et al., 2008). An added difficulty with codes of conduct is relating the static codes across various cultures; what is ethical in one region or cultural area may not be in another.

Identifying universal themes that should appear on sustainability reporting is also difficult and subject to interpretation. Members of the U.N. Division for Sustainable Development (DSD) have created a set of SD themes including poverty; governance; health; education; demographics; natural hazards; atmosphere; land; oceans, seas and coasts; freshwater; biodiversity; economic development; consumption and production patterns; and global economic partnership (United Nations Department of Economic and Social Affairs Division for Sustainable Development, 2007). These topics were gleaned from expert group research and analysis of global trends and indicators. Applying the indicators to corporate sustainability reporting may assist in aligning corporate with global metrics.

In response to the lack of established international metrics, members of the Institute of Social and Ethical AccountAbility launched AccountAbility 1000 (AA1000) in 1999. AA1000 is a set of principles and guidelines designed as a standard of reporting sustainable actions (Freeman et al., 2010). There are other international standards organizations with similar missions, such as GRI and The Sustainability Consortium (Global Reporting Initiative, 2010; The Sustainability Consortium, 2011). Some firm managers have developed their own reporting procedures and unique statements. The shift from simply participating in socially responsible endeavors to organizational accountability represents acknowledgement of stakeholders and their interests (Freeman et al., 2010).

The Global Reporting Initiative (GRI) uses the Sustainability Reporting Framework, developed through dialog with a network of members of organizations from over 60 countries (Global Reporting Initiative, 2011). The Framework includes three handbooks: *Sustainability Reporting Guidelines*, *Protocols*, and *Sector Supplements*. The *Guidelines* provide direction on how to report sustainable actions and programs, and are universally applicable to organizations regardless of size or industry (Global Reporting Initiative, 2011).

The *Guidelines* are currently in the expanded third revision or "G3.1" which were initially released in 2006 as "G3" (Global Reporting Initiative, 2011). G3.1 *Guidelines* represent comprehensive guidelines to enable reporting transparency. Reporting principles related to content, quality, and boundaries, as well as standard disclosures such as strategies, management approaches, and performance indicators make up the G3.1 *Guidelines*. Standard disclosures include environmental, human rights, labor practices,

society, local community impacts, gender, product responsibility, and economics. The Protocols include definitions, methodologies, scope, and other technical and statistical information (Global Reporting Initiative, 2011). The Sector Supplements address issues specific to reporting in various industries that may not be relevant to all industries and define what to report (Global Reporting Initiative, 2011). One of the major advantages to using such a structure is that it provides a standardized approach to reporting, so that comparisons can be made across time, organizations, and industries, so that report users and creators can gauge sustainable corporate actions.

The Eco-Management and Auditing Scheme (EMAS) is a voluntary program sponsored by the European Union (EU) that promotes continuous improvements by establishing and implementing policies, evaluating performance, and submitting evaluations to the public (Glavič & Lukman, 2007). The purpose is to improve environmental performance by using the EMAS management tool (Glavič & Lukman, 2007). Members of the International Organization for Standardization (ISO) developed ISO 14000 series standards to address environmental principles that include auditing, labeling, declarations, performance evaluations, management, and LCAs (Glavič & Lukman, 2007).

An evaluation of sustainability reports showed that there is a wide gap between what organizational managers believe is appropriate content and what the Global Reporting Initiative GRI 2000 guidelines and ISO 14031 standards indicate should be reported (Morhardt et al., 2002). Much of the disparity related to the exclusion of financial information and social reporting depth (Morhardt et al., 2002). The desire to maintain a positive social image as well as proactively addressing social and

environmental concerns appears to be significant motivators for sustainability reporting (Tate et al., 2010).

Ten themes emerged from a content analysis of 100 sustainability reports included supply chain issues such as supplier relationships, institutional pressure, community focus, consumer orientation, external environment, risk management, measures, energy, health, and green building (Tate et al., 2010). All related to 3BL concepts of economic, environmental, and social responsibility (Elkington, 1994), and support the stakeholder theoretical model that organizations have a responsibility to conduct business in an ethical manner (Freeman, 2010). The managerial implications include benchmarking practices and reporting, as well as greater understanding of the role that sustainability actions have on corporate success (Tate et al., 2010).

In the analysis, firms such as Adidas, Wal-Mart, and International Paper exhibited a high theme value of supply chain, which included supplier relationships and LCAs (Tate et al., 2010). Institutional pressure involves handling stakeholder concerns, often through a socially responsible corporate image (Tate et al., 2010). Companies reporting community-focused activities included those engaging in social philanthropy; it is interesting to note that the highest score in this category was from the financial industry (Tate et al., 2010). Consumer orientation focused on brand, product safety, and quality. ConAgra scored high in this area as almost half of its report was dedicated to detailing product images as safe, healthy, and high quality for consumption (Tate et al., 2010).

The external environment theme included environmental corporate responsibility and global systems (Tate et al., 2010). Risk management included some environmental statements such as those related to waste and emissions, as well as product recalls and

accidents (Tate et al., 2010). Measurement was a recurring theme involving reporting, controls, results, and initiatives (Tate et al., 2010). Energy issues including use and conservation also scored high; many reports outlined sustainable and renewable energy policies (Tate et al., 2010). Health-related themes include safety as well as healthcare. Pharmaceutical companies reported efforts to make drugs affordable and available in an effort to enhance brand image by highlighting social activism such as distributing HIV/AIDS drugs around the world (Tate et al., 2010). Green building included facilities management as well as construction. The sustainability report from one of the largest Japanese construction firms, Obayashi Corporation, included information about zero-emissions construction sites (Tate et al., 2010).

The desire for standardized initiatives and reporting procedures has become more prevalent because of pressure from NGOs and other stakeholders (Gilbert & Rasche, 2008). Managers report that these demands require decisions as to how much transparency is needed, along with significant investments in time, labor, and money to quantify and report activities (Gilbert & Rasche, 2008). Differences in standards exacerbate the complexity of reporting. An analysis of four standardized international ethics initiatives revealed differences in how issues, processes, and specificity of norms were addressed (Gilbert & Rasche, 2008). In contrast, the same four standards had themes of micro and macro-level contracts with society. Micro-level contracts included developing local networks with firms and other stakeholders, as well as implementing stakeholder dialog (Gilbert & Rasche, 2008). Macro-level contracts addressed social issues such as human rights, corruption, and the environment, as well as product responsibility (Gilbert & Rasche, 2008).

Surprisingly, few organizational leaders aligned sustainability measures with strategy and integrated them into strategic performance management systems (SPMS) such as balanced scorecards, which typically include goals and data related to finances, customers, internal business processes, and learning and growth (Gates & Germain, 2010). Companies listed on stock markets were more likely to incorporate sustainability reporting, indicating that the growth of socially responsible investing and shareholder activism may play a role in the relative importance of sustainability reporting (Gates & Germain, 2010). Balanced scorecards and other SPMS systems may not adequately reflect sustainability measures because it is difficult to calculate these activities, the activities may cross multiple strategic categories, and the ownership of sustainability measures may not be clear (Gates & Germain, 2010). The execution of sustainable actions rest with operational managers and the workforce, yet strategic goals may not align with implementation, while managers remain responsible for sustainability performance (Gates & Germain, 2010).

Some of the principles of good practice are emerging in social and ethical accounting, auditing, and reporting, including the trend to define the set of activities required to identify and collect information (Zadek, 1999). In addition, the quality of the reporting is subject to assessment, and finally, the support of the process including defining the skills and experiences is becoming more precise and testable (Zadek, 1999). Although sustainability reporting remains unregulated, there does appear to be growing consistency in topics addressed.

Recent progress in sustainability reporting is the development of social and environmental report assurance (SERA), which ensures credibility in reporting and

thereby adding value to sustainability statements (Edgley, Jones, & Solomon, 2010). SERA has been endorsed by the European Union (Edgley et al., 2010). Although there are no mandatory guidelines for SERA, standards developed by AccountAbility, GRI, and two professional accounting groups are included. Initial criticisms of SERA and sustainability accounting in general have been the lack of stakeholder inclusiveness in developing the guidelines (Edgley et al., 2010). However, interview research with accounting and consulting assurers indicated that a significant transformation is underway, as stakeholders have become more closely involved in SERA development (Edgley et al., 2010). One significant obstacle was stakeholder ignorance of assurance statements, which could be addressed by providing more detailed information (Edgley et al., 2010).

Even though firm managers issue public sustainability reports, there is a concern among academics and practitioners regarding "how statements in CSR reports compare with the actual corporate commitment of addressing social and environmental issues" (Tate et al., 2010, p. 21). Several studies have indicated that there is a discrepancy between what actions are occurring and what is being reported, as well as significant inconsistency in how information is being reported (Tate et al., 2010). Sustainability reporting is not legally monitored or mandated, and so no laws are broken if the information is untrue. However, organizations such as The Sustainability Consortium, GRI, and other networks are using peer review and pressure to align methodologies and reporting structures. This study extended knowledge in this area by an investigation into congruence between PSR strategies identified by purchasing managers and firms that submit sustainability reports.

Summary

Consumer awareness regarding social and environmental matters has forced managers to examine the global footprint and societal focus of their firms. This process has shifted the boundaries of stakeholder theory so that CSR and PSR have become integral parts of the strategy and execution of sustainable supply chain management (Freeman, 2010; Leire & Mont, 2010). The 3BL theory expanded the idea that it is possible to relate sustainable values strategies with success by addressing economic prosperity, environmental concerns, and social consciousness (Elkington, 1997).

Integration and collaboration have become important tools to achieve these and other supply chain goals, as evidenced by competitive advantage achieved (Lummus & Vokurka, 1999) and cost reduction (Crook et al., 2008). Supplier behaviors can be projected onto a firm, and early risk assessments and close relationships helped mitigate the risk (Carter & Jennings, 2004; Foerstl et al., 2010). A changing legal and social environment means that managers who have traditionally looked from inside the corporation to the outside must now look from the "outside in" to identify ways to address threats as well as opportunities (Porter & Reinhardt, 2007, p. 23).

Corporations own valuable resources that can be used to ease social and environmental problems (Davis, 1973). Managers engage in CSR activities, which may include stewardship of natural resources and social responsibilities to stakeholders. The procurement function in organizations has become an important conduit for driving socially responsible activities throughout the supply chain (Leire & Mont, 2010). Some of the dimensions of PSR include supplier diversity endeavors, environmental activities, human rights issues, philanthropic acts, and safety requirements (Carter & Jennings,

2004). However, the debate regarding the limitations of corporate liability for human and environmental issue continues, as it is unclear about how to define the scope and extent of corporate liability (Ameshi et al., 2008).

Stakeholders demand greater accountability for resource use and social impacts, and in response, many firms have issued sustainability reports. As a result, sustainability reporting has become a strategic initiative for many companies (Tate et al., 2010), yet reports often vary widely concerning what is reported and reporting methods (Freeman et al., 2010). Reporting CSR activities are essential elements of these reports, as well as buyer-supplier PSR pursuits. Synchronizing strategies by demanding social requirements from supply chain partners such as first-level and even second-level suppliers requires new research into the implications, process drivers, costs, risks, and rewards of CSR for stakeholders.

Chapter 3: Research Method

Public perception about limited resources, environmental crises, and social inequality has increased the call for corporate accountability, yet not all firm leaders provide information about activities in these areas (Henriques & Sadosky, 1999). The problem is that it is unknown whether public sustainability reporting is a true reflection of socially responsible purchasing designed to satisfy stakeholder demands (Beloff et al., 2007). Identifying which forms or methods of accounting as well as balancing voluntary versus statutory reporting are appropriate and emerging topics in operations management research and business literature (Zadek & McIntosh, 2002).

The purpose of this quantitative study was to compare, analyze, and evaluate the dimensions of PSR based on whether or not a firm identifies with voluntary public sustainability reporting. The study was nonexperimental and cross-sectional in design. Firms identified as sustainable were compared to firms not identified as sustainable in terms of five dimensions of PSR: diversity, environment, human rights, philanthropy/community, and safety. The five dimensions relate through CSR and support the idea that business should address the expectations society members have regarding communal economic, social, and environmental responsibilities (Carroll, 1979; Freeman 2010).

After a pilot study, purchasing managers of publicly held firms engaged in buyer-supplier relationships were surveyed using the Walker and Brammer (2009) Purchasing Social Responsibility Questionnaire (PSRQ; Appendix W) modified and identified in this study as the Wolfe PSRQ. The PSRQ was used to identify the levels of organizational PSR engagement for each of five constructs. Higher scores indicate greater levels of

involvement in each PSR dimension. The categorical variable of sustainability status was defined as participation in public sustainability reporting or involvement in sustainability indexes.

To compare dimensions of PSR in firms based on whether the firm is publicly identified as sustainable through voluntary submission of sustainability reports to external organizations or through company communication channels, with firms not associated with same, the following research questions guided the study:

Q1. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of diversity, as measured by the PSRQ?

Q2. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of environmental initiatives, as measured by the PSRQ?

Q3. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of human rights initiatives, as measured by the PSRQ?

Q4. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of philanthropic and community initiatives, as measured by the PSRQ?

Q5. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of safety initiatives, as measured by the PSRQ?

To address the five research questions, the following null and alternative hypotheses were tested:

Q1.

H1₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of diversity, as measured by the PSRQ.

H1_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of diversity, as measured by the PSRQ.

Q2.

H2₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of environmental initiatives, as measured by the PSRQ.

H2_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of environmental initiatives, as measured by the PSRQ.

Q3.

H3₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of human rights initiatives, as measured by the PSRQ.

H3_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of human rights initiatives, as measured by the PSRQ.

Q4.

H4₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of philanthropic and community initiatives, as measured by the PSRQ.

H4_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of philanthropic and community initiatives, as measured by the PSRQ.

Q5.

H5₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of safety initiatives, as measured by the PSRQ.

H5_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of safety initiatives, as measured by the PSRQ.

This chapter includes a discussion of the appropriateness of the research method and design, a description of the participants, information about the materials including the PSRQ survey instrument, and operational definitions of the independent and dependent

variables. Next, a review of data collection methods, data processing, and data analysis are included. A discussion of the methodological assumptions, limitations, and delimitations follows. Chapter 3 continues with a discussion of ethical assurances and standards compliance, and then concludes with a chapter summary.

Research Methods and Design

Quantitative researchers test theories by scrutinizing the relationships among variables. Research design maps the collection of evidence to answer research questions, and strategies of inquiry include experimental and nonexperimental designs (Black, 1999/2009). Experimental research describes the effect of a treatment or non-treatment on an outcome. Nonexperimental designs such as survey research used in this study gather information from a sample of a population to draw generalizations about the population (Borrego, Douglas, & Amelink, 2009). Measurement expresses observations as numbers and operational definitions include rules for measuring variables (Black, 1999/2009; Vogt, 2007), and conclusions are drawn from the measured interactions between the variables. Research is evaluated based on relevance, rigor, and feasibility, as well as if generalizations can be made and if the research is replicable.

A quantitative research methodology was selected as most appropriate for this study. Nonexperimental design was most appropriate in this research as there was no attempt to control the conditions or manipulate the target phenomenon; instead, variables are measured. Specifically, this type of design was chosen because preexisting groups were compared. The groups consisted of whether the participants' organization was in a sustainability category (defined for the purpose of this research as whether the firm is identified as sustainable through voluntary public submission of sustainability reports to

external organizations or through company communication channels) or not. Participants could not be randomly assigned to these groups, and so the research design was nonexperimental rather than experimental.

A quantitative methodology provides an objective view of numerical data used to determine statistically significant differences between two groups (Borrego, Douglas, & Amelink, 2009). In the current study, group differences between sustainable firms and nonsustainable firms were examined. Statistics were used to quantify the group differences, and results will be more easily generalized to the larger population and thereby more valuable to operations research.

One advantage of using a quantitative methodology for this study is that the survey data could be analyzed separately from the researcher's involvement, so that objectivity is preserved (Borrego et al., 2009). The researcher's opinions did not influence the data. The topics of sustainability and CSR are strategic initiatives, and it is important that the study results reflected an accurate portrayal of the status of corporate involvement and reporting. The use of survey research has increased in studies of operations management, which includes supply chain management (SCM; Rungtusanatham et al., 2003). Surveys have received greater peer acceptance in the field as SCM researchers employ greater rigor and adherence to research principles (Rungtusanatham et al., 2003). Surveys such as the PSRQ can provide insight into elements that help to explain sources and reasons for events, and examine the relative importance of each variable (Babbie, 1997).

Previous studies using the PSRQ used quantitative approaches effectively, and modeling this approach in a contemporary setting is appropriate. The survey questions

pertaining to PSR were Likert-scaled, have proven reliable and valid through multiple uses (Appendix A), and yielded numerical data for quantitative analysis. Another advantage of using quantitative methodology for this study was that participants were familiar with survey research and inclined to answer a well-formatted and concise questionnaire, rather than submit to interviews as would be the case if a qualitative research methodology was selected. Coding qualitatively collected interview data must occur before any analysis is undertaken, and such coding with large samples is time consuming. The topics of sustainability and CSR are important and timely in the field of operations research and managerial practical application. The cross-sectional survey administered in this study was economical in that survey data was collected within a short time frame for efficient analysis and participants had simple online access through the Internet.

Participants

Participants were purchasing managers who make strategic decisions, including supplier selection and monitoring. Companies were listed on the New York Stock Exchange (NYSE) North America, NASDAQ, or AMEX as of the survey date. A data download of the North American company list on May 21, 2011, indicated 5,588 companies representing 134 industries fit these criteria (Appendix B; NASDAQ, 2011). The geographic restriction to North American companies was necessary to ensure that there were no language barriers to prohibit understanding of the survey questions. Demographic and industry category questions were included in the questionnaire, as demographic characteristics and industry sectors of individuals in the sample varied. Mailed invitations to participate were addressed to purchasing managers. Participation

was voluntary and so those choosing to complete the survey were willing and not coerced. Participants were allowed to skip any questions other than the informed consent and sustainability reporting questions. Companies were categorized as sustainable or not sustainable based on participants' answers to a specific question on the survey.

The study employed a between-subject design where variables were controlled for to calculate MANOVA parametric tests and Mann-Whitney nonparametric tests using SPSS 19.0. An *a priori* power analysis was conducted prior to the study using G*Power 3.1 software to determine the appropriate sample size for the study with the planned MANOVA analysis. Assuming a medium effect size $f_2(V)$ of 0.25, a two-tailed test, an alpha significance level of 0.05, a power ($1 - \beta$ error probability) of 0.80, two groups, and 5 response variables, the *a priori* power analysis indicated at least 58 surveys must be included in the study.

Materials/Instruments

Data was collected in this study by means of a survey originally developed by Carter and Jennings (2004; Appendix D) measuring dimensions and drivers of PSR, and modified and improved by others (Carter, 2004; Salam, 2009; Walker & Brammer, 2009). The PSRQ survey instrument has been used in several studies with diverse populations to analyze data related to PSR (Appendix A). The Walker and Brammer (2009) version of the PSRQ (Appendix E) with modifications recommended in the pilot study was used in the study. The modified survey is identified as the Wolfe PSRQ (Appendix G). Table A1 (see Appendix A) displays the uses of the PSRQ in academic research. The study was not exploratory; rather, it extended the findings of prior applications of the PSRQ.

The original Carter and Jennings (2004) PSRQ was developed based on a literature review and in-depth interviews with 26 purchasing, transportation, and warehousing managers carried out in a earlier study by the same researchers (Carter & Jennings, 2002). The purpose of the interviews in the Carter and Jennings 2002 study was to build a more complete understanding of elements of and reasons for employing logistics social responsibility (LSR), which included PSR, or purchasing social responsibility (Carter & Jennings, 2002; Carter & Jennings, 2004). The scope and identification of LSR activities developed through interviews with purchasing, transportation, and warehousing managers who were members of the Council of Logistics Management and represented a wide variety of industries. Rather than using *a priori* sample size, the researchers continued interviewing until they reached a "point of saturation or redundancy in each of the functional areas" (Carter & Jennings, 2002, p. 150).

These qualitative interviews with purchasing, transportation, and warehousing managers pinpointed broad categories of environment, ethics, diversity, safety, working conditions and human rights, and philanthropy and community involvement (Carter & Jennings, 2002). Interviews with purchasing managers resulted in a list of socially responsible activities specific to buyer-supplier relationships identified as logistics social responsibility (LSR; Table 1). These socially responsible activities formed the framework for later investigations into PSR and were foundational to the first PSRQ developed by Carter and Jennings (2004). Subsequent research has continued to support these activities and their relationship to PSR (Salam, 2009; Walker & Brammer, 2009), as well as the reliability of the PSRQ.

Table 1

*Purchasing Involvement in LSR***Environment**

- Ensuring that supplier processes and products are environmentally sound
- Sourcing from environmentally sound suppliers
- Purchasing recyclable and reusable packaging and containers
- Using life cycle analysis
- Participating in design for reuse and recycling
- Identifying and sourcing nonhazardous alternatives
- Ensuring proper labeling, documentation and packaging of hazardous materials
- Reducing packaging materials

Ethics: Avoiding the following:

- Using obscure contract terms to gain an advantage over suppliers
- Misleading a salesperson during a negotiation
- Inventing (making up) a second source of supply to gain competitive advantage
- Exaggerating the seriousness of a problem to gain concessions
- Giving preference to suppliers preferred by top management
- Writing specifications that favor a particular supplier
- Blaming suppliers for mistakes made by purchasing
- sharing information about suppliers with their competitors
- Overestimating demand to gain volume discounts

Diversity

- Purchasing from minority/women business enterprise (MWBE) suppliers

Human Rights

- Ensuring suppliers do not use sweatshop labor
- Ensuring suppliers comply with child labor laws
- Asking supplier to pay a "living wage"

Safety

- Ensuring suppliers' locations are operated in a safe manner
- Ensuring the safe, incoming movement of purchased materials

Philanthropy/Community

- Helping to develop local suppliers
- Auctioning or donating gives received from suppliers

Note. (Carter and Jennings, 2002, p. 153).

Based on these findings regarding purchasing involvement in CSR, the Carter and Jennings (2004) PSRQ instrument was initially administered to purchasing personnel of U.S. consumer products manufacturing firms. Participants had a title of supervisor or higher and were members of the Institute for Supply Management (ISM). The PSRQ was modified after additional discussions with purchasing managers and a pilot test. Carter and Jennings (2004) used first-order confirmatory factor analysis (CFA) to assess how well dimension variables measured the constructs of PSR and eliminated scale items with low factor loadings. Fit statistics for the measurement model included $\chi^2/\text{degrees of freedom}$ ratio (1.388), Bentler's comparative fit index (CFI; 0.967), Bentler and Bonnett's non-normed fit index (NNFI; 0.958), and the root mean square error of approximation (RMSEA; 0.45). Fit for $\chi^2/\text{degrees of freedom}$ is identified as below 3.00, CFI and NNFI values above 0.90, and values of 0.08 or less on RMSA; all values in the first-order CFA represented acceptable fit. A second-order CFA also indicated fit, i.e. that purchasing activities related to diversity (0.52979; $t = 6.01$), the environment (0.7363; $t = 9.18$), human rights (0.8528; $t = 11.89$), philanthropy (0.6627; $t = 7.38$), and safety (0.7930; $t = 10.19$) were relevant dimensions of PSR.

The PSRQ was used again with a significantly broader group of industries (Carter, 2004). This sample included 201 ISM managers and affiliates with the title of manager or higher in a diverse group of manufacturing and service industries. The reliability and validity of the PSRQ was confirmed once again. The PSRQ survey was used in a replication study (Salaam, 2009) with a sample of 197 purchasing and supply chain managers in consumer products firms with membership in the Purchasing Association of Thailand. Walker and Brammer (2009) used the PSRQ to investigate

sustainable procurement in the United Kingdom public sector after an expert panel reviewed modifications. The questionnaire was piloted with 10 procurement officers to ensure face validity and efficacy (Walker & Brammer, 2009). One hundred and six participants were included in this study.

The PSRQ meets the criteria of identifying PSR dimensions in organizations, and procurement managers with knowledge of organizational strategies will have the knowledge to answer the questions. The Walker and Brammer (2009) version of the PSRQ (Appendix E) includes a sustainable procurement section that consists of 16 items measured on a Likert-type scale, with values ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The five PSR subscales in the instrument are concerns for diversity, the environment, human rights, philanthropy/community, and safety (Carter, 2004; Carter & Jennings, 2002; Carter & Jennings, 2004; Salam, 2009; Walker & Brammer, 2009). The scales can be used even if not all of the PSR dimensions apply to a participant's company. Permission was obtained from Drs. Walker and Brammer for the use of the PSRQ (Appendix F).

Prior to using the Walker and Brammer PSRQ (Appendix E) in the pilot study, British words were replaced with American spellings. Questions 5 and 6 were worded in such a way as to indicate public sector groups; these questions were replaced with questions regarding NAICS industry sector (Appendix C) and sustainability status. The PSRQ consists of 25 questions in two sections: general questions and sustainable procurement plus the informed consent acknowledgement.

The final version of the survey with pilot study recommendations is identified as Wolfe PSRQ (Appendix G). Table 2 shows the subject of each question in the Wolfe PSRQ.

Table 2

Wolfe PSRQ Questions

Question number	Subject
Welcome and introduction	
Q1	Informed consent acknowledgement (required question)
General questions: You and your organization	
Q2	Sustainability reporting (required question)
Q3	Job title
Q4	Responses relate to organization as a whole or a business unit
Q5	Number of employees
Q6	NAICS Industry Classification
Q7	Purchasing decision-making (centralized, local, or blended)
Sustainable procurement (SP)	
Q8	Sustainable procurement
Q9	Suppliers and sustainability
Q10	Key environmental and socially responsible concerns
Q11	Management commitment and environmental attitude
Q12	Results from socially responsible activities
General procurement	
Q13	Uncertainty of supply
Q14	Supplier commitment
Q15	Strategy supply
Q16	Communication and information technology
Q17	Annual purchasing spend
Q18	Categories of goods and services
Q19	Average supplier contract length
Q20	Number of suppliers
Q21	Change in number of suppliers
Q22	Spend with top suppliers
Open ended questions	
Q23	Sustainable procurement example
Q24	Obstacles to sustainable procurement
Q25	Facilitating sustainable procurement
Q26	Additional comments

All of the dependent variables are interval-level variables measured on a 5-point Likert-type scale, with values ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The sustainable procurement (SP) portion of the questionnaire identified as questions 8 through 12 addressed the five constructs of PSR. Question 8 includes 16 sub-questions, identified as 8a through 8p. Supplier diversity (Y_1) was measured as the mean score for questions 8b, 8e, 8h, and 8o of the Wolfe PSRQ. Environment (Y_2) was measured as the mean score for questions 8a, 8c, 8g, 8j, and 8p of the Wolfe PSRQ. Human rights (Y_3) was measured as the mean score for questions 8i, 8k, and 8n of the Wolfe PSRQ. Philanthropy/community (Y_4) was measured as the mean score for questions 8f, and 8l of the Wolfe PSRQ. Safety (Y_5) was measured as the mean score for questions 8d, and 8m of the Wolfe PSRQ (Table 3).

Question 9 posed statements about suppliers and sustainability. Question 10 allowed rating of four key environmental concerns for the participants' organizations. Question 11 asked for level of agreement on managerial commitment and environmental attitude. Question 12 posed statements about the results of undertaking socially responsible activities. Questions 9, 10, 11, and 12 were ancillary variables and statistical analysis was performed to advance understanding about strategic sustainability. Questions 13-22 were general questions related to procurement. Questions 23 through 26 provided opportunities for text answers. Question 23 asked for an example of a current sustainable (or socially or environmentally responsible) procurement initiative. Question 24 asked for a response to what prevents sustainable (or socially or environmentally responsible) procurement in the organization. Question 25 asked about what facilitates

sustainable procurement, and question 26 was open text for any other comments the participant would like to contribute.

Operational Definition of Variables

The five PSR dimensions measured are dependent variables ($Y_{\#}$) and included supplier diversity, environment, human rights, philanthropy/community, and safety. Sustainability status was identified as the independent variable ($X_{\#}$). The constructs were as follows:

Sustainability status. Sustainability status was operationally defined as whether the firm is identified as sustainable through voluntary public submission of sustainability reports to external organizations or through company communication channels. The independent variable for this study was sustainability status, a nominal or categorical variable identified with subscripts 0 (*not sustainable*) or 1 (*sustainable*). Sustainability status was designated as X_0 and X_1 .

Diversity. Supplier diversity (SD) was measured as an interval-level variable by having respondents select their level of agreement with statements about purchases from minority and women owned business enterprises (MWBE) and formal MWBE supplier purchase programs. Programs that support SD include those with the objectives of providing buying opportunities to small firms, businesses owned by women, or those owned by ethnic minorities. Minority purchasing and supplier development programs can be legally mandated or voluntary (Worthington, 2009). In addition, there were two questions related to purchases from small and local suppliers, identified as important aspects of supplier diversity (Walker & Brammer, 2009). The 5-point Likert-type scale

included scales strongly disagree, disagree, neither agree or disagree, agree, and strongly agree. Diversity was designated as Y_1 .

Environment. Environmental initiatives were measured as an interval-level variable by having respondents select their level of agreement with statements about the presence of life-cycle analysis, participation in design of products for recycling and reuse, commitment to waste reduction goals, participation in design of products for disassembly, and reduction of packaging material. The ecological aspect of CSR, or corporate environmental responsibility (CER), includes downstream effects such as life cycle emissions as well as upstream collaboration with suppliers including environmental audits (Kovács, 2008). Supply chains are under increasing environmental pressure such that responsibility spills across several supply chains over regional and industry boundaries (Kovács, 2008). The 5-point Likert-type scale included scales strongly disagree, disagree, neither agree or disagree, agree, and strongly agree. Environment was designated as Y_2 .

Human rights. The human rights variable was measured as an interval-level variable by having respondents select their level of agreement with statements about supplier sweatshop labor, child labor compliance, and wages. Human rights issues involve paying a living wage to workers and monitoring working conditions. Companies based in developed countries may have factories in underdeveloped countries that do not support or have laws regarding human rights, and exploitation of workers may occur (Ciliberti et al., 2008). The 5-point Likert-type scale included scales strongly disagree, disagree, neither agree or disagree, agree, and strongly agree. Human rights was designated as Y_3 .

Philanthropy/community. Philanthropy/community was measured as an interval-level variable by having respondents select their level of agreement with statements about volunteering with local charities and donations to philanthropic organizations. Philanthropy includes those activities focusing on the betterment of society rather than on the principal functions of business, such as funding museums, art programs, or fellowships (Hutchins & Sutherland, 2008). The 5-point Likert-type scale included scales strongly disagree, disagree, neither agree or disagree, agree, and strongly agree. Philanthropy/community was designated as Y₄.

Safety. Safety was measured as an interval-level variable by having respondents select their level of agreement with statements about suppliers' plants operating in a safe manner and the safe movement of product to company facilities. Process and occupational safety is of critical importance to organizations, as it will lead to reducing lost production hours and cost. Managers may inspect or monitor the safety records of suppliers (Ciliberti et al., 2008). The 5-point Likert-type scale included scales strongly disagree, disagree, neither agree or disagree, agree, and strongly agree. Safety was designated as Y₅.

Table 3 includes a summary of the variables used in the study. The table provides a description, along with the type and classification of variable, Wolfe PSRQ questions related to each, and scoring method. There are five dependent variables and one independent variable.

Table 3

PSRQ Dependent Variables and Scoring Methodology

Variable	Dependent / Independent	PSRQ Questions	Variable Type	Scoring Method	Scoring
Supplier diversity (Y ₁)	Dependent	8b, 8e, 8h, 8o	Interval	Likert-type scale, 1 through 5	Sum of questions divided by 4
Environment (Y ₂)	Dependent	8a, 8c, 8g, 8j, 8p	Interval	Likert-type scale, 1 through 5	Sum of questions divided by 5
Human rights (Y ₃)	Dependent	8i, 8k, 8n	Interval	Likert-type scale, 1 through 5	Sum of questions divided by 3
Philanthropy/Community (Y ₄)	Dependent	8f, 8l	Interval	Likert-type scale, 1 through 5	Sum of questions divided by 2
Safety (Y ₅)	Dependent	8d, 8m	Interval	Likert-type scale, 1 through 5	Sum of questions divided by 2
Sustainability status (X ₀ and X ₁)	Independent	2a, 2b	Nominal	Single-item score	Single-item score

Data Collection, Processing, and Analysis

This quantitative nonexperimental cross-sectional study incorporated five phases: a pilot study using the Walker and Brammer PSRQ, data collection using the updated survey and identified as the Wolfe PSRQ, data processing, analysis, and reporting. Outreach to survey participants included invitations sent to purchasing managers at business addresses randomly selected North American firms listed with the New York Stock Exchange (NYSE), NASDAQ, and AMEX. The Wolfe PSRQ was used to test null and alternative hypotheses for each of the dimensions to address the following research

questions that involve comparisons of PSR in firms based on whether the firm is publicly identified as sustainable:

Q1.

H1₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of diversity, as measured by the PSRQ.

H1_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of diversity, as measured by the PSRQ.

To examine hypothesis 1, a MANOVA was conducted to assess if sustainability status influences a response in supplier diversity strategies. MANOVA tests whether mean differences among groups on a combination of dependent variables are likely to occur by chance. Subsequently, nonparametric Mann-Whitney analysis was used. If organizations identified as sustainable have higher mean scores for diversity, this helps to explain differences in the two groups.

Q2.

H2₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of environmental initiatives, as measured by the PSRQ.

H2_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as

sustainable in terms of environmental initiatives, as measured by the PSRQ.

To examine hypothesis 2, a MANOVA was conducted to assess if sustainability status influences a response in environmental strategies. MANOVA tests whether mean differences among groups on a combination of dependent variables are likely to occur by chance. Subsequently, nonparametric Mann-Whitney analysis was used. If organizations identified as sustainable have higher mean scores for environment, this helps to explain differences in the two groups.

Q3.

H3₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of human rights initiatives, as measured by the PSRQ.

H3_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of human rights initiatives, as measured by the PSRQ.

To examine hypothesis 3, a MANOVA was conducted to assess if sustainability status influences a response in human rights initiatives. MANOVA tests whether mean differences among groups on a combination of dependent variables are likely to occur by chance. Subsequently, nonparametric Mann-Whitney analysis was used. If organizations identified as sustainable have higher mean scores for human rights, this helps to explain differences in the two groups.

Q4.

- H4₀.** Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of philanthropic and community initiatives, as measured by the PSRQ.
- H4_a.** Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of philanthropic and community initiatives, as measured by the PSRQ.

To examine hypothesis 4, a MANOVA was conducted to assess if sustainability status influences a response in philanthropic and community initiatives. MANOVA tests whether mean differences among groups on a combination of dependent variables are likely to occur by chance. Subsequently, nonparametric Mann-Whitney analysis was used. If organizations identified as sustainable have higher mean scores for philanthropy/community, this helps to explain differences in the two groups.

Q5.

- H5₀.** Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of safety initiatives, as measured by the PSRQ.
- H5_a.** Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of safety initiatives, as measured by the PSRQ.

To examine hypothesis 5, a MANOVA was conducted to assess if sustainability status influences a response in safety initiatives. MANOVA tests whether mean differences among groups on a combination of dependent variables are likely to occur by chance. Subsequently, nonparametric Mann-Whitney analysis was used. If organizations identified as sustainable have higher mean scores for safety, this helps to explain differences in the two groups.

H5_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of safety initiatives, as measured by the PSRQ.

Before administering the pilot study, the Northcentral University Institutional Review Board (IRB) reviewed plans and parameters for data collection and granted approval on April 15, 2011 (Appendix H). The Walker and Brammer PSRQ (Appendix E) used in the pilot study consisted of 25 questions in two sections: general questions and sustainable procurement. Prior to the pilot study, British words such as *organisation* were replaced with American spellings and the monetary unit was changed from British pound (£) to American dollars (\$). Original questions 5 and 6 were worded in such a way as to indicate public sector groups; these questions were replaced with questions regarding industry sector and sustainability status.

The pilot test was conducted to provide feedback and advance warning about any corrections, deletions, or additions to be made before extending official survey invitations to participants. In addition, the pilot test invited comments about the relevance of questions as related to the research intent. Pre-testing the instrument in this way contributed to ensuring reliability and validity of the PSRQ relative to the contemporary

sample population. Eleven supply chain experts knowledgeable about purchasing strategies participated in the pilot study. The expert panel recommended changes that included adding a question related to job title, modifying the question related to number of employees, removing repetitive language in the introduction, and moving the sustainable procurement section closer to the beginning of the survey to ensure logical flow.

The modified version identified as the Wolfe PSRQ (Appendix G) had four sections including a welcome and introduction (informed consent acknowledgement and question 1), general questions (questions 2-7), sustainable procurement (questions 8-12), general procurement (questions 11-22), and open-ended questions (questions 23-26; Table 2). Question 2 allowed multiple-choice self-identification into two groups: sustainable companies and those not identified as sustainable. Respondents chose answers from Likert-type scales for each question on the SP portion of the survey. There were four open-ended questions at the end of the questionnaire.

So that the sample represented the population, stratified random sampling, or dividing the chosen population into subgroups with related characteristics, was used in relation to industry groups identified in the company listing identified as Industry Count, NASDAQ, NYSE, AMEX North America List as of May 21, 2011 (Appendix B). Company addresses and other identifying information were collected into a database. A number was assigned to each and companies were selected using the random sample function (RAND) in Microsoft Excel 2007® in each of 12 broad industry groups, which included Basic Industries, Capital Goods, Consumer Durables, Consumer Non-Durables, Consumer Services, Energy, Finance, Health Care, Miscellaneous, Public Utilities,

Technology, and Transportation subdivided into 134 industries. Random selection ensured that each member of the population had an equal chance of selection for survey participation. In the survey, participants were asked to use the North American Industry Classification System (NAICS; NAICS Association, 2009) to classify their company to an industry category as structured by the NAICS in PSRQ question 6. NAICS sectors are broadly defined segments that overlap Industry Count groupings and are characterized differently (Appendix C).

The first screen of the online survey contained a welcome statement and the informed consent form, which included an explanation of the purpose, a list of the potential risks, as well as the benefits of participating in the research. Participants read the statement that participation was voluntary and responses will remain anonymous. Participants were able to withdraw or discontinue the survey at any time. The final statement included the consent to participate statement: *I agree to participate in the research. I have read the description of the study, "Dimensions of Purchasing Social Responsibility in Sustainable Supply Chain Organizations," and understand the conditions of participation. This choice will take me to the electronic survey.* Participants chose between "I agree" or "No, Thank You." If the "No, Thank You" link was selected, the survey closed and a final screen thanked participants for their time. Participants who chose to participate saw a thank you screen at the end of the survey.

No monetary incentives for answering the survey were offered. However, at the close of the survey, participants were able to choose to enter their names in a drawing for a \$100 Visa gift card. Survey invitations (Appendix I) were sent via postal mail addressed to "Purchasing, Sourcing, or Procurement Manager" to ensure that participants

were knowledgeable about organizational PSR efforts so that sustainability status could be coded. Invitations included a link to a self-administered online survey and reminders were mailed to encourage participation. The survey was hosted on the web site SurveyMonkey using a uniquely assigned Uniform Resource Locator (URL). Internet surveys are advantageous as they provide a high degree of anonymity and privacy. The Carter and Jennings (2004) PSRQ respondents also accessed the questionnaire via a similar Internet link. An executive summary of the study findings and results was made available upon request. Reminder postcards (Appendix J) were mailed three weeks after the initial contact. One thousand three hundred thirty-four invitations were mailed, five were returned to sender as undeliverable, 86 surveys were started in SurveyMonkey, 8 were aborted at the beginning of the survey, and 78 surveys were completed.

Response data collected by SurveyMonkey was downloaded and stored using Microsoft Excel 2007® file format. Data for the SP portion of the PSRQ was uploaded into SPSS version 19.0 statistical software, where it was reviewed and inspected for missing entries and outliers as well as for reliability before statistical analysis. Mean, standard deviation, and normality was reported for Questions 8a through 8p, followed by hypotheses testing. Median, mode, inter-quartile range, and minimum/maximum scores were reported for demographic questions including job title (Q3), number of employees (Q5), and NAICS business sector (Q6).

It was anticipated that the multiple dependent PSR variables would be substantially correlated because they are indicators of the principal construct of CSR. Therefore, it was determined that a statistical technique that is fitting when dependent variables are correlated should be used, and MANOVA was selected as the appropriate

technique. Additionally, the dependent variables are interval-level. MANOVA provides an opportunity to "analyze data with multiple measures of the same construct" (Warner, 2008, p. 712). The associations between dependent variables were tested for significance, direction, and magnitude.

Data was grouped by clear definitions relevant to the research questions (e.g., sustainable or nonsustainable). To analyze the differences between the sustainable group and the nonsustainable group, a MANOVA was conducted using data from Q8a-Q8p. A one-way MANOVA was chosen to evaluate group mean differences, evaluate effects, and assess interactions for multiple dependent variables and one categorical independent variable. MANOVA was used in preference to separate independent samples *t* tests for each dependent variable, because the dependent variables have been shown to be not fully independent of each other; rather they are related as part of socially responsible procurement policies (Carter & Rogers, 2004; Carter & Rogers, 2008). SPSS version 19.0 provided a table of the tests of between-subjects effects that includes type III sum of squares, degree of freedom (*df*), mean squares, *f*-test statistics, and significance. The observations were independent because random sampling was used. Normality was tested, but assumed prior to the investigation. After testing for MANOVA assumptions, Mann-Whitney nonparametric analyses were conducted.

Four assumptions must be met for MANOVA: (a) the sample must be randomly selected from the population, (b) observations must be independent of each other, (c) each dependent interval-level variable must be normally distributed, and (d) within-group homogeneity of variance should be the same for both groups (Bray & Maxwell, 1985). Violating the assumptions does not necessarily invalidate MANOVA, although

assumption violations reduce the robustness of the results (Bray & Maxwell, 1985).

Before running MANOVA, data was tested for the four assumptions, normality, and outliers.

Homogeneity of variances was computed using the error variance (SS error) by adding the sum of squares within each status group (French, Macedo, Poulsen, Waterson, & Yu, 2008). Wilks' lambda (λ) was used to test mean differences in the two groups based on the combinations of PSR dimensions. SPSS version 19.0 converted Wilk's λ to an F distribution; if λ is significant, "it implies that there is at least one significant contrast between groups and this difference can be detected when the entire set of outcome variables is examined" (Warner, 2008, p. 715).

Nonparametric Mann-Whitney tests were conducted to verify the conclusions from the parametric tests. Mann-Whitney statistical analysis is an alternative to the *t*-test without assuming the normality of the sample distribution. MANOVA tests for differences in the means of the two groups and Mann-Whitney tests for differences in the medians of the two groups. Observations from both groups were ranked together and the number of times scores from one group that preceded the scores from the other group, the score was counted. The Mann-Whitney test can be used effectively on informetric data to determine if independent samples arise from the same population (Huber & Wagner-Döbler, 2003; Nachar, 2008). It is one of the most common nonparametric tests used in research and analysis. In addition, the test is particularly useful when sample sizes are small or a test with minimal constraints is required when assumptions are not met for parametric procedures, as in this study (Nachar, 2008).

Methodological Assumptions, Limitations, and Delimitations

The study was based on several assumptions, including that members of the focus population would respond to survey invitations. The most important assumption was that the information collected would provide insight into the level of social responsibility exercised by the purchasing departments of publicly traded North American companies, including some that have public sustainability reporting procedures and some that do not. In addition, it was assumed that the sample was representative and findings were generalizable to the population and the numerical data can be used to determine statistically significant differences between groups (Borrego et al., 2009).

A possible limitation of the study was nonresponse bias, or the effect of nonresponses on the survey data that would have changed the results if responses had been received. Potential for nonresponse bias in survey research must be recognized because of the possibility that those who did not participate may have slightly different characteristics from those who participated (Fowler, 2009). There is no universally accepted response rate requirement and some studies indicate response rate may be related to participants' level of interest in the topic (Fowler, 2009). Low response rates are a common dilemma reported by researchers using surveys, and often result in small data samples with decreased statistical power and generalizability (Rogelburg & Stanton, 2007). In this study, 78 usable surveys were collected from 1,334 invitation packets representing a response rate of 5.85%, which may affect the generalizability of the findings to the population. Techniques to increase response rate used in this study were publicity, careful design, offer of an incentive, reasonable survey length, reminders, communication of importance of the survey, and offering feedback in the form of an

executive summary (Rogelburg & Stanton, 2007). Additionally, nonresponse bias could be analyzed by replicating the study with the remainder of the population and weighting survey results to compensate for nonresponse (Brick & Bose, 2001).

Preserving anonymity may have helped to dispel fears that answers were used for any purpose other than that which was expressly stated. Over half of the respondents (56.4%) reported organizational engagement in sustainable reporting. Those who participated in the survey may have been proud of their organization's sustainability strategies and thus more willing to participate, leading to overestimation of the percentage of companies within the population with these strategies. Conversely, an invitation to a sustainability survey may have been declined by individuals without such strategies because of reluctance to admit to lack of participation or interest in the subject.

Respondents chose NAICS industry sectors and there was no attempt to verify this information to preserve anonymity. There are 20 NAICS industry sectors (Appendix C) compared to 134 identified in the Industry Count, NASDAQ, NYSE, AMEX North America List (Appendix B). Most respondents indicated association with NAICS manufacturing sector (23%). There is no specific manufacturing category in the NASDAQ Industry Count, but rather manufacturing is included in many categories. Purchasing managers of manufacturing firms may be more likely to respond to a sustainability survey because of their procurement of raw materials and awareness of related environmental concerns. Ten per cent provided no NAICS sector information, which may indicate that unfamiliarity with NAICS sector definitions or the changing nature of large corporations that may have many sectors, business units, and divisions within one organization.

It is possible for respondents to have misinterpreted the questions, misunderstood the directions, read more into the questions than what was asked, or marked their answers improperly. Participants may not have known the answers to the questions, or misrepresented the truth consciously or unconsciously. Answers to previous questions may have had some influence on answers to following questions. Respondents may have grown tired of the survey and exited it prematurely. Care was taken to make the directions clear and accurate and a progress bar showed how many questions were left as participants moved through the survey. To lessen bias, participants were informed that answers would remain anonymous and a random drawing for a gift card was held. Invitations were addressed to purchasing managers, as these would have knowledge of corporate purchasing policies. However, it is possible that individuals without this knowledge could have completed the survey, resulting in underreported or exaggerated responses.

Delimitations are those characteristics that limited the scope of the study, such as selecting a specific population. In this study, the sample was drawn from North American publicly traded firms listed on the NYSE, NASDAQ, or AMEX. This purposeful act excluded firms not listed on these exchanges and those not based in North America, as well as public entities such as municipal organizations, all of which may have relevant purchasing strategies. Generally, listed companies are large enough to have dedicated purchasing departments, controlling procedures, and strategic initiatives. Another significant delimiter was the purposeful narrowing of the study scope by choosing to investigate specific activities previously defined as PSR dimensions. Business and operations management are dynamic, and so the survey may not have fully

captured the changing social responsibility strategies of all organizations. Other delimiting factors are the sample size, the use of a survey that requires Internet access, and the time limited survey response period. It was desired that only purchasing managers take the survey, thereby limiting the sample and ensuring that respondents are knowledgeable about corporate PSR strategies.

Just as the strength of a wall is related to the quality of the bricks from which it is composed, so is research is gauged by the validity and reliability of the study design. It should measure what it was intended to measure, correctly relate to the larger population beyond the sample, and adequately assess the variables in question providing the researcher with legitimate inferences. In this study, validity provided a contextual frame of observation and reliability ensured that the information was accurate and dependable. Validity also refers to the interpretations made about the research; inferences that are drawn should be legitimate. Reliability refers to the quality of the measurement and is the degree to which a measure is consistent and provides error-free data. If it is possible to reproduce results in a successive study, the instrument is reliable. The PSRQ has been shown to be both reliable and valid through multiple uses and analysis. In order to have validity in a study, data must be reliable, yet a study can have reliability yet be lacking in validity if research interpretations are incorrect. Threats to these principles can circumvent or deteriorate the research, creating measurements that neither advance nor support the theoretical framework.

The concept of validity is connected to whether the instrument, proposition, conclusion, or inference accurately evaluates what the researcher intended (Vogt, 1997). *The intent of this study is to evaluate corporate purchasing policies within the context of*

sustainable development. The instrument was a pre-existing questionnaire developed through exploratory interviews with purchasing, transportation, and warehousing managers (Carter & Jennings, 2002). Carter and Jennings derived the scales from prior studies, interviews, a literature review, a pretest, and a pilot test. Others expanded and improved on the PSRQ (Salam, 2009; Walker & Brammer, 2009). The Walker and Brammer (2009) version of the PSRQ with pilot study recommendations was used in the study. Construct validity is the extent to which the instrument measures what it is intended to measure and the PSRQ has proven appropriate for an inquiry of this type into PSR dimensions within an organization. To address validity concerns, a pilot study submitted the PSRQ for review and analysis before the focus study.

Survey instrument questions must reflect reliability, which refers to consistency in repeated observations (Babbie, 1997; Vogt, 2007). Cronbach's alpha was used to measure internal consistency and reliability of the scales (Black, 1999/2009). Questions must be carefully phrased and clear, so that if the survey were given a second time to the same subjects, there would be little or no variability in their responses. In this study, the questionnaire and scales have been used in several studies with diverse populations, and it has proven reliable in each. The pilot study also addressed these reliability concerns.

Replication of a prior study adds to knowledge in the field, as the concepts remain the same but the subjects and timing are changed and results are verified (Vogt, 2007). Replication and cumulative research within the field of operations management also leads to deeper insights, extended generalizability, and broadened advances in research (Frohlich & Dixon, 2006). Continual testing of ideas is valuable and leads to greater assurance of reliability and validity. The use of a validated and reliable questionnaire in

this study will extend research to a new sample of organizations, some of which are publicly sustainable and some that are not. This type of sample has not been drawn using the PSRQ, although other populations have been sampled, including a selection of supply chain industry leaders (Carter, 2004), public sector firms in the United Kingdom (Walker & Brammer, 2009), and corporate members of the Purchasing Association of Thailand (Salam, 2009). Appendix A includes the uses of the PSRQ in academic research and includes topics, participants, methodologies, instrument type, and source.

Ethical Assurances

Before gathering data for the study, written permission was obtained from the Institutional Review Board (IRB) of Northcentral University (Appendix H). Two groups of participants completed the questionnaire, one representing sustainable companies and the other representing nonsustainable companies as revealed through the answer to a question on the survey. Demographic questions in addition to focal questions were presented in the survey. Respondents chose answers from Likert-type scales for each question on the SP section of the PSRQ.

Every effort was taken to conform to ethical standards for conducting research with humans, and compliance with the standards for conducting research appropriate to the research design were followed. Ethical issues in survey research include insuring that participation is voluntary, no harm will come to respondents, and anonymity and confidentiality are certain (Babbie, 1997). The IRB process guided the researcher, including application submission and approval. Informed consent forms properly notified participants of the questionnaire's purpose, participation requirements, research personnel, potential risk/discomfort, potential benefit, anonymity/confidentiality, and

right to withdraw. Informed consent forms were stored electronically. Those participants who did not accept the informed consent acknowledgement exited using online survey logic.

The survey was web-based, no personally identifiable data was collected, and each set of responses was coded with a case number. Contact information about the researcher, the dissertation mentor, and the Northcentral University IRB was available on the first page of the survey. The researcher obtained written permission from Drs. Walker and Brammer to use the PSRQ (Appendix F). Ethical obligations regarding analysis and reporting were noted in this report, including any shortcomings of the study or negative findings.

Summary

CSR and PSR have become important elements in the effort to achieve sustainability in the modern supply chain. In addition, stakeholder theory informs policies and procedures relating to how business should be conducted in an ethically responsible manner within the parameters of a global worldview. Quantitative survey research is an appropriate and frequently used methodology in SCM studies, such as investigations involving buyer-supplier relationships (Rungtusanatham et al., 2003). The purpose of this quantitative, nonexperimental, cross-sectional study was to compare the dimensions of PSR based on whether a firm is classified as sustainable through public sustainability reporting. Purchasing managers completed a survey designed to evaluate actions related to PSR strategies. Procedures followed ethical guidelines for research with human beings. Findings will assist managers in designing strategies to minimize risk, share information, expand opportunities, increase brand image, create competitive

advantage within the context of sustainability identification, and in due course advance global sustainable development through environmental and social initiatives.

Chapter 4: Findings

This study used a nonexperimental cross-sectional quantitative design to compare dimensions of PSR in firms based on whether the firm is publicly identified as sustainable through voluntary submission of sustainability reports to external organizations or through company communication channels, with firms not associated with same. Purchasing managers of publicly held firms were invited to participate in the PSRQ presented as an Internet survey. Responses were analyzed to determine levels of corporate strategic engagement with five PSR dimensions of diversity, environment, human rights, philanthropy/community, and safety, defined in earlier studies (Carter, 2004; Carter & Jennings, 2002, Carter & Jennings, 2004).

Sustainability status was measured on a nominal scale with two categories and the five dimensions of PSR were measured as interval-level variables using the PSRQ. An *a priori* power analysis using G*Power 3.1 software was conducted prior to the study to determine appropriate sample size. Assuming a medium effect size $f_2(V)$ of 0.25, a two-tailed test, an alpha significance level of 0.05, a power (1 - β error probability) of 0.80, two groups, and 5 response variables, the *a priori* power analysis indicated at least 58 surveys must be included in the study using MANOVA: global effects. The *a priori* power analysis yielded power = 0.81 and critical $F=2.39$. After data collection was completed, a *post hoc* analysis was performed with 78 usable surveys using G*Power 3.1 software. Achieved power was (1 - β error probability) of 0.928663 and critical $F=2.3418275$ (Table 4).

Table 4

Post hoc Analysis: Achieved Power F tests - MANOVA: Global Effects

Options:	<i>Pillai V, O'Brien-Shieh Algorithm</i>	
Analysis:	Post hoc: Compute achieved power	
Input:	Effect size $f^2(V)$	= 0.25
	α err prob	= 0.05
	Total sample size	= 78
	Number of groups	= 2
	Response variables	= 5
Output:	Noncentrality parameter λ	= 19.5
	Critical F	= 2.3418275
	Numerator df	= 5
	Denominator df	= 72
	Power (1- β err prob)	= 0.928663
	Pillai V	= 0.2

Chapter 4 begins with descriptive statistics and parametric procedures analyzed for each research question appropriate to the type of data collected. Assumptions of statistical tests were identified and test statistics are included. An evaluation of findings follows wherein results are interpreted in the light of stakeholder theory, which supports an aggregate and composite understanding of integrated supply chain relationships and in particular, buyer-supplier partnerships. Findings from this study are compared and contrasted to other CSR and PSR studies. A summary concludes the chapter.

Results

Solicitation of participants occurred through mailed survey invitations directed to purchasing or procurement managers of publicly traded firms. Companies were listed on the New York Stock Exchange (NYSE) North America, NASDAQ, or AMEX as of the survey date (Appendix B; NASDAQ, 2011). Invitations included a link to the online survey as well as additional information about the study. Of the 1,334 invitation packets

mailed, five (0.37%) were undeliverable. Of the 86 (6.45%) attempted surveys, eight (0.6%) did not complete the PSRQ, making them unscorable; thus 78 (5.85%) usable surveys were analyzed for the research questions.

The purchasing manager sample ($N=78$) was drawn from the population of purchasing managers of publicly traded firms in North America (NASDAQ, 2011). Demographic statistics for the sample relevant to sustainability status, job roles, and number of employees are shown in Table 5. The independent variable was sustainability status, defined as publicly reporting sustainable actions. Sustainability status had two levels, *yes*, and *no*. In this sample, 44 (56.4%) of purchasing managers indicated that their firms participated in public sustainability reporting (X_0), and 34 (43.6%) indicated that their firms did not make such reports (X_1), resulting in $M=1.44$, $SD=0.49$.

Participants' job roles consisted of 12 Purchasing Managers (15.4%), 13 Corporate Purchasing Managers (16.7%), 10 Division Purchasing Managers (12.8%), 6 Purchasing Coordinators (7.7%), 6 Source and Support Managers (7.7%), 17 Sourcing Managers (21.8%), 13 Buyers (16.7%), and 1 Supply Chain Manager/Buyer (1.3%). Employment demographics of participants were also considered: 4 (5.1%) worked for companies with 4-49 employees; 3 (3.8%) for companies with 50-99 employees; 6 (7.7%) for those with 100-249 employees; 7 (9.0%) for those with 250-499 employees; 12 (15.4%) for those with 500-999 employees; 40 (51.3%) for those with over 1,000 employees; and 6 (7.7%) individuals did not answer this question. Employment demographics indicated that most respondents worked for large companies over 1,000 employees, which may be most likely to have capital sufficient to address social and environmental strategies.

Table 5

Demographic Statistics for Purchasing Manager Sample

Variable	N=78	%	Mdn	Mode	Inter- quartile Range	Min	Max
Public Sustainability Reporting			1.0	1	1	1	2
Yes (X ₀)	44	56.4					
No (X ₁)	34	43.6					
Job Role			4.0	6	4	1	8
Purchasing Manager	12	15.4					
Corporate Purchasing Manager	13	16.7					
Division Purchasing Manager	10	12.8					
Purchasing Coordinator	6	7.7					
Source and Support Manager	6	7.7					
Sourcing Manager	17	21.8					
Buyer	13	16.7					
Supply Chain Manager / Buyer	1	1.3					
Number of Employees			7.00	7	3	1	7
No answer	6	7.7					
1-49 employees	4	5.1					
50-99 employees	3	3.8					
100-249 employees	6	7.7					
250-499 employees	7	9.0					
500-999 employees	12	15.4					
1000 + employees	40	51.3					

Invitations were sent to purchasing managers of companies drawn using random stratified sampling from the list of NASDAQ Industry Sectors, while respondents selected NAICS industry sectors in the survey. NASDAQ sectors are industry specific and NAICS are broadly defined categories. For example, NAICS uses *manufacturing* as a sector, but *manufacturing* crosses several NASDAQ sectors. Purchasing managers identified relevant NAICS industry sectors (Appendix C) and demographic statistics were calculated. Sector 31-33 Manufacturing represented both mode and median value

(Mode= 6; *Mdn*=6). The minimum and maximum range included all values, and the interquartile range indicated a wide range of responses (IQR=9).

Table 6

NAICS Sector Demographic Statistics

NAICS Sector	Frequency (N = 78)	Percentage of the Sample	Percentage of the Population
No answer	8	10.3	n/a
11 Agriculture, Forestry, Fishing and Hunting	0	0.0	3.1
21 Mining	2	2.6	0.2
22 Utilities	9	11.5	1.9
23 Construction	4	5.1	10.0
31-33 Manufacturing	18	23.1	4.6
42 Wholesale Trade	1	1.3	5.2
44-45 Retail Trade	4	5.1	9.0
48-49 Transportation and Warehousing	1	1.3	2.3
51 Information	3	3.8	2.2
52 Finance and Insurance	6	7.7	4.7
53 Real Estate and Rental and Leasing	2	2.6	4.8
54 Professional, Scientific, and Technical Services	5	6.4	12.6
55 Management of Companies and Enterprises	0	0.0	0.1
56 Administrative and Support and Waste Management and Remediation Services	1	1.3	7.9
61 Education Services	6	7.7	2.1
62 Health Care and Social Assistance	2	2.6	8.1
71 Arts, Entertainment, and Recreation	1	1.3	2.0
72 Accommodation and Food Services	3	3.8	5.2
81 Other Services except Public Administration	1	1.3	12.3
92 Public Administration	1	1.3	1.6

As indicated in Table 6, the sectors recording the greatest number of responses were 31-33 Manufacturing ($n=18$; 23.1%) and 22 Utilities ($n=9$; 11.5%). No participant reported in 11 Agriculture, Forestry, Fishing and Hunting and 55 Management of Companies and Enterprises sectors, and 8 (10.3%) participants chose not to answer this question. Table 6 also presents population sector percentage. There are differences between reported sector percentages and known characteristics of the population. Some sectors are underrepresented and others overrepresented. The highest population sector percentage is 54 Professional, Scientific, and Technical Services (12.6%), yet the sample yielded 6.4% in this sector. Sector 81 Other Services (except Public Administration) also had a high population percentage (12.3%), yet the sample reported 1.3% in this sector. Conversely, the sample reported 23.1% in sector 31-33 Manufacturing, which only accounted for 4.6% in the population.

The differences in sector reporting observed in this study indicate a need for subsequent studies based on samples drawn from specific industry sectors. Under and over reporting of specific sectors may indicate respondents' unfamiliarity with sector definitions. It may also show that purchasing managers in certain sectors are more willing or more informed about sustainability strategies. It may mean that more invitations in certain industries reached the intended person. Additionally, it may suggest that purchasing roles were outsourced to other organizations in certain industries.

Prior to testing the hypotheses of this study, assumptions of parametric tests were examined. This included an examination of frequency distributions for the five dependent variables, the calculation of Kolmogorov-Smirnov tests of normality as well as skewness and kurtosis values, and testing the assumptions of the equality of variances

and covariances across groups. As can be seen from frequency distributions in Figures 4, 5, 6, 7, and 8, the five dependent variables exhibited modest departures from normality.

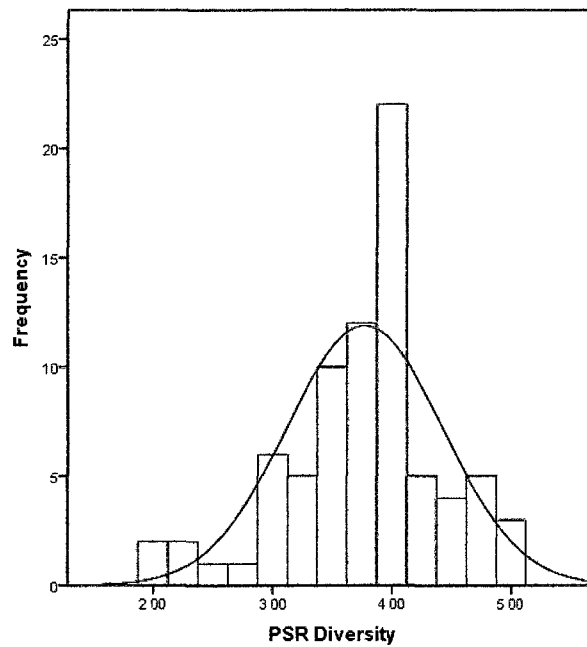


Figure 4. Frequency distribution of dependent variable PSR Diversity.

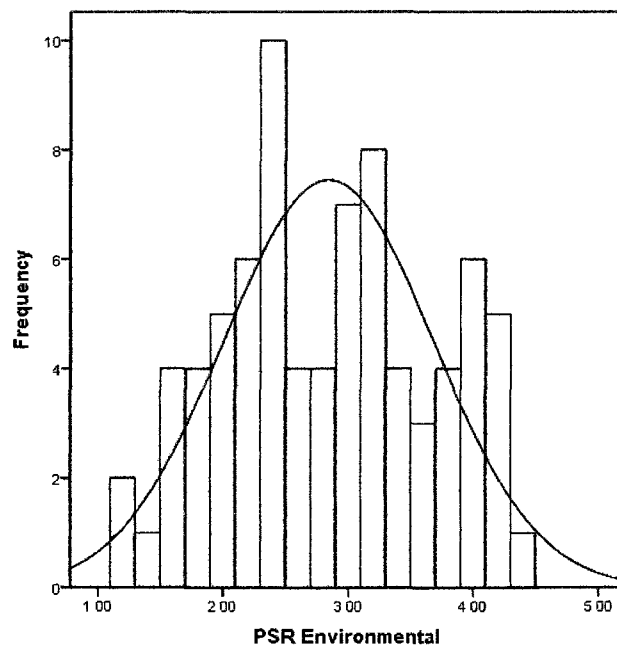


Figure 5. Frequency distribution of dependent variable PSR Environmental.

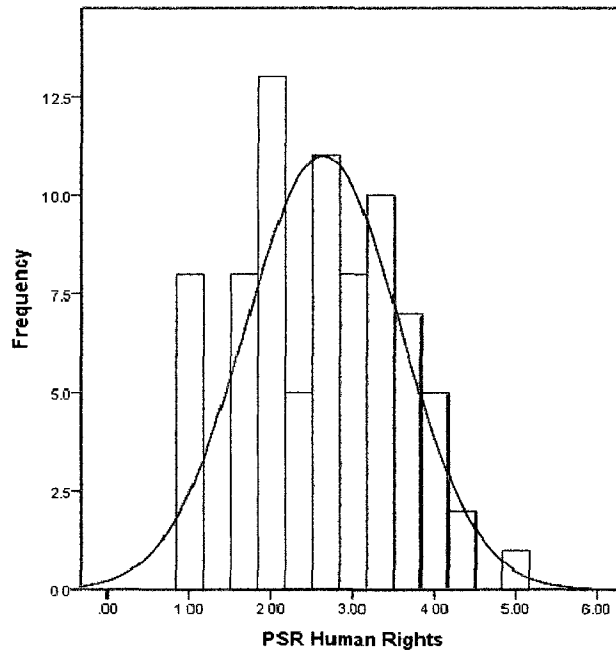


Figure 6. Frequency distribution of dependent variable PSR Human Rights.

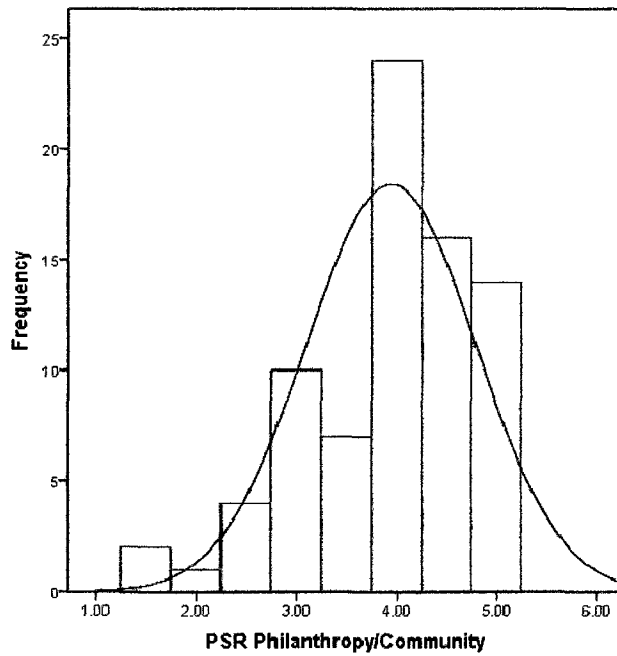


Figure 7. Frequency distribution of dependent variable PSR Philanthropy/Community.

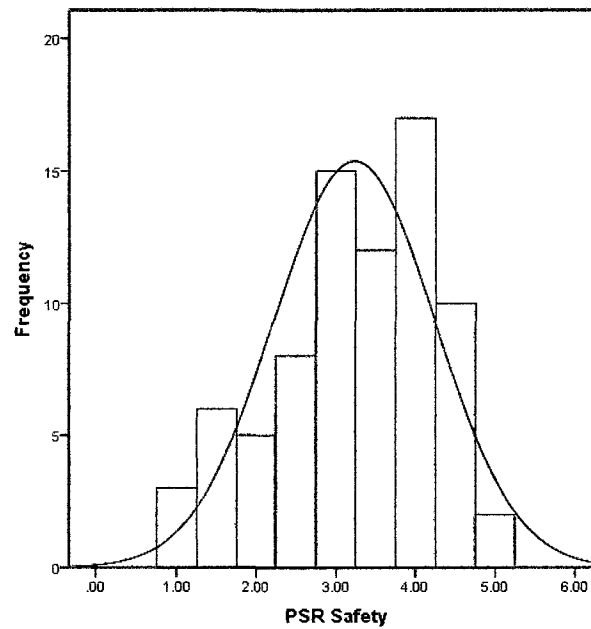


Figure 8. Frequency distribution of dependent variable PSR Safety.

The Kolmogorov-Smirnov test of normality was not statistically significant for PSRQ Diversity scores, $z = 1.27$, $p = .078$, PSRQ Environmental scores, $z = .99$, $p = .276$, PSRQ Human Rights scores, $z = 1.05$, $p = .221$, or PSRQ Safety scores, $z = 1.31$, $p = .065$. This indicated that the assumption of the normality of scores for these four scales was met. However, the test was statistically significant for PSRQ Philanthropy/Community scores, $z = 1.94$, $p = .001$, indicating a statistically significant departure from normality for scores on this scale. Mean scores on the five dependent variables are shown in Table 7 as a function of sustainability report group.

Table 7

Descriptive Statistics for Dependent Variables as a Function of Group Membership

	Sustainability Report (<i>n</i> = 44)		No Sustainability Report (<i>n</i> = 34)		Total Sample (<i>N</i> = 78)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
PSRQ Diversity	3.64	.73	3.94	.50	3.77	.65
PSRQ Environmental	2.92	.85	2.74	.81	2.84	.84
PSRQ Human Rights	2.64	1.00	2.62	.89	2.63	.94
PSRQ Philanthropy/Community	3.97	.84	3.91	.86	3.94	.85
PSRQ Safety	3.33	1.03	3.10	.98	3.23	1.01

The skewness and kurtosis values for the five dependent variables were examined next and are shown in Table 8. All values of skewness and kurtosis were less than 1.00 in absolute value indicating approximate normality.

Table 8

Skewness and Kurtosis Values for Dependent Variables

Variable	Skewness	Kurtosis
PSRQ Diversity	-.57	.66
PSRQ Environmental	.04	-.94
PSRQ Human Rights	.05	-.61
PSRQ Philanthropy/Community	-.84	.46
PSRQ Safety	-.48	-.53

Next, assumptions of equality of variances on the five dependent variables between the sustainability report and no sustainability report groups were examined. Levene's test was nonsignificant for PSRQ Diversity scores, $F(1, 76) = 3.44, p = .068$, PSRQ Environmental scores, $F(1, 76) = .28, p = .601$, PSRQ Human Rights scores, $F(1,$

76) = 1.20, $p = .277$, PSRQ Philanthropy/Community scores, $F(1, 76) = .20$, $p = .660$, and PSRQ Safety scores, $F(1, 76) = .33$, $p = .567$. These results indicated that the assumption of the equality of variances was met. The final assumption-checking test was Box's test of the equality of covariances matrices on the dependent variables between the sustainability report and no sustainability report groups. This test was statistically significant, $F(15, 20177) = 2.00$, $p = .012$, indicating that covariances among the five dependent variables were not the same for the two groups.

In summary, the examination of the assumptions of the parametric statistical tests indicated that the assumption of the equality of variances was met, the assumption of the equality of covariances was not met, and the assumption of normality was met for four of the five dependent variables, as the data were interval-level. Therefore, to supplement the MANOVA presented next, nonparametric Mann-Whitney tests were performed to verify the conclusions from the parametric tests relative to the research questions.

The five research questions of this study were:

Q1. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of diversity, as measured by the PSRQ?

Q2. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of environmental initiatives, as measured by the PSRQ?

Q3. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of human rights initiatives, as measured by the PSRQ?

Q4. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of philanthropic and community initiatives, as measured by the PSRQ?

Q5. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of safety initiatives, as measured by the PSRQ?

The first step in answering the five research questions consisted of a MANOVA with scores on PSRQ Diversity, PSRQ Environmental, PSRQ Human Rights, PSRQ Philanthropy/Community, and PSRQ Safety scales as dependent variables. The independent variable was whether or not the organization publicly reported sustainability strategies. The overall MANOVA was not statistically significant, $F(5, 72) = 1.38, p = .240$. This result indicated that there was no statistically significant difference between organizations with and without a sustainability report across the dependent variables.

As noted above, some of the assumptions of the parametric MANOVA were violated and therefore Mann-Whitney tests were performed to supplement the MANOVA results. Five tests were performed with each test comparing organizations with a sustainability report to those without a sustainability report in terms of one of the five dependent variables. The results were not statistically significant for PSRQ using $P=.05$: Diversity scores, $z = -1.68, p = .092$, PSRQ Environmental scores, $z = -1.06, p = .291$, PSRQ Human Rights scores, $z = -.08, p = .939$, PSRQ Philanthropy/Community scores, $z = -.32, p = .749$, or PSRQ Safety scores, $z = -1.16, p = .245$.

These findings confirmed the result from the MANOVA that the two groups did not differ on any of the five dependent variable from this study. It must also be noted that results from the MANOVA and Mann-Whitney analyses may indicate that the hypotheses were underpowered due to small sample size. Table 9 presents a summary of the null hypotheses tested to answer the five research questions from this study. In all five cases, the null hypothesis was not rejected through either the MANOVA analysis or the Mann-Whitney tests.

Table 9

Summary of Findings for Hypotheses 1₀, 2₀, 3₀, 4₀, and 5₀

<i>Hypothesis</i>	<i>Findings</i>
H1₀ Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of diversity, as measured by the PSRQ.	Not rejected
H2₀ Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of environmental initiatives, as measured by the PSRQ.	Not rejected
H3₀ Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of human rights initiatives, as measured by the PSRQ.	Not rejected
H4₀ Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of philanthropic and community initiatives, as measured by the PSRQ.	Not rejected
H5₀ Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of safety initiatives, as measured by the PSRQ.	Not rejected

The Sustainable Procurement (SP) section of the PSRQ included four ancillary questions relating to the various strategies and activities undertaken in response to environmental and socially responsible concerns. Similar statistical analyses were completed on Questions 9, 10, 11, and 12 for building breadth of understanding on this topic. Question 9 related to general questions about suppliers and sustainability, including (a) encouraging suppliers to become more sustainable, (b) the role of cost and product quality play when identifying a new supplier, (c) active consideration of switching to more sustainable suppliers, (d) difficulty experienced when persuading current suppliers to become more sustainable, (e) whether or not the organization sets supplier environmental criteria, (f) the role sustainability plays in the search for suppliers, and (g) if strategy includes replacing less sustainable suppliers with more sustainable suppliers.

Question 10 inquired about key environmental and socially responsible concerns of organizations, including coping with regulations, preventing incidents, enhancing positive image, and integrating environmental and social responsibility into corporate strategy. Question 11 posed questions about management commitment and environmental attitude. These questions addressed (a) ethical socially responsible behaviors of top management, (b) attitude toward whether pollution prevention "pays," (c) frequency of encouragement from management regarding socially responsible buying, (d) agreement with the statement that a partnership between government, industry, and academia is required to avoid future environmental tragedies, (e) whether or not top management provides invisible, but value oriented support for socially responsible buying, (f) agreement with the statement that the environmental challenge is one of the

central issues in the 21st century, (g) level of top management commitment to socially responsible buying, and (h) whether management believes higher financial risks are worth taking for social welfare. Question 12 reported results from socially responsible actions related to (a) obtaining products or services of higher quality, (b) lowering the cost of materials, (c) obtaining products and services with lower lead times, (d) cost reduction, (e) supplier efficiency, and (f) lowered labor costs.

Descriptive statistics for the four ancillary variables including mean (M) and standard deviation (SD) are shown in Table 10. Assumptions of parametric tests were examined, including normality tests, examination of skewness and kurtosis values, Box's Test of Equality of Covariance, Levene's Test of Equality of Error Variances, MANOVA, and Mann-Whitney. None of the ancillary variables was statistically significant based on the Kolmogorov-Smirnov test of normality: Q9 PSRQ scores, $z=1.024$, $p=.245$; Q10 PSRQ, $z=1.320$, $p=.061$; Q11 PSRQ, $z=.566$, $p=.906$; and Q12 PSRQ, $z=1.132$, $p=.154$.

Table 10

Descriptive Statistics for Ancillary Dependent Variables as a Function of Group

Membership

	Sustainability Report ($n = 44$)		No Sustainability Report ($n = 34$)		Total Sample ($N = 78$)	
	M	SD	M	SD	M	SD
	Q9 PSRQ Suppliers and Sustainability	3.64	.73	3.94	.50	3.77
Q10 PSRQ Key environmental and socially responsible concerns of organizations	2.92	.85	2.74	.81	2.84	.84
Q11 PSRQ Management commitment and environmental attitude	2.64	1.00	2.62	.89	2.63	.94
Q12 PSRQ Results from socially responsible actions	3.33	1.03	3.10	.98	3.23	1.01

The skewness and kurtosis values for the ancillary variables were studied (Table 11), and were less than 1.00 in absolute value indicating approximate normality. Thus, the assumption of normality was met.

Table 11

Skewness and Kurtosis Values for the Ancillary Variables

	Skewness	Kurtosis
Q9 PSRQ Suppliers and Sustainability	-.21	.67
Q10 PSRQ Key environmental and socially responsible concerns of organizations	-.53	-.33
Q11 PSRQ Management commitment and environmental attitude	-.34	.131
Q12 PSRQ Results from socially responsible actions	-.25	.167

The assumption of equality of variances was examined using Levene's test. Four of the five questions were nonsignificant indicating the assumption of variance was met: Q9 scores, $F(1,76)=.084$, $p=.773$, Q11 scores, $F(1,76)=.31$, $p=.861$, and Q12 scores, $F(1,76)=.215$, $p=.644$. In contrast, Q10 scores, $F(1,76)=5.997$, $p=.017$, indicated failure to meet the assumption of equality of variance. Box's M test of the equality of covariances indicated the assumption homogeneity of covariances was not violated ($F(10,22379)=2.043$, $p=.025$).

A MANOVA analysis was performed, followed by nonparametric Mann-Whitney tests to verify the conclusions from the parametric tests. The overall MANOVA was not statistically significant, $F(4,72)=.828$, $p=.252$, indicating that there was no statistically significant difference between organizations with and without public sustainability reporting across the ancillary variables. Mann-Whitney tests supported this finding, as

they were not statistically significant: Q9 scores, $z=-.147$, $p=.883$, Q10 scores, $z=-1.038$, $p=.299$, Q11 scores, $z=-1.243$, $p=.214$, and Q12 scores, $z=-.813$, $p=.416$.

Evaluation of Findings

The purpose of this quantitative nonexperimental study was to test the hypothesis that a difference does not exist between those firms publicly reporting PSR actions and those not reporting. The study explored sustainability or CSR reporting in a sample of purchasing managers ($N = 78$) to understand the depth of PSR dimensions including diversity, environment, human rights, philanthropy/community, and safety. The literature suggested that managing risk through supplier collaboration is critical (Spekman & Carraway, 2006) and many firms require suppliers to have some form of stakeholder-focused CSR strategies (Harwood & Humby, 2008).

This study responds to the call for additional research on evolving supply chain management practices, in particular those addressing integrated supply chains. Stakeholder theory addresses the purpose of the firm and responsibility of management to stakeholders, as these relationships are integral to delivering value creation (Freeman, Wicks, & Parmar, 2004). Stakeholder models indicate there are many groups and individuals with direct and indirect influence on managerial policies (Freeman, 2010), including interfirm supply chain partners and the public. Purchasing managers can require suppliers to conform to guidelines that include social and environmental initiatives have potential for impact on members of society (Russo & Perrini, 2010). With over half of respondents in this study indicating participation in public sustainability reporting, it is clear that this trend has increased in response to public requests for transparency and accountability (Gilbert & Rasche, 2008).

An emerging topic in the field of operations management is identification of methods and accounting for voluntary and statutory sustainability reporting (Zadek & McIntosh, 2002). As firm managers integrate basic sustainable strategies within their organizations, a need for more advanced and detailed strategies will develop. The PSRQ was developed in early in the decade and addressed broadly defined PSR dimensions and activities, and so the field of operations management will benefit from a additional analysis regarding what makes up PSR organizational strategies.

This research indicated a movement toward implementing sustainability strategies in supply chains, a finding consistent with studies showing that supplementary activities such as including social and environmental criteria in supplier selection are essential to effective supply chain management (Pagell & Wu, 2009). In addition, it supports the view that businesses have extended responsibilities, including noneconomic ones (Freeman, 2010; Fontrodona & Sisson, 2006). Even though there is not a clear linkage between profitability and environmental performance (Russo & Fouts, 1997; Wagner, 2010), the study calls attention to the need for more tools to track and quantify the relationships (Peloza, 2009; Russo & Fouts, 1997) as well as the need for more theory-building research (Carter & Rogers, 2008).

Two major concerns in modern supply chain organizations are managing supplier networks and developing sustainability standards where reputational damage can occur through supplier misconduct even to those not involved in wrongdoing (Foerstl et al., 2010). This study supported findings from earlier research in which 25% of managers surveyed mentioned requiring suppliers to abide by CSR guidelines and 20% identified environmental and social issues as the most significant supply chain risk factor (Harwood

& Humby, 2008). Procurement managers and their strategies have become important agents of change in the push for more socially responsible activities throughout the supply chain (Leire & Mont, 2010). Even those reporting no involvement in public reporting indicated sustainable strategies implemented within their organizations.

Research question 1: Diversity strategies. The first research question dealt with assessing differences in diversity initiatives between firms publicly identified as sustainable and firms not publicly identified as sustainable. Diversity strategies included having a formal minority/women-owned business enterprise (MWBE), purchasing from MWBEs, purchasing from small businesses, and purchasing from local suppliers. The results implied acceptance of the null hypothesis, as the results were not significant. Firms not publicly identified as sustainable had a higher mean rank.

Research question 2: Environmental strategies. The second research question dealt with assessing differences in environmental initiatives between firms publicly identified as sustainable and firms not publicly identified as sustainable. Environmental strategies included using a life-cycle analysis to evaluate the environmental friendliness of products and packaging, participating in the design of products for recycling or reuse, asking suppliers to commit to waste reduction goals, participating in the design of products for disassembly, and reducing packaging material. The results implied acceptance of the null hypothesis, as the results were not significant. Firms publicly identified as sustainable had a higher mean rank.

Research question 3: Human rights strategies. The third research question dealt with assessing differences in human rights initiatives between firms publicly identified as sustainable and firms not publicly identified as sustainable. Human rights

strategies included visiting suppliers' plants to ensure that they are not using sweatshop labor, asking suppliers to pay a "living wage" greater than a country's or region's minimum wage, and ensuring that suppliers comply with child labor laws. The results implied acceptance of the null hypothesis, as the results were not significant. Firms publicly identified as sustainable had a higher mean rank.

Research question 4: Philanthropy/community strategies. The fourth research question dealt with assessing differences in philanthropic and community-betterment initiatives between firms publicly identified as sustainable and firms not publicly identified as sustainable. These strategies included volunteering at local charities and donating to philanthropic organizations. The results implied acceptance of the null hypothesis, as the results were not significant. Firms publicly identified as sustainable had a higher mean rank.

Research question 5: Safety strategies. The final research question dealt with assessing differences related to safety initiatives between firms publicly identified as sustainable and firms not publicly identified as sustainable. These initiatives included ensuring the safe, incoming movement of product to facilities and that suppliers' locations are operated in a safe manner. The results implied acceptance of the null hypothesis, as the results were not significant. Firms publicly identified as sustainable had a higher mean rank.

Summary

Quantitative nonexperimental research was used in the analysis of PSR strategies and sustainability reporting in publicly traded firms. The purpose was to identify, if possible, a link between open communication of sustainability strategies and engagement

in PSR. A pilot study was performed to validate the survey instrument and ensure survey questions were clearly stated and easily understandable. After updates were completed, survey packets were mailed to 1,334 purchasing managers and 86 responded to the invitation to participate in the online survey. There were 78 usable surveys and SPSS version 19.0 was used for statistical analysis. The assumptions of MANOVA parametric testing were evaluated prior to testing the study hypotheses. The assumption of normality was met for four of the five variables and equality of covariances was not met. Thus, to complement MANOVA, Mann-Whitney tests were performed. The findings supported the acceptance of the null hypotheses (H_0) for the five PSR dimensions, indicating there were no statistically significant differences in the two groups. This result supported recent operations management literature indicating a movement toward implementation of sustainability and CSR strategies through procurement practices within integrated supply chains.

Chapter 5: Implications, Recommendations, and Conclusions

Concern about dwindling resources, pollution, human rights, and social dilemmas has created pressure on modern managers to address these issues through corporate accountability (Henriques & Sadosky, 1999). Public reporting communicates sustainability strategies, including those actions specific to buyer-supplier relationships. Sustainability or CSR reports are not legally mandated, yet many firm managers choose to submit reports or identify with sustainability groups in an effort to convey these strategic initiatives. Others choose not to publicly associate with sustainable actions in this way. The buyer-supplier relationship links internal strategic decisions of managers with the external stakeholders of a firm. Thus, the specific problem is that it is unclear if sustainability reporting and associations with sustainability groups or indexes are true reflections of socially responsible purchasing designed to satisfy stakeholder demands (Beloff et al., 2007). The purpose of this quantitative study was to compare, analyze, and evaluate the dimensions of purchasing social responsibility (PSR) based on whether a firm identifies with public sustainability reporting.

After obtaining Northcentral University Institutional Review Board (IRB) consent, research commenced with a pilot study followed by an online survey designed to measure the drivers and dimensions of PSR. Study participants included purchasing managers knowledgeable about corporate buyer-supplier strategies. Two groups were identified in the sample: firms with corporate strategies that included public sustainability reporting and firms without such strategies. Statistical analyses including MANOVA and Mann-Whitney tests were used to determine if group differences were statistically significant for five variables representing PSR dimensions as identified in earlier research

(Carter, 2004). These dimensions included supplier diversity, concerns for the environment, human rights initiatives, philanthropy/community activities, and safety requirements.

There were several limitations to this study. Response bias effect, the possibility that nonresponses may have influenced or changed the results, may have occurred as 1,334 invitations were mailed with a response rate of 6.4%, and a usable survey response rate of 5.8%. The generalizability of the results to the population may have been affected by low response rate. However, a low response rate does not always mean that data were biased (Rogelberg & Stanton, 2007). Replication of this research should be carried out to identify whether low response rates indicate significant variance from the study findings. To lessen response bias, participants were informed that answers would remain anonymous and a random drawing for a gift card was held. Participants were selected from the population of purchasing managers of North American publicly held firms, as these generally would have knowledge of strategies directed at satisfying stakeholders, and represent firms large enough to support directed corporate initiatives. Invitations were addressed to purchasing managers, yet it is possible that individuals without this knowledge could have completed the survey, resulting in underreported or exaggerated responses.

Other firms were not included in the study, such as those not based in North America, as well as firm types such as sole proprietorships. This limitation may have restrained the generalizability of findings to those firms with similar characteristics. However, this limitation provides opportunities for additional studies to examine PSR policies for other firm types, as well as industry sector-specific analyses, or municipal

organizations. Subsequent studies will add to the external validity of the study as replication assists in verifying the results (Vogt, 2007).

A qualitative component may have provided insight into the changing nature of PSR dimensions identified through earlier studies. As management strategies change in reference to business cycles and economic factors, so could procurement and sustainability strategies change. The study used the five known PSR dimensions, yet other strategies may exist, such as those specific to public entities. These may have been discovered using qualitative techniques in tandem with quantitative.

Another limitation may have been sample size, as larger samples could add greater precision through statistical power. However, this study was limited by time and by scope, as it was impossible to survey or interview all purchasing managers of North American publicly held companies. Other factors that may have limited the study include the assumption of universal access to an Internet-based survey and truthfulness of responses received.

No ethical issues were uncovered during the study. Efforts were taken to conform to ethical and appropriate standards for conducting research with humans, including minimal risk to persons, equitable selection, and the Belmont principles of consent. Individuals who did not agree to the informed consent acknowledgement exited the survey through skip logic as provided by the Internet survey supplier. To guarantee respondent privacy, no personally identifiable data was collected and each response set was coded with a case number. Electronic data was stored temporarily and has been deleted.

Chapter 5 began with a brief review of the problem statement, purpose, method, limitations, and ethical dimensions related to this study. A discussion of the implications of each research question and hypothesis follows. Logical conclusions in light of stakeholder theory are drawn. Recommendations for future research and practical applications of the study are presented. As consumer anxiety increases about conservation, the environment, and issues affecting society (Pagell & Wu, 2009), creating sustainable supply chain organizations has become an essential instrument to business managers in a global economy. Findings will provide guidance to managers considering PSR implementation or expansion, identification with sustainability indexes or reporting, and to those concerned with corporate influence on human and ecological issues.

Implications

The following section presents the five research questions and their associated hypotheses in this study, along with implications of the findings for each question.

Q1. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of diversity, as measured by the PSRQ?

H1₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of diversity, as measured by the PSRQ.

H1_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of diversity, as measured by the PSRQ.

The dimension of diversity included having formal MWBE programs, purchasing from MWBE firms, as well as small and local suppliers. The results of the Mann-Whitney test were not statistically significant, $z = -1.68$, $p = .092$. The null hypothesis (H_{10}) was not rejected suggesting minimal differences in PSR diversity strategies between firms with public sustainability reporting and those without public sustainability reporting.

The implication of this finding is that diversity has become a strategic objective of many corporations, to the extent of adoption of these types of programs across different types of publicly held firms. A recurrent theme in the literature is that demographic changes and public policies have driven the implementation and changes to supplier diversity initiatives (Worthington, 2009). Additionally, minority programs have led to improved organizational performance, more effective response to external pressures, building up of stakeholder relationships, and greater contribution to strategic objectives (Worthington, 2009). Managers appear to have recognized diversity procurement policies as part of good business strategies. In addition, there may be market benefits related to community acceptance for support of diversity initiatives.

Diversity policies such as using MWBEs, veteran-owned, service-disabled, and Historically Underutilized Business Zone (HUBZone) businesses are essentially procurement policies. Sponsored by the Small Business Administration (SBA), the HUBZone program assists small businesses gain access to procurement opportunities with the United States government (United States Small Business Administration, 2011). Within the boundaries of sustainable supply chain management (SSCM) as well as 3BL and stakeholder theory, organizational culture and citizenship activities such as diversity

support activities such as this play a critical role in social performance and corporate value development (Carter & Rogers, 2008).

Q2. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of environmental initiatives, as measured by the PSRQ?

H2₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of environmental initiatives, as measured by the PSRQ.

H2_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of environmental initiatives, as measured by the PSRQ.

Environmental dimensions included the presence of life-cycle analysis, participation in design of products for recycling and reuse, commitment to waste reduction goals, participation in design of products for disassembly, and reduction of packaging material. The results of the Mann-Whitney test were not statistically significant, $z = -1.06$, $p = .291$. The null hypothesis (H2₀) was not rejected suggesting minimal differences in PSR environmental strategies between firms with public sustainability reporting and those without public sustainability reporting.

In recent years, corporate environmental actions have received much notice in the press because of preventable ecological accidents and disasters. Of the five PSR dimensions, studies about strategies relating to the natural environment have received the

most attention. A recent literature review of 191 academic papers revealed that 73% focused on environmental dimensions, compared to social (11%) and sustainable dimensions (16%; Seuring & Müller, 2008b). Ecological strategies often include upstream collaboration with suppliers through environmental audits and downstream monitoring of emissions or pollution (Kovács, 2008). Quality standard ISO 14040 incorporates LCA/LCM principles (Barber, 2007), and terms such as *greening the supply chain* have become part of doing business in modern society (Seuring & Müller, 2008b).

Sustainable actions undertaken by corporate procurement groups are often related to environmental concerns, such as recycling, reuse, life cycle analysis, and LEED compliance. Results from this study were consistent with environmental trends in corporate strategies brought about by public concern for the world's natural system, as well as how humans should address its use and care. As globalization results in extended public view of corporate actions, managers are very concerned about the portrayal of their companies as good and responsible environmental citizens.

Q3. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of human rights initiatives, as measured by the PSRQ?

H3₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of human rights initiatives, as measured by the PSRQ.

H3_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of human rights initiatives, as measured by the PSRQ.

In this study, human rights strategies included monitoring suppliers for working conditions including sweatshop labor, child labor compliance, and wage equity. The results of the Mann-Whitney test were not statistically significant, $z = -.08$, $p = .939$. The null hypothesis ($H3_0$) was not rejected suggesting no statistically significant difference in PSR human rights initiatives between firms with public sustainability reporting and those without public sustainability reporting. A number of CSR practices focus on suppliers' employees, with the focus dependent "on the vision of the owner/entrepreneur and the socio-economic context wherein the company operates" (Ciliberti, Pontrandolfo, & Scozzi, 2008, p. 1587).

In North American enterprises, workers' and human rights have long been a regulated by the federal government. However, human rights are now achieving increased international attention. A recent study found that employees and local governments were instrumental in the push for higher standards of employee working conditions among multinational enterprises (MNEs), even in areas where weak regulatory and enforcement mechanisms existed (Reimann, Ehgott, Kaufmann, & Carter, 2011). This may be an indication that regardless of regulatory structure, corporate self-regulation could include alignment of social strategies across all regions to prevent regulatory issues in any one region (Reimann et al., 2011).

The implication of findings from the current study is that many corporate managers may implement human rights endeavors because of regulatory as well as social

pressures to treat workers fairly. In the mid-1990s, the Nike Corporation was scandalized when it was revealed its suppliers practiced poor labor practices (Peloza, 2003). Even though Nike was not at fault because outsourcing insulated them from legal issues, publicity about suppliers' sweatshops was damaging to Nike's corporate image (Peloza, 2003). Managers wish to avoid such costly humiliations. Employee and workers rights appear to be nonnegotiable strategies, and are universally addressed by firm managers regardless of whether or not sustainable reporting is undertaken.

Q4. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of philanthropic and community initiatives, as measured by the PSRQ?

H4₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of philanthropic and community initiatives, as measured by the PSRQ.

H4_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of philanthropic and community initiatives, as measured by the PSRQ.

Philanthropic and community activities included volunteering with local charities and donations to philanthropic organizations. The results of the Mann-Whitney test were not statistically significant, $z = -.32, p = .749$. The null hypothesis (H4₀) was not rejected suggesting no difference in these PSR strategies between firms with public sustainability

reporting and those without public sustainability reporting. In 2007, approximately \$46.3 million was donated to worthy causes by *Fortune 100* firms, and many well known firms have contributed to natural disaster relief (Carroll & Shabana, 2010). Firm managers notice such positive publicity, and thus it is not surprising that findings from this study support widespread strategies related to philanthropic and community volunteering.

Q5. Among firms engaged in buyer-supplier relationships, what, if any, is the difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of safety initiatives, as measured by the PSRQ?

H5₀. Among firms engaged in buyer-supplier relationships, there is no difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of safety initiatives, as measured by the PSRQ.

H5_a. Among firms engaged in buyer-supplier relationships, there is a difference between firms publicly identified as sustainable and firms not identified as sustainable in terms of safety initiatives, as measured by the PSRQ.

The dimension of safety included statements about operating suppliers' plants in a safe manner and safe movement of product to company facilities. The results of the Mann-Whitney test were not statistically significant, $z = -1.16$, $p = .245$. The null hypothesis (H5₀) was not rejected suggesting minimal differences in PSR safety strategies between firms with public sustainability reporting and those without public sustainability reporting. In many firms, occupational health and safety performance indicators are included in employee share plans and performance evaluations (Adams & Frost, 2008). Managers in modern North American firms depend upon workers who are

knowledgeable about safety procedures and regulations. The PSR safety variable represents an extension of internal guidelines to external suppliers. Findings from this study imply that safety strategies are not contingent on whether a firm reports sustainable actions publicly.

Four ancillary dependent variables were included in this analysis. Question 9 related to general questions about suppliers and sustainability. Question 10 inquired about key environmental and socially responsible concerns of organizations. Question 11 posed questions about management commitment and environmental attitude, and Question 12 reported results from socially responsible actions. Statistical analysis of these variables supported the results from the five PSR variables: there was no statistically significant difference between the two groups. These findings reinforce the universal acceptance of PSR dimensions in contemporary business management arenas.

The widespread acceptance of sustainable actions through purchasing strategies such as those addressed in this study points to pervasive adoption of stakeholder theoretical tenets. Stakeholder theory contrasts the traditional view of the firm as an entity to create and distribute value, but rather one that is tasked with noneconomic responsibilities as well (Donaldson & Preston, 1995; Fontrodona & Sison, 2006). Beyond shareholders are the stakeholders, who are the extended family of individuals receiving benefit or detriment from the firm (Freeman, 2010). Uncertain and evolving business environments have necessitated new strategies to address stakeholder requests for responsible actions toward the environment and society (Preble, 2005).

The results from this study indicate that basic concepts of stakeholder theory have successfully integrated into modern business policies carried out by procurement

departments, regardless of whether firm managers have chosen to invest in sustainability reporting initiatives. Stakeholder management models such as the Preble (2005) model provide insight into progressive strategies to address such concerns. The final step in this model involves monitoring and controlling to evaluate progress, stakeholder positions, and performing social environmental audits (Preble, 2005). Yet, reporting does not appear to be fully standardized across industries and countries (Freeman et al., 2010). Although reporting and other environmental management activities were positively related to firm performance, the depth and quality of such reports was quite varied (Montabon et al., 2007). A number of agencies have attempted to normalize reporting procedures but there is disagreement as to what should be included (Morhardt et al., 2002). These ongoing discussions and evaluations have taken place in public forums, and so managers are aware of types of sustainable actions. Thus, the modern firm's purchasing manager has many tools to implement sustainable activities related to diversity, environment, human rights, philanthropy/community, and safety regardless of whether or not their firms submit sustainability reports or make environmentally and socially responsible activities public.

Recommendations

Focus on the social and environmental impacts of business activities has resulted in an increased accounting of corporate sustainable actions as well as development of guidelines and measures (Adams & Frost, 2008). Sustainability reporting, ownership of processes, approaches, and key performance indicators (KPI) vary substantially across companies and industry segments (Adams & Frost, 2008). This study centered on purchasing managers' understanding of these activities and their decisions to include

them in their procurement policies. The implications are that this study provides a replicable base for future research into the alignment of PSR and sustainability reporting in other industries, sectors, and business model types, as well as MNEs and businesses resident in less developed countries. In addition to greater diversity in population, the sample size should be increased and nonresponse bias decreased to provide greater understanding about this important topic. A qualitative component should also be added to build depth and discover new ideas about PSR activities.

The sector percentage comparison between survey respondents and the population indicated variances across the sectors. The relative proportions were significantly different, indicating that some purchasing managers may have been more likely to respond than others may have been. Industries such as manufacturing or mining may have investment that is more significant in environmental strategies, while others such as health care may have more socially focused initiatives. This finding points toward the need for industry specific analyses of PSR.

Environmental and social reporting is a voluntary activity and there are significant variances among reporting procedures, depth, venues, processes, and types. As a result, it is difficult to identify how much accountability is required. Environmental management standards representing voluntary approaches to regulation, such as ISO 14000, may also expand this integration of economic, environmental, and social criteria to achieve sustainable organizations (Carter & Rogers, 2008). Yet, without true audit procedures and guidelines, the authenticity of sustainability reporting is in question. More research is required to identify standards of reporting and accounting procedures, and subsequent efficacy analyses.

Even though the study signifies a step toward greater stakeholder recognition in developing company strategies, managerial support and understanding the true cost of sustainable actions is of critical importance when implementing PSR in integrated supply chains. The modern company remains at the crossroads of shareholder and stakeholder theoretical models. As public awareness of sustainable activities increases, stakeholder theory will continue to advance, resulting in greater adoption of environmental and societal responses.

Conclusions

This research adds to knowledge of the extent of integration of socially and environmentally responsible actions into corporate strategy. The findings supported the acceptance of the null hypotheses (H_0) for the five PSR dimensions, indicating there were no statistically significant differences in the two groups. Four ancillary variables supported this conclusion as well. Thus, public reporting of sustainable activities did not indicate that a firm's PSR strategies were different than if these activities were not reported. Due the nature of the study, the sample was limited and further research is required for greater understanding as to specific levels of procurement strategies in firm types and geographical regions.

Global supply chains expose organizations to risks that necessitate dynamic and responsive strategies that address varying legal standards and social requirements (Reuter et al., 2010). Even though there is disagreement as to whether organizations are liable for social and environmental issues (Friedman, 1962), strategic decisions cannot be made without recognizing impacts of operations. Market forces reward corporate behaviors by supporting or abandoning the firm or its brands (Amaeshi et al., 2008). Thus, the

boundaries of management have extended the application of stakeholder theory to result in CSR and PSR actions throughout the supply chain. Supply chain members manifest isomorphic practices including those that are mimetic, normative, or coercive (DiMaggio & Powell, 1983). As the requirement for sustainable development becomes more urgent, mimetic and normative mechanisms will have greater impact (Perez-Batres, Miller, & Pisani, 2011). In support, this study revealed that firms without public reporting of sustainable activities have imitated the actions and strategies of those that do, and sustainable initiatives have been adopted as normal strategic imperatives for business success.

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Appendixes

Appendix A

Replication of Carter and Jennings PSRQ

Scholar (date)	Research topic	Participants	Methodology	Instrument type	Source instrument
Carter, C. R., & Jennings, M. M. (2002)	Issues that relate specifically to socially responsible logistics management or logistics social responsibility (LSR)	Middle and upper management level members of the Council of Logistics Management (US citizens employed within the US by US-based firms)	Literature review followed by telephone interviews (qualitative analysis)	In-depth interviews with purchasing, transportation, and warehousing managers	Literature review and based on data and complime ntary extant literature
Carter, C. R., & Jennings, M. M. (2004)	Examine CSR issues in the narrower context of the purchasing function; an inquiry into the dimensions and drivers of PSR	Purchasing personnel at supervisor or higher level of US consumer products manufacturing firms who were members of the Institute for Supply Management (ISM)	Review of CSR, organizational behavior, and organizational theory literature; interviews with purchasing managers, open discussion of survey instrument and model, pilot test, followed by questionnaire	Questionnaire developed for this study	Carter & Jennings (2002) LSR study and discussion with purchas- ing managers
Carter, C. R. (2004)	Replicate the findings of Carter & Jennings (2004) by extending the	ISM members and affiliates with title of manager or higher	Review of CSR and PSR literature followed by large-scale survey of	Web-based questionnaire	Carter & Jennings (2004) scale items modified

	study to a significantly broader group of industries		supply management professionals in a diverse group of manufacturing and service industries		to include applicability to wider range of industries
Walker, H., & Brammer, S. (2009)	Investigate sustainable procurement in the UK public sector	UK public procurement professionals (snowball sampling)	Literature review followed by development of a conceptual framework; questionnaire reviewed by expert panel and piloted with 10 public procurement officers to ensure face validity and efficacy	E-mailed questionnaire	Carter & Jennings (2004) scale items with additions; qualitative data included
Salam, M. A. (2009)	Understand the drivers of PSR and extend the application	Purchasing and supply chain managers with membership in the Purchasing Association of Thailand in consumer products firms	Literature review of CSR and PSR, pre-test with academics and practitioners, pilot test, followed by survey	Mailed questionnaire	Carter & Jennings (2004)

Appendix B

Industry Count, NASDAQ, NYSE, AMEX North America List as of May 21, 2011

Sector / Industry	Count
Basic Industries	240
Agricultural Chemicals	7
Aluminum	1
Containers/Packaging	2
Electric Utilities: Central	3
Engineering & Construction	5
Environmental Services	5
Forest Products	8
General Building Contractors - Nonresidential Buildings	2
Home Furnishings	1
Homebuilding	4
Major Chemicals	58
Metal Fabrications	9
Military/Government/Technical	9
Mining & Quarrying of Nonmetallic Minerals (No Fuels)	11
Miscellaneous	2
Package Goods/Cosmetics	5
Paints/Coatings	4
Paper	11
Precious Metals	65
Specialty Chemicals	6
Steel/Iron Ore	12
Telecommunications Equipment	6
Textiles	4
Capital Goods	350
Aerospace	10
Auto Manufacturing	8
Auto Parts: Original Equipment Manufacturing (O.E.M.)	29
Automotive Aftermarket	2
Biotechnology: Laboratory Analytical Instruments	22
Building Materials	8
Building Products	4
Construction/Agricultural Equipment/Trucks	10
Containers/Packaging	1
Electrical Products	38
Electronic Components	6

Sector / Industry	Count
Engineering & Construction	4
Fluid Controls	7
Homebuilding	19
Industrial Machinery/Components	93
Industrial Specialties	15
Marine Transportation	2
Medical Specialties	4
Metal Fabrications	33
Military/Government/Technical	11
Ordnance And Accessories	4
Pollution Control Equipment	6
Railroads	5
Specialty Chemicals	3
Steel/Iron Ore	5
Tools/Hardware	1
Consumer Durables	311
Automotive Aftermarket	16
Building Products	8
Consumer Electronics/Appliances	2
Consumer Specialties	6
Containers/Packaging	17
Electrical Products	3
Home Furnishings	14
Industrial Machinery/Components	3
Industrial Specialties	11
Major Pharmaceuticals	176
Metal Fabrications	6
Miscellaneous manufacturing industries	12
Office Equipment/Supplies/Services	5
Publishing	1
Specialty Chemicals	15
Steel/Iron Ore	1
Telecommunications Equipment	15
Consumer Non-Durables	198
Apparel	30
Beverages (Production/Distribution)	18
Consumer Electronics/Appliances	6
Consumer Specialties	2
Electronic Components	10
Environmental Services	1

Sector / Industry	Count
Farming/Seeds/Milling	13
Food Chains	3
Food Distributors	9
Homebuilding	2
Meat/Poultry/Fish	7
Motor Vehicles	1
Package Goods/Cosmetics	10
Packaged Foods	37
Plastic Products	8
Recreational Products/Toys	12
Shoe Manufacturing	15
Specialty Foods	10
Telecommunications Equipment	3
Textiles	1
<hr/>	
Consumer Services	636
Advertising	7
Automotive Aftermarket	1
Books	4
Broadcasting	21
Building operators	9
Catalog/Specialty Distribution	11
Clothing/Shoe/Accessory Stores	39
Consumer Electronics/Video Chains	6
Consumer Specialties	4
Consumer: Greeting Cards	2
Department/Specialty Retail Stores	21
Diversified Commercial Services	9
Electronics Distribution	1
Farming/Seeds/Milling	5
Food Chains	11
Home Furnishings	5
Homebuilding	2
Hotels/Resorts	20
Marine Transportation	8
Military/Government/Technical	10
Miscellaneous	2
Motor Vehicles	2
Movies/Entertainment	12
Newspapers/Magazines	14
Office Equipment/Supplies/Services	6

Sector / Industry	Count
Other Consumer Services	54
Other Specialty Stores	39
Paper	2
Professional Services	18
Publishing	3
Real Estate	3
Real Estate Investment Trusts	147
Recreational Products/Toys	2
Rental/Leasing Companies	5
Restaurants	45
Retail: Building Materials	9
Services - Miscellaneous Amusement & Recreation	20
Telecommunications Equipment	20
Television Services	33
Transportation Services	4
Energy	258
Coal Mining	13
Consumer Electronics/Appliances	3
Electric Utilities: Central	2
Industrial Machinery/Components	32
Integrated Oil Companies	15
Metal Fabrications	10
Natural Gas Distribution	10
Oil & Gas Production	154
Oil Refining/Marketing	8
Oilfield Services/Equipment	11
Finance	899
Accident & Health Insurance	8
Banks	34
Business Services	11
Commercial Banks	8
Diversified Commercial Services	3
Diversified Financial Services	4
Finance Companies	9
Finance/Investors Services	9
Finance: Consumer Services	121
Investment Bankers/Brokers/Service	50
Investment Managers	21
Life Insurance	27
Major Banks	378

Sector / Industry	Count
Property-Casualty Insurers	72
Real Estate	19
Savings Institutions	108
Specialty Insurers	17
Health Care	310
Biotechnology: Biological Products (no diagnostic substances)	49
Biotechnology: Commercial Physical & Biological Research	19
Biotechnology: Electromedical & Electrotherapeutic Apparatus	34
Biotechnology: In Vitro & In Vivo Diagnostic Substances	17
Hospital And Medical Service Plans	11
Hospital/Nursing Management	31
Industrial Specialties	18
Medical Electronics	2
Medical Specialties	21
Medical/Dental Instruments	73
Medical/Nursing Services	24
Ophthalmic Goods	2
Other Pharmaceuticals	5
Precision Instruments	4
Miscellaneous	1,055
Business Services	68
Home Furnishings	1
Industrial Machinery/Components	7
Multi-Sector Companies	7
Office Equipment/Supplies/Services	11
Other Consumer Services	2
Publishing	5
Not Available (n/a)	954
Public Utilities	240
Electric Utilities: Central	64
Environmental Services	8
Natural Gas Distribution	20
Oil & Gas Production	8
Oil/Gas Transmission	12
Power Generation	41
Telecommunications Equipment	68
Water Supply	19
Technology	520
Advertising	8

Sector / Industry	Count
Computer Communications Equipment	17
Computer Manufacturing	13
Computer peripheral equipment	18
Computer Software: Prepackaged Software	94
Computer Software: Programming, Data Processing	15
Diversified Commercial Services	11
Electronic Data Processing (EDP) Services	97
Electrical Products	14
Electronic Components	13
Industrial Machinery/Components	43
Professional Services	20
Radio and Television Broadcasting Communications Equipment	38
Retail: Computer Software & Peripheral Equipment	9
Semiconductors	109
Telecommunications Equipment	1
<hr/> Transportation	<hr/> 71
Aerospace	2
Air Freight/Delivery Services	16
Marine Transportation	8
Oil Refining/Marketing	10
Railroads	10
Transportation Services	5
Trucking Freight/Courier Services	20
<hr/> Grand Total	<hr/> <u>5088</u>

Appendix C

Industry Count, North American Industry Classification System (NAICS)

Code	Industry Title	Count*
11	Agriculture, Forestry, Fishing, and Hunting	439,154
21	Mining, Quarrying, and Oil and Gas Extraction	32,209
22	Utilities	279,639
23	Construction	1,440,911
31-33	Manufacturing	658,871
42	Wholesale Trade	743,751
44-45	Retail Trade	1,287,896
48-49	Transportation and Warehousing	336,121
51	Information	321,336
52	Finance and Insurance	676,215
53	Real Estate and Rental and Leasing	688,994
54	Professional, Scientific, and Technical Services	1,803,748
55	Management of Companies and Enterprises	21,358
56	Administrative and Support and Waste Management and Remediation Services	1,130,823
61	Educational Services	297,068
62	Health Care and Social Assistance	1,162,133
71	Arts, Entertainment, and Recreation	282,386
72	Accommodation and Food Services	747,482
81	Other Services (except Public Administration)	1,767,215
92	Public Administration	227,581
	Total	<u>14,344,891</u>

* Number of U.S. businesses with that code.

Appendix D

Carter and Jennings (2004) PSRQ Scale Items

Construct Reliability ^b	Standardized Factor Loading ^a
Socially Responsible Purchasing	
0.84	
The Environment ^c	(.74)
Diversity ^c	(.52)
Human Rights ^c	(.85)
Philanthropy ^c	(.66)
Safety ^c	(.80)
The Environment^h	
0.86	
Currently, our purchasing function: ^d	
...uses a life-cycle analysis to evaluate the environmental friendliness of products and packaging	(.70)
...participates in the design of products for disassembly	(.71)
...asks suppliers to commit to waste reduction goals	(.81)
...participates in the design of products for recycling or reuse	(.85)
...reduces packaging material ("E5")	(.60)
...purchases recycled packaging (Deleted: large standardized residual with E5)	
...purchases packaging that is of lighter weight (Deleted: large standardized residual with E5)	
Diversity	
0.82	
Currently, our purchasing function: ^d	
... purchases from minority/women-owned business enterprise (MWBE) suppliers	(.85)
... has a formal MWBE supplier purchase program	(.82)
Human Rights	
0.86	
Currently, our purchasing function: ^d	
... visits suppliers' plants to ensure that they are not using sweatshop labor	(.85)
... ensures that suppliers comply with child labor laws	(.91)
... asks suppliers to pay a "living wage" greater than a country's or region's minimum wage	(.69)

Philanthropy

0.75

Currently, our purchasing function: ^d

... volunteers at local charities (.82)

... donates to philanthropic organizations (.72)

...helps to increase the performance of suppliers in the local community (Deleted: large standardized residuals with Human Rights scale items)

Safety

0.73

Currently, our purchasing function: ^d

... ensures that suppliers' locations are operated in a safe manner (.89)

... ensures the safe, incoming movement of product to our facilities (.62)

Ethics - Deceitful Practices ¹

0.89

Currently, our purchasing function: ^{d,t}

... invents (makes up) a second source of supply to gain competitive advantage ("DP1") (.79)

... exaggerates the seriousness of a problem to gain concessions (.93)

... purposefully misleads a salesperson in a negotiation (.83)

...uses obscure contract terms to gain an advantage over suppliers (Deleted: large standardized residuals with DP1)

Ethics – Subtle Practices ¹

0.80

Currently, our purchasing function: ^{d,t}

... accepts meals from a supplier even if it is not possible to reciprocate (.63)

... shares information about suppliers with their competitors (.90)

... shows favoritism when selecting suppliers (.71)

Top Management Leadership

0.89

My department's involvement in socially responsible purchasing has been motivated by: ^{d,g}

...the examples top management provides (.85)

... requirements made by senior management (.86)

... top-down initiatives (.86)

Customer Pressures ^h

0.90

My department's involvement in socially responsible purchasing has been motivated by: ^{d,g}

... social programs that our customers have in place (.85)

... customers who seek socially responsible suppliers	(.86)
... increased awareness of social issues among our customers	(.89)
Employee Initiatives	
0.85	
My department's involvement in socially responsible purchasing has been motivated by: ^{d,g}	
... employee initiatives	(.85)
... championing efforts by individual employees	(.87)
Government Regulation ^h	
0.85	
My department's involvement in socially responsible purchasing has been motivated by: ^{d,g}	
... current government legislation	(.85)
... the threat of future government legislation	(.94)
... targeted actions by activist groups	(.60)
Individual Values of Purchasing Employees	
0.95	
My department's involvement in socially responsible purchasing has been motivated by: ^{d,g}	
... the morals of individual employees	(.79)
... the personal desires of employees to do what is right	(.91)
... a personal sense of obligation among employees	(.98)
... the underlying values of employees	(.97)
People-Oriented Organizational Culture ^j	
0.94	
Next, we would like to briefly explore the extent to which the following characteristics are part of your organization's culture: ^e	
... being people oriented	(.88)
... fairness	(.88)
... being supportive	(.92)
... the desire to be a good corporate citizen	(.89)

^a Standardized factor loadings of scale items measuring latent constructs are given in parenthesis.

^b Composite reliability.

^c This item is a summated composite of the scale items shown below under the related construct.

^d These items were measured on a 7-point Likert scale where 1= no extent whatsoever and 7 = very great extent.

^e These items were measured on a 7-point Likert scale where 1 = most uncharacteristic of my organization's culture and 7 = most characteristic of my organization's culture.

^f These items were reverse coded

^g Respondents were told that socially responsible purchasing includes a broad array of activities, including several of those listed among the first eight constructs of this Appendix.

^h Based on Carter and Carter (1998)

ⁱ Based on Carter (2000)

^j Based on Chatman and Jehn (1994)

Note. Questionnaire scale items from Carter and Jennings (2004, p. 184-186).

Appendix E

Walker and Brammer (2009) PSRQ

Sustainable Procurement Questionnaire

We are conducting an international study. Please help us to investigate sustainable public procurement practices and attitudes by answering a few questions.

You and your organization

Q1 Job title

Q2 Country

Q3 Preferably, you should be able to answer this questionnaire for your own organisation. If this is not possible, please indicate below.

- a) Yes, my answers will be for my whole organisation. b) No, I can only answer for my unit / department (if so, where question reads organisation, please respond for your unit)

Q4 How many employees are there in your organization?

- | | |
|------------|------------|
| a) 1-9 | e) 250-499 |
| b) 10-49 | f) 500-999 |
| c) 50-99 | g) 1000+ |
| d) 100-249 | |

Q5 Please choose which government function your organisation falls under

- | | |
|-------------------------------------|--------------------------------|
| a) General public services | j) Religion |
| b) Defense | k) Education and /or research |
| c) Justice, public order and safety | l) Social affairs / employment |
| d) Economic affairs | m) Traffic/transport |
| e) Environment | n) Spatial planning |
| f) Housing and community amenities | o) Agriculture |
| g) Health | p) Water management |
| h) Recreation | q) Don't know |
| i) Culture | r) Other please specify |

Q6 Which type of organisation do you work in?

- a) Local authority e.g. municipality
 b) Regional government e.g. county, region, province, state
 c) Central government
 d) Other (semi) public bodies governed by public law

Q7 Annual purchasing spend in your local currency.

- | | |
|----------------------|----------------------------|
| a) <0 - 49,000 | g) 5-10 million |
| b) 50,000 - 99,000 | h) 10-15 million |
| c) 100,000 - 249,000 | i) 25-50 million |
| d) 250,000 - 499,000 | j) 50-500 million |
| e) 500,000 - 999,000 | k) 500 million - 1 billion |
| f) 1 - 5 million | l) 1 billion or more |

Q8 Does your organisation buy the following categories of goods and services?
Please tick all that apply.

- a) Textiles, clothing and footwear
- b) Wood or wood products
- c) Paper, printed matter, printing, publishing and related services
- d) Motor vehicles, trailers, vehicle parts, transport equipment/land, water, air transport services
- e) Fuel or petroleum products
- f) Office machinery, such as computers, printers, copiers etc. and supplies (toner cartridges etc)
- g) Radio, television, communication, telecommunication, related equipment/apparatus or postal service
- h) (Electrical) machinery, equipment, appliances, apparatus and associated products
- i) Medical and laboratory devices and consumables, optical and precision devices, watches and clocks
- j) Furniture, manufactured goods, handicrafts, special-purpose products and associated consumables
- k) Electricity, gas, nuclear energy and fuels, hot water and other sources of energy
- l) Construction work
- m) Cleaning services
- n) Gardening, horticultural services
- o) Other please specify

Q9 What is your average contract length with suppliers (in years)?

Q10 How many suppliers do you have?

Q11 Has the number of suppliers to your organisation changed in the last 10 years?
How?

- a) Stay same
- b) Reduced
- c) Increased
- d) If increased or reduced, please estimate by what percentage?

Q12 Please estimate percentage of spend with your top 3 suppliers.

Q13 Please indicate how strongly you agree with the following statements concerning uncertainty of supply.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
a) Our demand fluctuates from week to week	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Our suppliers consistently meet our requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Our suppliers produce materials with consistent quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) The technology in our sector is rapidly changing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Technological changes provide big opportunities in our sector	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Our supply requirements vary drastically from week to week	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) It is very difficult to forecast where the technology in our sector will be in 3-5 years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q14 Please indicate how strongly you agree with the following statement concerning supplier commitment.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
a) We have a strong sense of loyalty to our suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) We are continually on the lookout for new sources to replace our suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Our relationships with suppliers are long term alliances	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) We are not very committed to our suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) We expect to be doing business with our suppliers for a long time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q15 Please indicate how strongly you agree with the following statements concerning strategic supply.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
a) Our purchasing is fully centralised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) The suppliers see our relationship as a long term alliance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) The purchasing function has a good knowledge of the organisation's strategic goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) We rely on a small number of suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Purchasing's focus is on longer term issues that involve risk and uncertainty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) We maintain close relationships with a limited pool of suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Purchasing is decentralised within our organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) We expect our relationship with key suppliers to last a long time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) We get multiple price quotes from suppliers before ordering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) The purchasing function has a formally- written long-range plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) We work with suppliers to improve their quality in the long run	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l) Purchasing performance is measured in terms of its contribution to the organisation's success	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m) We view our suppliers as an extension of our organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n) Purchasing is included in	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

the organisation's strategic
planning process

Q16 Please indicate how strongly you agree with the following statements concerning communication and IT.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
a) Exchange of information with suppliers takes place frequently, informally and / or in a timely manner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) We use electronic data interchange (EDI) with suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) We share sensitive information (financial, production, design, research) with suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) We use computers to process orders to suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) We keep each other informed about events or changes that may affect the other party	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Suppliers are provided with information that may help them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) We exchange performance feedback with suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) We use the internet with suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) We have frequent face-to-face planning / communication with suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sustainable procurement

Q17 Please indicate how strongly you agree with the following statements. Currently, our purchasing function

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
a) Uses a life-cycle analysis to evaluate the environmental friendliness of products and packaging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Has a formal minority/women-owned business enterprise (MWBE) supplier purchase program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Participates in the design of products for recycling or reuse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Ensures the safe, incoming movement of product to our facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Purchases from minority/women-owned business enterprise (MWBE) suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Volunteers at local charities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Asks suppliers to commit to waste reduction goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Purchases from small suppliers (<250 employees)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Visits suppliers' plants to ensure that they are not using sweatshop labour	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Participates in the design of products for disassembly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) Asks suppliers to pay a 'living wage' greater than a country's or region's minimum wage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l) Donates to philanthropic organizations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m) Ensures that suppliers' locations are operated in a safe manner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- | | | | | | | |
|----|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| n) | Ensures that suppliers comply with child labour laws | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| o) | Purchases from local suppliers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| p) | Reduces packaging material | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q18 Please indicate how strongly you agree with the following statements. As a result of undertaking socially responsible activities

- | | | Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
|----|--|--------------------------|--------------------------|---------------------------|--------------------------|--------------------------|
| a) | We have been able to obtain products or services from suppliers that are of higher quality | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) | We have lowered the cost of purchasing materials | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) | We have been able to obtain products or services from suppliers with shorter lead times | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) | Total costs have been reduced | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) | Suppliers have done their job more efficiently | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) | Labour costs have decreased | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q19 Please indicate how strongly you agree with the following statements on suppliers and sustainability.

- | | | Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
|----|--|--------------------------|--------------------------|---------------------------|--------------------------|--------------------------|
| a) | We encourage our existing suppliers to become more sustainable. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) | Cost and product quality play a more important role than sustainability criteria when we try to identify a new supplier. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) | We actively consider | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- switching to more sustainable suppliers.
- d) It is difficult for us to persuade our current suppliers to become more sustainable
- e) We set environmental criteria that suppliers must meet
- f) Sustainability plays an important role in our search for suppliers.
- g) We try, where possible, to replace less sustainable suppliers with more sustainable suppliers.

Q20 Please indicate how strongly you agree with the following statements on management commitment and environmental attitude.

- | | | Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
|----|---|--------------------------|--------------------------|---------------------------|--------------------------|--------------------------|
| a) | Top management behaves highly ethically and in a socially responsible manner | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) | Pollution prevention pays | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) | There is frequent encouragement from top management on socially responsible buying | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) | To avoid future (environmental) tragedies, we need a partnership of government, industry and academia | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) | Top management provides invisible, but value oriented support for socially responsible buying | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) | The environmental challenge is one of the central issues in the 21st century | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g) | Overall, top management is highly committed to | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- socially responsible buying
- h) Top management believes that higher financial risks are worth taking for social welfare

Q21 Please indicate how strongly you agree with the following key environmental concerns for your organisation.

- | | Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
|--|--------------------------|--------------------------|---------------------------|--------------------------|--------------------------|
| a) Complying with regulations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Preventing incidents | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Enhancing positive image | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Integrating environment into corporate strategy | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q22 Please give an example of a sustainable (or socially or environmentally responsible) procurement initiative your organisation is pursuing currently.

Q23 What prevents sustainable (or socially or environmentally responsible) procurement in your organisation?

Q24 What facilitates sustainable (or socially or environmentally responsible) procurement in your organisation?

Q25 Any other comments:

Thank you for taking the time to complete this Questionnaire. All responses will be treated confidentially and no sources will be disclosed in any outputs from this research.

Dr. Helen Walker
Senior Research Fellow
Centre for Research into Strategic Purchasing and Supply (CRiSPS)
University of Bath
School of Management

Note. Questionnaire scale items from Walker and Brammer (2009).

Appendix F

Permission to use Walker and Brammer (2009) PSRQ

from Cynthia Wolfe
to Helen Walker, S.J.A.Brammer

date Sun, Jun 20, 2010 at 12:38 PM
subject Sustainable Procurement Questionnaire (CRiSPS)

Hello Drs. Walker and Brammer,

I am a doctoral student at Northcentral University investigating the relationship between dimensions and drivers of purchasing social responsibility (PSR) and sustainability. Specifically, the inquiry involves whether identification as "sustainable" is a true reflection of a firm's PSR and is a viable differentiator from firms not identified as "sustainable." Identification can be through linkages with sustainable indexes (like the Dow Jones Sustainability Indices), through membership with an organization (as in The Sustainability Consortium), or submission of sustainability reports (such as those to the Global Reporting Initiative).

Your 2009 work, "Sustainable Procurement in the United Kingdom Public Sector" was based on the Sustainable Procurement Questionnaire available here: http://www.bath.ac.uk/crisps/projects/pdf/SP_Questionnaire.pdf. I am working through the proposal stage for my concept paper at this point and have contacted Dr. Carter about his original scale (2004), which you also referred to in your study. However, your questionnaire is updated and contains additional relevant questions about sustainable procurement. What are your requirements for the use of the Sustainable Procurement Questionnaire if it will meet the needs of my study proposal?

As a doctoral student with a BS in Environmental Science and an MBA, I see the critical relationship between sustainability and business in a world of global supply chains. As a department manager at a large paper manufacturing and packaging company, I see challenges to sustainability in the buyer-supplier interface.

I hope that this investigation will yield valuable information for those who wish to implement or expand their sustainability agendas, including justifying inclusion in sustainable listings by benchmarking the relative levels of PSR drivers compared to other firms. Please be so kind as to respond regarding any permission that is required to use the Sustainable Procurement Questionnaire in my research.

Kind regards,
Cindy Wolfe

from Helen Walker
to S.J.A.Brammer,
Cynthia Wolfe

date Wed, Jun 23, 2010 at 6:15 AM
subject Re: Sustainable Procurement Questionnaire (CRiSPS)

Hi Cynthia

We are fine with you using the questionnaire, and we would love to be kept informed about how your research progresses. Good luck with your doctoral studies.

Best

Helen and Steve

Dr. Helen Walker
Associate Professor,
Operations Management Group
Warwick Business School

from Cynthia Wolfe
to Helen Walker
cc S.J.A.Brammer

date Wed, Jun 23, 2010 at 7:25 AM
subject Re: Sustainable Procurement Questionnaire (CRiSPS)

Dr. Walker,

Thank you for your kind reply. I will certainly keep you and Dr. Brammer informed about my progress.

Regards,
Cindy Wolfe

Appendix G

Wolfe (2011) PSRQ

Sustainable Procurement Questionnaire

Dimensions of Purchasing Social Responsibility in Sustainable Supply Chain Organizations

You are invited to participate in a research study entitled "Dimensions of Purchasing Social Responsibility in Sustainable Supply Chain Organizations" being conducted for a dissertation at Northcentral University in Prescott Valley, Arizona.

The purpose of this study is to compare, analyze, and evaluate the dimensions of purchasing social responsibility (PSR) based on whether or not a firm identifies with voluntary public sustainability reporting. There are no right or wrong answers. We are interested in information about your firm's strategic procurement decisions. We appreciate your willingness to participate and share your experiences.

Your participation in this study will contribute to a growing body of knowledge about corporate purchasing policies related to sustainability. The results of this study will have scientific interest that may eventually be beneficial to managers involved in strategic firm decisions.

You will be asked to complete an electronic questionnaire about socially responsible actions conducted by purchasing or procurement organizations. The session is expected to last 10-20 minutes. You can fill out the survey in the convenience of your own home, at work, or at a library, on your personal computer or laptop. The data collected in this study are confidential and anonymous. Information will be shown only as aggregate data for analysis and interpretation. The data will be stored in a secure location.

Working professionals will benefit from this study by providing an opportunity for personal development and educational value. Although timely completion of tasks may be slightly stressful in nature, participation in this study does not involve risks to you beyond those associated with everyday living.

Your participation is completely voluntary and you have the right to withdraw from the study at any time without penalty. Other than the Informed Consent Acknowledgement and the Sustainability Reporting question, you may choose not to answer questions and you may withdraw at any time.

No monetary incentives for answering the survey will be offered. However, at the close of the survey, you may choose to enter your name in a drawing for a \$100 Visa gift card.

We would be happy to answer any questions that may arise about the study. Please direct your questions, comments, or requests for a copy of the research conclusions to:

Cynthia J. Wolfe, Doctoral
Candidate

Mirza B. Murtaza, Ph.D.
Dissertation Committee
Chair

Northcentral University
Attention: Institutional
Review Board

Sustainable Procurement Questionnaire

1. As a participant, you will choose between "I agree" and "No, thank you." Invitees who choose "No, thank you" do not accept the Informed Consent Acknowledgement and will exit the survey.

****This question is required.*

Informed Consent Acknowledgement:

- I agree to participate in the research. I have read the description of the study, "Dimensions of Purchasing Social Responsibility in Sustainable Supply Chain Organizations," and understand the conditions of participation. This choice will take me to the electronic survey. After completing the survey, I will have an opportunity to enter a drawing for a \$100 Visa gift card.
- No, thank you. By clicking this choice, I will exit the survey.

2. Sustainability reporting is one way company managers publicly report corporate activities that affect or relate to global economic prosperity, environmental concerns, and social consciousness.

Sustainability reports can be submitted to external auditing or reporting organizations, or can be made public through company communication channels such as mailings or the Internet.

Sustainability reports are also known as "corporate social responsibility reports," "CSR reports," "environmental reports," "sustainable accounting reports," and "social reports." Please indicate your organization's involvement in public sustainability reporting.

My organization:

- submits sustainability reports to one or more auditing or reporting organizations, and/or makes sustainability reports available to the public through company communication channels.
- does not submit sustainability reports to any auditing or reporting organizations, and/or does not make sustainability reports available to the public through company communication channels.

***This question is required.

3. Please choose the job title that most accurately describes your role in the organization:

- Purchasing Manager
- Corporate Purchasing Manager
- Division Purchasing Manager
- Purchasing Coordinator
- Source and Support Manager
- Sourcing Manager
- Buyer
- Other (please specify) _____

4. Please choose one response:

- My answers will be for my whole organization.
- My answers will be only for my business unit or department (if so, where question reads organization, please respond for your business unit or department)

5. How many employees are there in your organization?

- 1 - 49
- 50 - 99
- 100 - 249
- 250 - 499
- 500 - 999
- 1000+

6. The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. Please choose the NAICS Industry Classification your company. If you are unsure of your company's NAICS, please choose the best answer.

Select	Sector number	Description
	11	Agriculture, Forestry, Fishing and Hunting
	21	Mining
	22	Utilities
	23	Construction
	31-33	Manufacturing
	42	Wholesale Trade
	44-45	Retail Trade
	48-49	Transportation and Warehousing
	51	Information
	52	Finance and Insurance

	53	Real Estate and Rental and Leasing
	54	Professional, Scientific, and Technical Services
	55	Management of Companies and Enterprises
	56	Administrative and Support and Waste Management and Remediation Services
	61	Education Services
	62	Health Care and Social Assistance
	71	Arts, Entertainment, and Recreation
	72	Accommodation and Food Services
	81	Other Services (except Public Administration)
	92	Public Administration

7. How would you characterize purchasing decision-making and control in your organization?

- Controlled centrally by corporate purchasing
- Local purchasing management at production site or other noncorporate office
- Blend of corporate and local control of purchasing

8. Please indicate how strongly you agree with the following statements. Currently, our purchasing function:

		Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
a)	Uses a lifecycle analysis to evaluate the environmental friendliness of products and packaging					
b)	Has a formal minority/women owned business enterprise (MWBE) supplier purchase program					
c)	Participates in the design of products for recycling or reuse					
d)	Ensures the safe, incoming movement of product to our facilities					
e)	Purchases from minority / women-owned business enterprise (MWBE) suppliers					

f)	Volunteers at local charities					
g)	Asks suppliers to commit to waste reduction goals					
h)	Purchases from small suppliers					
i)	Visits suppliers' plants to ensure that they are not using sweatshop labor					
j)	Participates in the design of products for disassembly					
k)	Asks suppliers to pay a 'living wage' greater than a country's or region's minimum wage					
l)	Donates to philanthropic organizations					
m)	Ensures that suppliers' locations are operated in a safe manner					
n)	Ensures that suppliers comply with child labor laws					
o)	Purchases from local suppliers					
p)	Reduces packaging material					

9. Please indicate how strongly you agree with the following statements on suppliers and sustainability.

		Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
a)	We encourage our existing suppliers to become more sustainable					
b)	Cost and product quality play a more important role than sustainability criteria when we try to identify a new supplier					
c)	We actively consider switching to more sustainable suppliers					

d)	It is difficult for us to persuade our current suppliers to become more sustainable					
e)	We set environmental criteria that suppliers must meet					
f)	Sustainability plays an important role in our search for suppliers					
g)	We try, where possible, to replace less sustainable suppliers with more sustainable suppliers.					

10. Please indicate how strongly you agree with the following key environmental and social responsibility concerns of your organization.

		Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
a)	Complying with regulations					
b)	Preventing incidents					
c)	Enhancing positive image					
d)	Integrating environment and social responsibility into corporate strategy					

11. Please indicate how strongly you agree with the following statements on your organization's management commitment and environmental attitude.

		Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
--	--	-------------------	----------	---------------------------	-------	----------------

a)	Top management behaves highly ethically and in a socially responsible manner					
b)	Pollution prevention pays					
c)	There is frequent encouragement from top management on socially responsible buying					
d)	To avoid future (environmental) tragedies, we need a partnership of government, industry and academia					
e)	Top management provides invisible, but value oriented support for socially responsible buying					
f)	The environmental challenge is one of the central issues in the 21st century					
g)	Overall, top management is highly committed to socially responsible buying					
h)	Top management believes that higher financial risks are worth taking for social welfare					

12. Please indicate how strongly you agree with the following statements. As a result of undertaking socially responsible activities:

		Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
a)	We have been able to obtain products or services from suppliers that are of higher quality					
b)	We have lowered the cost of purchasing materials					
c)	We have been able to obtain products or services from suppliers with shorter lead times					
d)	Total costs have been reduced					
e)	Suppliers have done their job more efficiently					
f)	Labor costs have decreased					

13. Please indicate how strongly you agree with the following statements concerning uncertainty of supply.

		Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
a)	Our demand fluctuates from week to week					
b)	Our suppliers consistently meet our requirements					
c)	Our suppliers produce materials with consistent quality					
d)	The technology in our sector is rapidly changing					
e)	Technological changes provide big opportunities in our sector					
f)	Our supply requirements vary drastically from week to week					
g)	It is very difficult to forecast where the technology in our sector will be in 3-5 years					

14. Please indicate how strongly you agree with the following statements concerning supplier commitment.

		Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
a)	We have a strong sense of loyalty to our suppliers					
b)	We are continually on the lookout for new sources to replace our suppliers					
c)	Our relationships with suppliers are long term alliances					
d)	We are not very committed to our suppliers					

e)	We expect to be doing business with our suppliers for a long time					
----	---	--	--	--	--	--

15. Please indicate how strongly you agree with the following statements concerning strategic supply.

		Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
a)	Our purchasing is fully centralized					
b)	The suppliers see our relationship as a long term alliance					
c)	The purchasing function has a good knowledge of the organization's strategic goals					
d)	We rely on a small number of suppliers					
e)	Purchasing's focus is on longer term issues that involve risk and uncertainty					
f)	We maintain close relationships with a limited pool of suppliers					
g)	Purchasing is decentralized within our organization					
h)	We expect our relationship with key suppliers to last a long time					
i)	We get multiple price quotes from suppliers before ordering					
j)	The purchasing function has a formally- written long-range plan					
k)	We work with suppliers to improve their quality in the long run					
l)	Purchasing performance is measured in terms of its contribution to the organization's success					
m)	We view our suppliers as an extension of our organization					

n)	Purchasing is included in the organization's strategic planning process					
----	---	--	--	--	--	--

16. Please indicate how strongly you agree with the following statements concerning communication and information technology.

		Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
a)	Exchange of information with suppliers takes place frequently, informally and / or in a timely manner					
b)	We use electronic data interchange (EDI) with suppliers					
c)	We share sensitive information (financial, production, design, research) with suppliers					
d)	We use computers to process orders to suppliers					
e)	We keep each other informed about events or changes that may affect the other party					
f)	Suppliers are provided with information that may help them					
g)	We exchange performance feedback with suppliers					
h)	We use the Internet with suppliers					
i)	We have frequent face-to-face planning / communication with suppliers					

17. What is your organization's approximate annual purchasing spend in dollars?

- less than \$49,000
- \$50,000 to \$99,000
- \$100,000 to \$249,000
- \$250,000 to \$499,000
- \$500,000 to \$999,000
- \$1 million to \$25 million
- \$25 million to \$50 million
- \$50 million to \$500 million

- \$500 million to \$1 billion
- greater than \$1 billion

18. Does your organization buy the following categories of goods and services? Please check all that apply.

- Textiles, clothing and footwear
- Wood or wood products
- Paper, printed matter, printing, publishing and related services
- Motor vehicles, trailers, vehicle parts, transport equipment/land, water, air transport services
- Fuel or petroleum products
- Office machinery, such as computers, printers, copiers etc. and supplies (toner cartridges etc)
- Radio, television, communication, telecommunication, related equipment/apparatus or postal service
- (Electrical) machinery, equipment, appliances, apparatus and associated products
- Medical and laboratory devices and consumables, optical and precision devices, watches and clocks
- Furniture, manufactured goods, handicrafts, special purpose products and associated consumables
- Electricity, gas, nuclear energy and fuels, hot water and other sources of energy
- Construction work
- Cleaning services
- Gardening, horticultural services
- Other (please specify) _____

19. What is your average contract length with suppliers?

- Less than 1 year
- At least 1 year but less than 2 years
- At least 2 years but less than 4 years
- At least 4 years but less than 5 years
- 5 or more years

20. Approximately how many suppliers do you have? _____

21. How has the number of suppliers to your organization changed in the last 10 years?

- Stayed the same
- Reduced
- Increased

22. Please estimate percentage of spend with your top 3 suppliers.

Supplier 1: _____
 Supplier 2: _____
 Supplier 3: _____

23. Please give an example of a sustainable (or socially or environmentally responsible) procurement initiative your organization is pursuing currently.

24. What prevents sustainable (or socially or environmentally responsible) procurement in your organization?

25. What facilitates sustainable (or socially or environmentally responsible) procurement in your organization?

26. Any other comments:

Thank you for taking this survey.

Your response is very important to us. All responses will be treated confidentially and no sources will be disclosed in any outputs from this research.

As a thank you to participants, we are offering a drawing for a \$100 Visa gift card. Please fill out the form at the bottom of the page.

A winner will be randomly chosen and the gift card will be shipped postage paid to the address you specify. Good luck!

Thank you for taking the time to assist in this research. We would be happy to answer any questions that may arise about the study.

Cynthia J. Wolfe, Doctoral Candidate

Mirza B. Murtaza, Ph.D., Dissertation Committee Chair

Northcentral University
Attention: Institutional Review Board

[gift card entry form here]

Appendix H

IRB Approval

Sherri Alamillo
To: Mirza Murtaza

Thu, Apr 14, 2011 at 2:01 PM

Subject: Wolfe, Cynthia - 2011 IRB Application - Approval

April 14, 2011

Reference: Cynthia J. Wolfe
IRB: 2011-04-05-061

Dear Dr. Mirza Murtaza, Dissertation Chair:

On April 13, 2011, Northcentral University approved Cynthia's research project entitled, *Dimensions of Purchasing Social Responsibility in Sustainable Supply Chain Organizations*.

IRB approval extends for a period of one year and will expire on April 14, 2012.

Please inform the Northcentral University IRB when the project is completed.

Should the project require an extension, an application for an extension must be submitted within three months of the IRB expiration date.

In the interim, if there are any changes in the research protocol described in the proposal, a written change request describing the proposed changes must be submitted for approval.

Sincerely,

Dr. Chris Cozby
IRB Committee Chair
Northcentral University

Appendix I

Survey Invitation Letter

May 21, 2011

Purchasing, Sourcing, or Procurement Manager

NAME

ADDRESS

ADDRESS

Greetings,

As a purchasing professional, you are invited to participate in a dynamic new research study being conducted for a dissertation at Northcentral University in Prescott Valley, Arizona. The purpose of the study is to evaluate the dimensions of purchasing social responsibility (PSR) based on whether or not a firm identifies with voluntary public sustainability reporting.

The *Sustainable Procurement Questionnaire* will be available for a short period of time. To access this short survey, please type this link into your Internet browser address bar:

<https://www.surveymonkey.com/s/strategicpsr>

The data collected in this study are confidential and anonymous, and shown only as aggregate data for analysis and interpretation.

As a thank you for participating in this research, at the close of the survey there is an opportunity to enter a drawing for a

\$100 Visa Gift Card

Your participation in this study will contribute to a growing body of knowledge about corporate purchasing strategies related to sustainability. I am happy to answer any questions that may arise about the study and provide an Executive Summary upon request.

Thank you for your time,

Cynthia J. Wolfe

Doctoral Candidate

Mirza B. Murtaza, Ph.D.
Dissertation Committee Chair

Northcentral University
Attention: Institutional Review Board

Anonymity and Confidentiality Statement

At Northcentral University, the Institutional Review Board (IRB) is tasked with ensuring the dignity, rights, and welfare of human participants in research undertaken at the University. As a doctoral student, I petitioned the IRB for permission to begin this research. The members of the IRB reviewed my study including the plans and parameters for data collection and granted approval on April 15, 2011. My application included an explanation and documentation as to how responses would be anonymous and confidential. My research is being conducted under the review and oversight of the IRB, as well as my Dissertation Committee, chaired by Dr. Mirza B. Murtaza, Ph.D.

I chose SurveyMonkey to host the Sustainable Procurement Questionnaire used in this research project. SurveyMonkey surveys can be configured to ensure anonymity by selecting a setting that does not collect IP addresses. I chose this configuration so that answers cannot be tracked back to an individual, a workstation, or an IP address.

In addition, I chose not to use the email invitation option so that email addresses would not be associated with any part of data collection. As an additional layer of confidentiality, I developed a postal letter, a postcard, and an Internet posting to extend a personal invitation to non-named individuals, addressing the invitation to "Purchasing Manager" at firms listed on the New York Stock Exchange (NYSE). These firms represent the study sample population.

The data collected in this study are confidential. All data are coded numerically such that no identifying information is associated with participant responses. In addition, the coded data are made available only to the researcher through a password-protected web portal. At the close of the survey, the data collected by SurveyMonkey will be erased when I cancel my survey account. As you move through the survey, you will find that that wording of the questions is generic in that personally or company-specific identifiable information is not requested. At any time you feel uncomfortable answering a question, you may skip it and continue.

You may have noticed that the URL of the survey contains "https://" indicating that survey responses are sent over a secure, encrypted connection. Secure Sockets Layer or "SSL" encryption is often used for banking and other sites that require transmission of secure information over the Internet. SurveyMonkey uses Verisign certificate Version 3, 128 bit encryption. A third-party firm also conducts daily audits of SurveyMonkey's security and firewalls.

Sensitive data and information must be protected as it moves through electronic communication channels and collected for academic research. The purpose of this study is not to identify responses from particular firms, but rather to see if sustainability trends are present that distinguish buyer-supplier relationships within integrated supply chains. I appreciate your concerns about confidentiality and anonymity as related to this survey and the resulting research conclusions.

If you are a purchasing, sourcing, or procurement professional and your firm is publicly traded, please take a few minutes to complete the "Sustainable Procurement Survey" at the link below. Thank you in advance for completing the survey and forwarding the link to your procurement colleagues, customers, and friends.


<https://www.surveymonkey.com/s/strategicpsr>

I will be happy to provide an Executive Summary at the conclusion of my study to interested parties upon request. If you have any additional questions about the survey, this study, Northcentral University, or any of the guidelines that ensure that this research is being conducted in an appropriate and scholarly manner, please do not hesitate to contact me.

Cynthia J. Wolfe
Doctoral Candidate

Appendix J

Survey Reminder Postcard

	Survey Reminder
Purchasing, Sourcing, and Procurement Managers,	
<p>Recently, you were invited to participate in a dynamic new research study entitled <i>Dimensions of Purchasing Social Responsibility in Sustainable Supply Chain Organizations</i> being conducted for a dissertation at Northcentral University in Prescott Valley, Arizona. The purpose of the study is to evaluate the dimensions of purchasing social responsibility (PSR) based on whether or not a firm identifies with voluntary public sustainability reporting.</p>	
<p><u>If you have not already completed the survey</u>, this is a gentle reminder that the <i>Sustainable Procurement Questionnaire</i> will be available for a short period of time. Your answers to survey questions will be anonymous and confidential (<i>learn more: http://bit.ly/anonconf</i>). To access this short survey, type the following link into your Internet browser address bar:</p>	
https://www.surveymonkey.com/s/strategicpsr	
As a thank you for participating in this research, at the close of the survey there is an opportunity to enter a drawing for a <u>\$100 Visa gift card</u> !	
<p>Thank you for your time, Cynthia J. Wolfe, <i>Doctoral Candidate</i> cynthia.wolfe@gmail.com</p>	

Appendix K

Permissions

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July 27 2011



Cynthia J Wolfe
Northcentral University
Columbia, VA

REFERENCE

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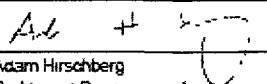
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July 12, 2011

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 801 West Michigan Street
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Roy Westbrook, PhD
 Dean of Development and External Relations
 Saïd Business School, University of Oxford
 Park End Street
 Oxford OX1 1HP

Hello Drs. Frohlich and Westbrook,

I am a doctoral student at Northcentral University, Prescott Valley, AZ, investigating the relationship between dimensions purchasing social responsibility (PSR) and sustainability. Specifically, the inquiry involves whether public identification as "sustainable" is a true reflection of a firm's PSR and is a viable differentiator from firms not identified as "sustainable."

In your paper, "Arcs of integration: an international study of supply chain strategies," published in Volume 19 (2001) of the *Journal of Operations Management*, there are several figures relating to the concept of integration arcs. I would like to use Figure 2 on page 187 to illustrate a point in my dissertation. Will you review this figure and grant permission for its use in my dissertation? The figure is:



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Kind regards,

Cynthia J. Wolfe
 Columbia, VA
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