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Purchasing's Contribution to the Socially Responsible Management of the Supply Chain

by

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**CENTER FOR ADVANCED
PURCHASING STUDIES**

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Executive Summary

The involvement of purchasing managers in the socially responsible management of the supply chain - a concept we call purchasing social responsibility (PSR) - consists of a wide array of behaviors that broadly fall into the categories of environmental management, safety, diversity, human rights and quality of life, ethics, and community and philanthropy activities. These issues have been examined by academic researchers to varying degrees in the past, but always in a stand-alone fashion. Our research project has the goal of studying these activities simultaneously. We have identified numerous, specific activities encompassed within PSR, which are described later in our executive summary and in the body of this focus study. We then examine the factors that drive PSR, barriers to PSR, ways of overcoming those barriers, and outcomes of PSR. These findings are briefly summarized next. If you find this brief summary interesting and useful, we suggest that you read through the remainder of the Executive Summary and the remainder of the focus study for more detailed explanations of how we derived our findings.

Findings and Implications

1. Activities surrounding the spheres of diversity, the environment, safety, human rights, and philanthropy in purchasing management - which have been studied by academics and often managed by practitioners as separate, stand-alone areas - are in fact related dimensions that fall under the umbrella of PSR.
2. Purchasing managers can and should build upon their experience in one area of PSR, such as the initiation of environmental purchasing activities, when implementing other PSR programs, such as developing safety procedures surrounding sourcing decisions and the incoming movement of inventory. The drivers, barriers, ways of overcoming those barriers, and outcomes are often quite similar across each of these dimensions of PSR.
3. Management can affect PSR by shaping an organizational culture that both facilitates and encourages such characteristics as being a good corporate citizen, being fair, and being supportive. Similarly, management can develop organizational policies that explicitly outline the firm's desire to engage in socially responsible behavior. Even in organizations that lack a supporting organizational culture, individual initiatives of purchasing employees, whose personal values and beliefs support PSR, can result in the successful implementation of PSR programs and activities.
4. When selecting an employee or manager to spearhead a PSR initiative, purchasing executives should identify individuals whose value systems are personally aligned with the PSR activity. Further, executives who wish to increase PSR within their organizations must create an environment that allows and encourages employees to identify opportunities and initiate actions in an entrepreneurial fashion.
5. Firms must proactively respond to customer requests and desires regarding their socially responsible initiatives. This finding emphasizes the need for purchasing managers to closely coordinate with marketing managers who sit at the firm's periphery and are in closest contact with downstream members of the supply chain.
6. A common barrier to PSR is difficulty in coordinating activities and objectives of internal functions or members of the supply chain. This barrier can be overcome by opening up lines of communication, providing training, developing explicit policies such as a code of ethics or ISO 14,000 certification, and

increasing the amount of formal coordination across functions or organizations in the supply chain.

7. Another barrier to the implementation of PSR activities is resistance by either employees or supply chain members such as suppliers or direct customers. Managers can overcome this barrier through (a) training, via either formal or informal instruction, and (b) increased communication, including more clearly explaining the reasons for implementing the specific PSR activity and soliciting employee's opinions regarding the PSR.
8. The lack of availability of a product or service can also act as a barrier to initiating PSR. Purchasing organizations that have difficulty finding sources of supply for PSR initiatives can overcome this barrier through supplier development activities that include providing expertise or low interest rate start-up capital, or even creating new subsidiaries.
9. The involvement of purchasing employees in PSR results in increased commitment to relationships with PSR suppliers and increased trust in those suppliers. However, trust can be hampered by a lack of communication with PSR suppliers. Buyers must clearly communicate their expectations to PSR suppliers and must ensure that PSR suppliers keep buyers well-informed about the suppliers' operations, including aspects such as new product developments, quality levels, and inventory and lead time status. Similarly, buyers should ensure that clear lines of communication exist within their own organization.
10. Trust in turn leads to cooperation between buyers and PSR suppliers. When buyers trust their suppliers of PSR activities, they are willing to cooperate by providing assistance to these suppliers and jointly solving problems as they arise. Ultimately, this cooperation between buyers and their PSR suppliers increases supplier performance in such areas as product quality and lead times. These cooperative efforts lead to results that exceed those that the buying organization might achieve by acting independently and in its own best interests.
11. Finally, higher levels of PSR also lead directly to improved levels of supplier performance, suggesting that PSR activities are more than just window dressing that can be used for marketing campaigns which emphasize the firm's social responsibility. Instead direct, tangible benefits result in the form of improved supplier performance. While we certainly do not advocate that purchasing executives and managers blindly initiate PSR activities without a careful, prior analysis, our survey findings lend

further support to the conclusions drawn from our interviews with supply chain managers in general: purchasing managers who engage in PSR can experience tangible and direct benefits, which may ultimately lead to a competitive advantage for their firms.

Introduction

Consider the following statements that have recently appeared in the *Wall Street Journal*:

"NEW YORK -- Corporate leaders and human-rights activists closed ranks at the United Nations to endorse a set of business principles designed to promote corporate responsibility and robust profits." (Anonymous, 1999)

"John E. Hoth, the owner of a Cedar Rapids, Iowa, trucking firm, could go to prison on a charge that was once all but unheard-of: He didn't allow his drivers to get enough sleep." (Starkman, 1998)

"Sears, Roebuck & Co. said that its former car-battery buyer was bribed by battery supplier Exide Corp., and that the big credit-card and retail company is cooperating with a federal investigation into its battery sales." (Bailey, 1999)

These seemingly diverse issues are in fact related and can be grouped under the label of *corporate social responsibility*, a term we define as management's duty to make decisions and take action so that the firm contributes to the welfare and interest of both society and itself. Corporate social responsibility (CSR) is increasingly expected by a firm's stakeholders while, as evidenced by the above quotes from the popular press, a lack of CSR can damage relationships with stakeholders such as customers, the media, and regulatory agencies.

Supply chain managers must also be aware of the concept of CSR, as these individuals sit at an organization's boundaries and are often the key interfaces with external stakeholders that include suppliers, customers, and regulatory bodies. Although the concept of CSR has been extensively researched in the area of general management, within the field of supply chain management the activities that comprise CSR - such as the environment, diversity, human rights, and safety - have been examined as separate, stand-alone areas of research. If in fact these areas are related and do fall under the umbrella of CSR, then supply chain managers must be cognizant of these relationships. Managers who understand these relationships can build upon their knowledge about the drivers, barriers, and outcomes of initiating activities in one area of CSR, such as

environmental purchasing, when implementing a program in another dimension, such as sourcing from MBE suppliers.

Objectives of the Research

The broad purpose of our study is to tie together the issues relating to corporate social responsibility to answer the following research questions:

1. What are the specific activities that comprise the socially responsible management of the supply chain?
2. What are the antecedents to the socially responsible management of the supply chain?
3. What are the consequences of managing the supply chain in a socially responsible manner?

To answer these questions, we conducted a two-stage study. In the first phase, we conducted in-depth interviews with 26 executives and managers in three broad areas of logistics management: purchasing, transportation, and warehousing. Here our study was more exploratory; our goal was to examine the issues relating to the socially responsible management of the supply chain from a cross-functional perspective, a concept we call *logistics social responsibility* (LSR).

In the second phase of our study, we tested portions of our findings from the interviews using a large-scale survey of purchasing managers. Here we examine purchasing's involvement in CSR, a concept we call *purchasing social responsibility* (PSR). Again, we organize the findings from this survey along the study's three research questions.

In the following sections we combine and summarize our findings from the interviews and our mail survey. We report and organize our findings by answering each of the study's research questions via a summary of the most salient features from our research. We recommend that you further review the detailed discussion of the results that appears in the main body of this report, to better understand the relationships and insights highlighted in this summary.

The Socially Responsible Management of the Supply Chain

Research Question 1: What Are the Specific Activities that Comprise the Socially Responsible Management of the Supply Chain?

The interview results suggest that the activities of the purchasing, transportation, and warehousing managers fall into several broad categories that include the environment, ethics, diversity, working conditions and human rights, safety, and philanthropy and community involvement. We will discuss these activities from the perspectives of each set of managers. While we recognize that this report is aimed primarily at purchasing managers, we also believe that purchasing managers can benefit from a better understanding of how other functional areas within supply chain management are involved in CSR.

Purchasing Management - The socially responsible activities that emerged from the interviews with purchasing managers fell into six broad categories: the environment, ethics, diversity, human rights, safety, and philanthropy/community involvement. Environmental activities include packaging reduction and purchasing recyclable and reusable packaging, working with suppliers to ensure their processes and products are environmentally sound, conducting environmental life cycle analyses, and designing products for reuse and recycling. A number of unethical actions (the opposite of socially responsible behavior) were listed by purchasing managers. These include lying to or misleading a supplier representative, exaggerating the seriousness of a problem to gain concessions from a supplier, and sharing information about suppliers with their competitors.

Philanthropy and community activities include helping to develop local suppliers and auctioning or donating gifts from foreign suppliers. Diversity issues primarily surround programs designed to encourage sourcing from minority- and/or women-owned suppliers, while human rights issues center around ensuring that suppliers maintain fair and humane working conditions and pay a reasonable wage to their workers. A related issue is ensuring safe working conditions at suppliers' facilities. Safety issues can also encompass ensuring the safe, incoming movement of purchased material to the buyer's plant.

Transportation Management - A similar set of activities emerged for transportation managers. These managers can contribute to environmental initiatives by ensuring that vehicles are properly maintained in order to maximize fuel efficiency and minimize leaks; properly transporting hazardous materials; and participating in the reverse,

upstream movement of product for the purposes of reuse and recycling. Ethical issues center on avoiding the receipt or offering of bribes, while diversity issues include the selection of minority-owned carriers and staffing issues in what has traditionally been a functional area dominated by white males. Quality of life issues for drivers are somewhat similar to the human rights issues discussed previously, and include the relatively low hourly wages earned by drivers and the long periods of time in which drivers may be required to be away from home.

Warehouse Management - For warehouse managers, LSR activities include the environment, diversity, quality of life, safety, and philanthropy/community issues. Environmental activities include implementing reverse logistics, properly storing and disposing of hazardous materials, and finding revenue-generating uses for obsolete inventory. This last activity, asset disposal, is an area for which purchasing managers may also have responsibility. The specific activities encompassing diversity and quality of life are somewhat generic, in that they could apply to most functional areas within an organization. Further, ethical activities were not mentioned in the interviews with warehouse managers.

Survey Results - Purchasing Social Responsibility (PSR) - The empirical results from our survey suggest that activities surrounding the spheres of diversity, the environment, safety, human rights, and philanthropy in purchasing management - which have been studied by academics and often managed by practitioners as separate, stand-alone areas - are in fact related and fall under the umbrella of PSR. The results indicate the need for purchasing managers to build upon their experience in one area of PSR, such as the initiation of environmental purchasing activities, when implementing other PSR programs, such as developing safety procedures surrounding sourcing decisions and the incoming movement of inventory. Similarly, many of the barriers that occur during the initiation of one dimension of PSR will likely exist with other dimensions of PSR. The identification of those barriers that are most significant can help managers to allocate scarce resources toward overcoming those barriers, and the methods used to overcome these barriers will in many cases be similar across the sets of PSR activities. Finally, the outcomes of one set of activities will often be similar to those of other PSR areas.

Next, we consider the antecedents and outcomes of the socially responsible management of the supply chain, from both a broad, cross-functional perspective and the more in-depth viewpoint of purchasing managers.

Research Question 2: What Are the Antecedents to the Socially Responsible Management of the Supply Chain?

Drivers - Our survey research suggests that there are at least four significant and direct drivers to PSR:

1. A people-oriented organizational culture which espouses values such as fairness and the desire to be a good corporate citizen
2. Organizational policies which promote social responsibility
3. Individual employee initiatives
4. Pressures from external customers

Interestingly, top management support had no direct influence on PSR, nor did the individual values of employees. However, we found that top management support can significantly help to shape a people-oriented organizational culture and is key to forming organizational policies relating to PSR. Further, when purchasing employees' individual values are aligned with socially responsible goals, this has a significant and positive impact on socially responsible initiatives taken by these employees.

Barriers and Ways Overcome - In this section we report the results from our in-depth interviews with logistics managers from the areas of purchasing, transportation, and warehousing. The most common barrier mentioned by informants was difficulty in coordinating activities and objectives of internal functions or members of the supply chain. This barrier was overcome by opening up lines of communication, providing training, developing explicit policies such as a code of ethics or ISO 14,000 certification, and increasing the amount of formal coordination across functions or organizations in the supply chain. For example, the purchasing function at one chemical concern had difficulty coordinating with small and one-time suppliers to ensure proper labeling of inbound hazardous materials. As described by the firm's purchasing manager, this barrier was overcome through the development of specific ISO procedures:

"It was hard making sure small or occasional suppliers were properly marking their products, but again that gets to ISO, where if we have to bring it in without a label, there's what we call a nonconforming area at each of the locations where something is put until it's checked out properly."

Our findings suggest that while coordination is a common barrier to LSR, firms can overcome this barrier by increasing communication and developing specific, explicit policies.

Interviewees also listed resistance to implementation of LSR activities, either by employees or supply chain members such as suppliers or direct customers, as a barrier to LSR. In these cases, this barrier was overcome through the use of one or both of the following tactics: (1) training, via either formal or informal instruction, and (2) increased communication, including more clearly explaining the reasons for implementing the LSR activity and soliciting employee's opinions regarding the LSR.

In four cases organizational culture was listed as a barrier by informants. In each case, however, the personal values or morals of the logistics managers were also listed as a driver, where managers stated that engaging in the LSR was simply "the right thing to do." One purchasing manager stated:

"It all seems quite positive on paper. In reality, however, they don't support the [minority supplier] program. Corporate culture does not spill over to the subsidiaries. Whatever I have done has been purely on my own because I thought it was the right thing to do."

This suggests that even in organizations that lack a supporting organizational culture, individual initiatives of purchasing employees, whose personal values and beliefs support PSR, can result in the successful implementation of PSR programs and activities.

Finally, some interviewees stated that the lack of availability of a product or service had acted as a barrier to initiating LSR. In all these cases resources were allocated to create or expand the necessary sources of supply. These resources could be used to develop a first-tiered supplier, as well as a new organization that contributes to the reverse movement of materials in the supply chain. For example, paperboard recycling facilities were created by one firm to ensure the availability of recycled packaging for their products. Thus firms that have difficulty finding sources of supply for PSR initiatives can overcome this barrier through supplier development activities that include providing expertise or low interest rate start-up capital, or even creating new subsidiaries.

Research Question 3: What Are the Consequences of Managing the Supply Chain in a Socially Responsible Manner?

Several interviewees specifically mentioned reduced costs as an outcome of LSR. In only two cases did interviewees state that costs had increased. These latter cases involved purchasing managers who were describing environmental activities. However, these same purchasing managers mentioned increased revenues, the establishment of a safer, cleaner, or healthier environment for employees or external stakeholders, and improved relationships with customers and suppliers as additional consequences of LSR. This suggests that the increased costs may very well have been more than compensated for through increased sales and more efficient relationships with other organizations in the supply chain.

The qualitative data suggest that managers cannot blindly pursue LSR objectives, such as sourcing from MBE suppliers, at the expense of higher costs or lower levels of quality. However, well-planned LSR initiatives, which simultaneously take into account the goals of social responsibility and firm performance, appear to lead to increased performance. We tested this assertion using our survey data, in the context of how PSR might affect relationships with PSR suppliers and ultimately influence supplier performance.

Our survey results show that the involvement of purchasing employees in PSR results in increased commitment to relationships with PSR suppliers and increased trust in those suppliers. As purchasing managers become more involved in PSR and integrate socially responsible suppliers into their firms' supply chains not only does their trust in these suppliers increase, but also their commitment to relationships with these suppliers increases. We also find a negative relationship between a *lack* of communication and the presence of trust, suggesting the need for buyers to open up lines of communication with their PSR suppliers. This finding suggests that buyers must clearly communicate their expectations to PSR suppliers and must ensure that PSR suppliers in turn keep buyers well-informed about the suppliers' operations, including aspects such as new product developments, quality levels, and inventory and lead-time status. Similarly, buyers should ensure that clear lines of communication exist within their own organization.

Trust in turn leads to cooperation between buyers and PSR suppliers. When buyers trust their suppliers of PSR activities, they are willing to cooperate by providing assistance to these suppliers and jointly solving problems as they arise. Ultimately, this cooperation between buyers and their PSR suppliers increases supplier performance.

These cooperative efforts lead to results that exceed those the buying organization might achieve by acting independently and in its own best interests. For the purchasing manager, this finding implies that closer cooperation with suppliers of PSR initiatives can result in improved performance by these suppliers in such areas as product quality and lead times.

Finally, higher levels of PSR also lead directly to improved levels of supplier performance, irrespective of improvements in commitment and cooperation. Our results suggest that PSR activities are more than just window dressing that can be used for marketing campaigns that emphasize the firm's social responsibility. Instead direct, tangible benefits result in the form of improved supplier performance. While we certainly do not advocate that purchasing executives and managers blindly initiate PSR activities without a careful, prior analysis, our survey findings lend further support to the conclusions drawn from our interviews with logistics managers: purchasing managers who engage in PSR can experience tangible and direct benefits which may ultimately lead to a competitive advantage for their firms.

Design of the Study

Objectives

This study was conducted to answer the following research questions:

1. What are the specific activities that comprise the socially responsible management of the supply chain?
2. What are the antecedents to the socially responsible management of the supply chain?
3. What are the consequences of managing the supply chain in a socially responsible manner?

Design

The study consists of two primary segments: (1) in-depth interviews with supply chain managers in the areas of purchasing, transportation, and warehousing; and (2) a mail survey sent to purchasing managers.

Interviews

To provide initial answers to the study's broad research questions, we conducted in-depth interviews with 26 purchasing, transportation, and warehousing managers in a cross-section of industries including both manufacturing and service organizations. The results from this portion of our research are reported as a series of propositions relating to a framework which maps out the propositions and provides an outline to help guide future research endeavors in this area. The propositions are grounded in the data (Glaser & Strauss, 1967) as well as complementary, extant literature (Sherry, 1991). Our choice of a more qualitative approach is based on the exploratory nature of our research, as well as our desire to develop rich explanations of the phenomenon under study (Eisenhart, 1989; Glaser & Strauss, 1967; McGrath, 1982).

We employed a semistructured interview approach, which is displayed in Appendix A. Despite the advocacy by some researchers for unstructured field work (Spradely, 1979), others suggest that the "tighter design" of a more structured approach allows greater clarity and the avoidance of "data overload" (Miles & Huberman, 1994). A more structured design also provides researchers with the ability to narrow and be selective in the collection of data (Weller & Romney, 1988). In addition it is impossible and undesirable to enter the research without some purpose, even with entirely "unstructured" qualitative research (Wolcott, 1982).

Use of a semi-structured approach helps to achieve internal validity by ensuring that responses are measured comparably across interviewees (Weller & Romney, 1988). We assessed face validity through a pretest of the survey instrument, followed by a pilot test with logistics managers. All these individuals were from separate firms not serving as interview participants. Finally, we used archival data and requested independent documentation to aid in triangulation with the interviewees' verbal responses (Ellram, 1996).

We did not create codes for our data in advance of the interviews. Instead, we took a more grounded approach, promoted by Glaser & Straus (1967), of developing codes that represent the data. We then used the level 1, or specific codes, to pull together the data contained in the over 800 pages of transcripts, to create meaningful thematic links and patterns through higher level analyses. As is the case with all approaches to the coding of qualitative data, our level 1 codes developed and transformed as our case studies continued and new understandings and insights to the data emerged (Lincoln & Guba, 1985) or as codes decayed or became too general (Miles & Huberman, 1994). These latter issues occurred through the numerous iterations and review of our notes and transcribed interviews. We conducted higher-level coding and analyses by

constructing and analyzing partially ordered meta-matrices (Miles & Huberman, 1994) and conceptually clustered matrices (Strauss & Corbin, 1990).

In the next major section, we discuss the results from these analyses. We then narrow our focus and specifically examine how purchasing managers can contribute to the socially responsible management of the supply chain. For this purpose, we employed a mail survey.

Survey Questionnaire

We developed our survey by combining our findings from the in-depth interviews with those from an extensive literature review which examined a number of streams of research, including environmental purchasing, purchasing from minority business enterprises, ethical issues in buyer-supplier relationships, corporate social responsibility, organizational behavior, and organization development. Appendix B provides a more in-depth explanation of construct development and survey pretesting and pilot testing.

The Sample

The survey was sent to the purchasing organizations of 1,000 U.S. firms in consumer products manufacturing industries (SIC codes 20, 23, 28, 36, and 39). The survey was addressed to purchasing personnel at the manager level or higher who were members of the National Association of Purchasing Management (NAPM). Dillman's (2000) tailored design method was employed, with one complete mailing, a follow-up postcard, and a second complete mailing sent to purchasing managers.

A total of 201 usable surveys were received. Another 66 surveys were returned and were not applicable because the respondent was no longer with the company, no longer employed in the purchasing function, or the firm did not source directly from foreign suppliers. This resulted in an effective response rate of 21.5 percent.

Nonresponse Bias

Nonresponse bias occurs when the opinions and perceptions of the survey respondents do not accurately represent the overall sample that the survey was sent to. One test for nonresponse bias is to compare the answers of early versus late respondents to the survey (Lambert & Harrington, 1990). The idea is that late respondents are more likely to answer the questionnaire like nonrespondents than are early respondents (Armstrong & Overton, 1977).

A natural breakpoint occurred between the first and second response waves of the survey, and a multivariate T test was computed using the key study variables in order to determine whether significant differences exist between the early and late respondents. The results suggest that

early respondents do not display statistically significant differences from late respondents ($p=0.4159$).

As an additional test for nonresponse bias, 20 nonrespondents were randomly chosen from the sample (Lohr, 1999). These nonrespondents were sent an abbreviated form of the questionnaire via priority mail, and follow-up phone calls were made to ensure that all 20 of the selected nonrespondents to the original questionnaire completed and returned the abbreviated survey. A second multivariate T test was computed, comparing the responses to the full-length questionnaire to those of the abbreviated questionnaire. No significant differences were found between respondents and nonrespondents ($p=0.6863$).

Social Desirability Bias

Social desirability bias occurs in survey research when respondents inaccurately answer questions to conform to social norms or the expectations of the researcher, in order to portray themselves in a more favorable light. In order to solicit candid responses about their level of involvement in unethical activities, purchasing personnel were asked to answer these questions in terms of the activities of the purchasing department in general, rather than the actions of the individual buyer or purchasing manager. A similar technique was used by Rudelius & Buchholz (1979) in an attempt to minimize social desirability bias. Further, it has been shown that this type of "other-based" questioning is more effective in lowering social desirability bias than the major competing method, the randomized response technique (Armocost et al., 1991).

In addition to taking this precautionary measure, a scale was included in the survey to measure social desirability bias. This scale was an abbreviated version of the Crowne-Marlowe Social Desirability Scale (Crowne & Marlowe, 1960). The scale used in the survey was shortened due to (1) length considerations, and (2) the nonapplicability of some of the scale items in the original Crowne-Marlowe Social Desirability Scale, which was developed for the purpose population in general rather than businesspeople in particular. An analysis of the relationship between the social desirability scale and responses to questions assessing socially responsible activities was conducted. No significant relationship exists ($p=0.4501$), suggesting that respondents did not bias the answers to the survey questions in order to appear more socially desirable.

Key Informant Issue

Two explicit measures were taken to ensure that the survey respondents were in fact knowledgeable and appropriate (key) informants (Campbell, 1955). First, results from the in-depth interviews and pretest suggested that purchasing personnel at the manager level or higher were qualified to answer the survey's questions (John & Reve, 1982). The survey was also pilot tested with a group of

more than 50 purchasing managers. This pilot test included an open discussion of the survey's questions and the study's model. The participants of the pilot test also suggested that personnel at the manager level or higher were capable of validly answering the questionnaire. Second, the survey instrument included questions assessing the informant's involvement in PSR. These questions are described next.

Two broad approaches have been used to evaluate the competency of informants in interorganizational research (Kumar et al., 1993). One approach is to use broad, global measures of an informant's competency, such as length of time employed with an organization or length of time involved in the interorganizational relationship (Phillips, 1981; Phillips, 1982). The second approach involves asking specific questions about an informant's knowledge and competence in answering each set of questions measuring the study's constructs (e.g., Cusumano & Takesishi, 1991).

One disadvantage of asking specific questions about an informant's knowledge and competence is that these questions can be reactive, conditioning later responses of informants if asked at the beginning of the survey, or irritating informants if asked at the end. Further, global measures have an advantage for researchers who are operating under severe constraints in terms of questionnaire length.

For these reasons, we asked two questions assessing a respondent's involvement in PSR: (1) the number of years the respondent has been involved with the purchasing function's socially responsible initiatives, and (2) the degree of involvement on a 1 to 7 Likert scale, where 1 indicates *only somewhat involved* and 7 indicates *very involved*. Informants who indicated they were only somewhat involved in socially responsible initiatives for one year or less were eliminated from further analyses. Two informants fell into this category.

Statistical Methods Used and Glossary of Terms

p: Throughout this report, the investigators will report a "p," or probability value. For example, the researchers may report " $p < 0.0001$," or " $p < 0.05$," (p is less than 0.0001; p is less than 0.05). The researchers may state that the difference between the response of buyers and their suppliers for a particular activity is "significant at $p < 0.0001$." This p value of 0.0001 means that there is only one chance in 10,000 that the difference in responses occurred by chance. Because there is only a slight chance that the difference occurred by coincidence, one would say that there is a "statistically significant difference." For this study, a significant difference in means or a significant relation between two variables is said to exist if a p -value is less than or equal to 0.05.

Structural Equation Modeling: We used these methods to determine how one set of variables, such as organizational culture or government regulation, might influence respondents' involvement in the socially responsible management of the supply chain. Structural equation modeling was also used to determine how the socially responsible management of the supply chain in turn affects outcome variables like trust, cooperation, and supplier performance.

A **construct** is a concept or variable, such as the socially responsible management of the supply chain, or organizational culture. It would have been difficult to assess some of the study's constructs using a single survey question. For example, it would have probably not been possible to obtain an accurate response to a single question that asked purchasing managers whether their firm was involved in the socially responsible management of the supply chain, or whether their suppliers perform well. For this reason, multiple questions were used to measure many of the study's constructs.

Reliability refers to the extent to which scores of survey questions are consistently measuring the same underlying construct. **Validity** refers to the extent to which scale items are actually measuring the construct in question, rather than an alternative construct. The statistical analyses and methodologies used to examine the reliability and validity of the study's constructs are presented and explained in detail in Appendix B.

Study Results

After a brief introduction, we present the broad results from the in-depth interviews with logistics managers in the next section of the report. In the subsequent major section of the study, we introduce hypotheses related to the study's research questions. We then discuss the results from the survey questionnaire in the order of the study's research questions. Finally, we present our conclusions, discuss the study's limitations, and provide suggestions to help guide future research.

The Socially Responsible Management of the Supply Chain

Introduction

Consider the following statements that have recently appeared in the Wall Street Journal:

“NEW YORK -- Corporate leaders and human-rights activists closed ranks at the United Nations to endorse a set of business principles designed to promote corporate responsibility and robust profits.” (Anonymous, 1999)

“John E. Hoth, the owner of a Cedar Rapids, Iowa, trucking firm, could go to prison on a charge that was once all but unheard-of: He didn't allow his drivers to get enough sleep.” (Starkman, 1998)

“Sears, Roebuck & Co. said that its former car-battery buyer was bribed by battery supplier Exide Corp., and that the big credit-card and retail company is cooperating with a federal investigation into its battery sales.” (Bailey, 1999)

“The road war is spreading throughout small-town America. Not only has the number of trucks ballooned to an all-time high in this booming economy, but the rigs have gotten longer, heavier and faster. More important to places like Woodstock, truckers are increasingly taking alternate small-town routes to shorten their trips and avoid tolls and inspection stations on main highways.” (Machalaba, 1998)

These seemingly diverse issues are in fact related and can be grouped under the label of *corporate social responsibility*. More formally, corporate social responsibility (CSR) can be defined as management's duty to make decisions and take action so that the firm contributes to the welfare and interest of both society and itself (Szwajkowski, 1986),

and can include such diverse subsets of activities as the environment, diversity, safety, and human rights.

Logistics managers must also be aware of the concept of social responsibility, as noted by Bowersox (1998, p. 2): “the logistical mission of yesterday is being replaced by a broader concept driven by social responsibility.” Interestingly, while corporate social responsibility has long been researched in the wider field of management, the field of logistics management has yet to see the development of a general framework. Instead, these issues have been examined separately and include research on reverse logistics and environmental supply chain management; diversity within a firm's logistics workforce and the broader supply chain; safety of transportation and warehousing operations; and ethical issues in buyer-supplier relationships.

Purpose

The broad purpose of this portion of our project is to examine the issues relating to the socially responsible management of the supply chain from a cross-functional perspective, a concept we call *logistics social responsibility* (LSR). More specifically, our goal is to answer the following research questions:

1. What are the specific activities that comprise LSR?
2. What are the antecedents to LSR?
3. What are the consequences of LSR?

To answer these questions, we conducted in-depth interviews with 26 executives and managers in three broad areas of logistics management: purchasing, transportation, and warehousing. We then integrated our findings with those from an extensive review of the literature from the areas of logistics management, general management, corporate social responsibility, and business ethics. In the

sections that follow we present our findings for each of the research questions.

Literature Review

Carroll (1979, 1991), suggests that social responsibility consists of four hierarchically related duties:

1. Economic Responsibilities - to transact business and provide needed products and services in a market economy
2. Legal Responsibilities - to obey laws which represent a form of "codified ethics"
3. Ethical Responsibilities - to transact business in a manner expected and viewed by society as being fair and reasonable, even though not legally required
4. Voluntary/Discretionary or Philanthropic Responsibilities - to conduct activities which are more "guided by business's discretion" than actual responsibility or expectation.

Sethi (1975) develops an overlapping taxonomy, and states that a firm's social activities range from social obligations, which correspond to Carroll's economic and legal responsibilities through social responsibility and social responsiveness, which correspond roughly to Carroll's ethical and discretionary responsibilities, respectively.

Carroll does not suggest that the categories of his framework are entirely mutually exclusive, but rather provide a reasonable starting point in which to pragmatically examine CSR. As noted by Epstein (1987, p. 103), the concepts of business ethics and CSR "are often employed interchangeably in the corporate social performance literature and, occasionally, even within a single study, without any explicit recognition of their differences." At the same time, Epstein notes that academics have also examined and discussed the concepts of business ethics or corporate social responsibility without recognizing the potential overlap between these two areas of research.

While definitions and conceptual frameworks of CSR and ethics have long been proposed, we are unaware of any empirical research in the area of CSR as it applies to business in general or supply chain management in particular. What are the specific dimensions of CSR as it applies to the management of the supply chain? Our objective in asking the study's first research question is to analytically examine the various components of LSR, as defined and operationalized by logistics managers and extant literature.

Specific sets of activities or dimensions of CSR identified in the literature include charitable and philanthropic donations (Wokutch, 1998), community considerations (Mallot, 1998), the advancement of gender, racial, and religious diversity in the workplace (Clair et al., 1997), safety (Wokutch, 1992), human rights (Jennings & Enine, 1999), and the environment (Fryxell & Dooley, 1997). In several taxonomies and frameworks, ethics is also considered to be a dimension of corporate social responsibility (Llewellyn, 1998) which is not required but is expected of businesses (Carroll, 1979, 1991; Sethi, 1975). Topics surrounding business ethics found in the CSR literature include antitrust and pricing policies, dubious sales inducements, deceit, and foreign bribery (Wolcutch & Mallot, 1998).

The components of social responsibility and ethics remain an area of intense discussion and dispute in the field of business ethics. Solomon (1999, p. 169) notes that business ethics, despite 30 years of active research and literature, "has not developed its own solid core, a set of agreed-upon definitions or structures, a distinctive approach or paradigm, a theory all of its own." The literature is not, however, without attempts to define ethics and social responsibility. Betz (1998) attempts to address the divide between topics of business ethics and those of a political nature by modeling political behaviors and then fitting positions on ethical problems into these models. Betz uses product liability, privatization of government services, and protecting worker safety as examples of those ethical problems that do not share a settled and common view and are, therefore, political issues. He cites lying, wanton injury, and sexual harassment as examples of behaviors in which there are settled, shared, and common values for resolution.

Collier (1998) has created a theoretical model for "ethical decision making" that focuses on the efficiencies that these managers explain as results of PSR. Her five ethical components include:

1. information sharing
2. creativity and innovativeness
3. objective setting
4. task evaluation
5. social interaction

Schudt (2000) suggests that the ethical and social responsibilities of business are efficient production, resource management, correct pricing, and the right relationships.

The remaining literature reflects a field struggling with the duties, values, and definitions of business ethics and social

responsibility. Boatright (1999) has written of the confusion in defining the values of business in a piece entitled "Does Business Ethics Rest on a Mistake?," the focus of which is an attempt to determine whether the correct values are being used by managers. He equates social responsibility with ethics, citing companies doing business in countries where there are human rights violations as an ethical issue, not one of social responsibility.

Review of Logistics Literature

Murphy & Daley (1990, p. 22) note that activities "associated with social responsibility include the recruitment of minority employees, environmental concerns, and on-the-job safety." Interestingly, we are unaware of any conceptual framework within the field of logistics management that ties together issues like diversity, the environment, and safety. We next review logistics and supply chain management literature in these and other related areas.

Logistics literature in the area of environmental management includes case studies of reverse logistics (Kopicki et al., 1993; Stock, 1992, 1998) and environmental supply chain management (Handfield et al., 1997), and survey research which is used describe the involvement of logistics managers (Murphy et al., 1995) and develop a taxonomy of environmental logistics strategies (Murphy et al., 1996). Survey research has also been employed to study environmental purchasing (Min & Galle, 1997), including its antecedents (Carter & Carter, 1998; Carter et al., 1998) and economic consequences (Carter et al., 2000). In the area of transportation management, the environmental focus has included carrier selection for hazardous materials (Sharp et al., 1991), private transportation of hazardous materials (Kalevela & Radwan, 1988; Rittvo & Haddow, 1984), and reduction of fuel consumption and emissions (Albersheim, 1982; McKinnon et al., 1993).

Within the ethics arena, topics include the interaction of shippers and motor carriers (Murphy & Daley, 1990; Murphy et al., 1991) and purchasing and other industrial suppliers (Carter, 2000a; Carter, 2000b; Dubinsky & Gwin, 1981; Felch, 1985; Turner et al., 1994). Our review of the ethics literature in these areas suggests that many of the issues in transportation, purchasing, and warehousing overlap, in that the matters involve relationships with customers, suppliers, or other outside organizations.

Authors have examined the antecedents to safety performance in the motor carrier (Bruning, 1989; Corsi et al., 1984; Corsi & Fanara, 1988) and airline (Weener & Wheeler, 1992) industries. These precursors include driver age and experience, equipment age and maintenance in the case of motor carriers, and better warning equipment and training for airline personnel. Other safety issues relating to transportation management include the impact of government regulation on safety in the railroad

industries (Crum et al., 1995), alcohol and drug testing policies for transportation employees (Henriksson, 1992), and the relationship between profitability and safety in motor carrier (Bruning, 1989; Chow et al., 1987) and airline (Golbe, 1986) transportation. Issues relating to the safe operation of warehouses have primarily been discussed in the trade literature, and include topics such as introducing automated wheel engagement systems to ensure safe docking of trucks (Anonymous, 1998), training employees in the safe operation of forklifts (Swartz, 1998), and improving warehouse ergonomics (Randall, 1998).

Diversity issues in logistics have involved increasing the diversity of logistics professionals and management teams (Lynagh et al., 1996; Andre, 1995), promoting minority motor carriers (Corsi et al., 1982), and purchasing from minority business enterprises (Carter et al., 1999; Dollinger et al., 1991). Academic logistics literature in the areas of human rights and philanthropy has been rare, with only scant focus on subjects such as human rights issues at suppliers' plants (Emmelhainz, 1999).

These logistics activities appear to fall under similar categories or dimensions as those of CSR - namely ethics, the environment, diversity, human rights, and safety. Unlike CSR, however, these subjects continue to be studied and discussed under separate rubrics that often do not recognize the commonalities that exist among the topic areas. In the next section of the report, we describe how depth interviews were conducted with logistics managers in the areas of purchasing, transportation, and warehousing, with the goal of determining the specific activities comprising LSR. The data collected from these interviews were then subjected to rigorous, qualitative analysis, described earlier in the Design of the Study section of this report. We present the results from our qualitative analysis as both a series of theoretical propositions grounded in the data and as a framework which can be used for further empirical research in the area of LSR.

Research Question 1: What Are the Specific Activities that Comprise Logistics Social Responsibility (LSR)?

The activities of the purchasing, transportation, and warehousing managers fell into several broad categories that include the environment, ethics, diversity, working conditions and human rights, safety, and philanthropy and community involvement. Next, we discuss these activities from the perspectives of each set of managers.

Table 1
Purchasing's 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 non-hazardous alternatives
- Ensuring proper labeling, documentation, & packaging of H/M
- Reducing packaging material

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 suppliers 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 gifts received from suppliers

Purchasing Management

The socially responsible activities that emerged from the interviews with purchasing managers fell into six broad categories, which are listed in Table 1. The reader should note that the applicability of some of these categories will likely vary based on the industry and specific circumstances of an individual firm. For example, human rights issues such as ensuring that suppliers do not use child labor are generally more applicable to firms involved in international sourcing, while environmental issues such as identifying and sourcing non-hazardous alternatives for purchased parts and materials are more applicable to firms that purchase a large amount of such hazardous materials.

Still, the majority of categories, as well as the specific applications listed within them, are applicable to a wide array of firms and industries.

The environmental activities include those conducted primarily within the purchasing function, such as purchasing recyclable and reusable packaging and reducing the amount of packaging material purchased, as well as undertakings conducted with other functions within the firm and with suppliers. These additional activities include working with suppliers to ensure that their processes and products are environmentally sound, conducting life cycle analyses, and designing products for reuse and recycling.

A number of unethical activities were listed by purchasing managers. These are obviously not socially responsible, but rather socially *irresponsible* acts, where the expectation would be that purchasing managers would avoid such activities. An earlier study suggests that these activities fall into two broad sub-categories: (1) *deceitful practices*, which entail lying or misleading a supplier representative, and (2) *subtle practices*, which entail unethical but somewhat less obvious actions such as exaggerating the seriousness of a problem to gain concessions from a supplier and sharing information about suppliers with their competitors (Carter, 2000a).

Philanthropy and community activities can include helping to develop local suppliers and auctioning or donating gifts from foreign suppliers. Diversity issues primarily surround programs designed to encourage sourcing from minority- and/or women-owned suppliers, while human rights issues center around ensuring that suppliers maintain fair and humane working conditions and pay a reasonable wage to their workers. A related issue is ensuring safe working conditions at suppliers' facilities. Safety issues can also encompass the incoming movement of purchased material, as noted by one purchasing manager: "Well, we have opportunities to interface with our plants. For example, we don't want to bring items into our plant in a less-safe delivery system, so we might go with slip-sheets instead."

Transportation Management

Table 2 summarizes the activities mentioned by transportation managers as being socially responsible. Again, a very similar set of activities emerged, with Quality of Life for Drivers being reasonably commensurate with the Human Rights issues highlighted in Table 1. Here issues include the relatively low hourly wages and the long periods of time in which drivers may be required to be away from home. Transportation managers can contribute to environmental initiatives by ensuring that vehicles are properly maintained in order to maximize fuel efficiency and minimize leaks; properly transporting hazardous materials; and participating in the reverse, upstream movement of product for the purposes of reuse and recycling. Ethical issues center on avoiding the receipt of or offering of bribes, while diversity issues include selecting minority-owned carriers and staffing issues in what has traditionally been a functional area dominated by white males.

Warehouse Management

Table 3 displays the five broad categories of LSR that were identified by the warehouse managers who participated in the study. The general content of these categories is similar to those identified by purchasing and transportation managers. However, the specific activities encompassing Diversity and Quality of Life are somewhat generic in that they could apply to most functional areas within an orga-

nization. Interestingly, additional interviews conducted with warehouse managers did not reveal any other activities encompassed under the LSR umbrella. Further, ethical activities were not mentioned in the interviews with warehouse managers. While most warehouse managers believe that some overlap exists between the terms "ethics" and "LSR," none mentioned specific warehousing activities relating to ethics.

A Framework of LSR

Our interview findings suggest that a general framework of LSR can indeed be developed, in which a higher-order concept of LSR encompasses a number of areas of logistics management that have, up until now, been researched in a stand-alone fashion. Figure 1 highlights this framework. Next, we discuss the influencing factors of LSR displayed in Figure 1 and the outcomes that occur when managers undertake LSR activities.

The remainder of this section's research questions focus on antecedents and outcomes of LSR. Next, we discuss these factors in more detail, and develop a set of propositions concerning their relationship to LSR.

Research Question 2: What Are the Antecedents to LSR? - Drivers

Culture was listed as a driver of LSR by 19 of the 26 informants. Of the remaining seven informants, five mentioned individual values as being a driver while the other two informants each listed government regulations and liability as drivers. For our project, "culture" refers to an organizational culture or values that embrace and support socially responsible activities - being a good corporate citizen. Our findings suggest that such an organizational culture is a dominant driver of LSR.

Interestingly, in the absence of such an organizational culture, LSR can still exist when managers have personal values and morals which are aligned with the activity and believe that the activity is "the right thing to do." As was stated by one purchasing manager:

"I just wanted to start it (a minority supplier program) because I felt a personal responsibility. It was just the right thing to do."

While a transportation manager described his feelings toward the safe operation of his fleet as follows:

"My social responsibility here goes way beyond anything that is mandated by the government and has nothing to do with [my company]. It's what allows me to go home and sleep at night."

Table 2
Transportation's Involvement in LSR

Environment

- Transportation of H/M: Complying with regulations including labeling and placarding
- Clean Vehicles/Fuel Efficiency: Ensuring that trucks do not leak fluids, i.e., oil, etc.
- Modal Choice (rail versus truck in terms of impact on environment)
- Reverse logistics
- Reconditioning and reuse of pallets

Ethics Avoiding the following ...

- Bribes and kickbacks associated with carrier selection
- Mafia involvement
- Bribes offered to port officials to expedite shipments

Diversity

- Use of minority carriers
- Hiring and promoting equally within a traditionally white-male dominated industry

Quality of Life for Drivers

- Operating schedules that allow drivers adequate time at home
- Paying adequate wages

Safety

- Abiding by hours of service requirements
- Ensuring vehicles are adequately maintained
- Avoiding contamination/spoilage of food, including making sure that trailers and tankers are properly cleaned/purged
- Proper securement of load (not dumping product on roads)
- Ensuring the safety of for-hire carriers: accident records, operating ratios, insurance, training. Including Safety as a selection criteria of for-hire carriers.
- Driver certification and training
- Drug and alcohol testing
- Performing internal safety audits
- Overweight vehicles

Philanthropy/Community

- Hours of operation/Minimizing traffic/Avoiding neighborhoods, noise Pollution
- Stopping to help stranded motorists ("White Nights")
- Education: Bringing trucks to schools
- Professional affiliations such as CLM

Finally, LSR can occur at a base level, even in the absence of a supportive organizational culture or individual values, when government regulations require the activity and/or firms are threatened by liability issues. Researchers have suggested that powerful members within an organization, including its founders (Boeker, 1989), can have a significant influence on organizational culture. Similarly, in seven of the cases, we found that participants who listed culture as a driver of LSR also discussed top management support and commitment as drivers of LSR. Further, in each case where top management was listed as a driver, organizational culture was also mentioned. Participants suggested that top management support helped to define

and shape a culture that supports LSR, as evidenced by the following statements about drivers of LSR:

"I would say the corporate culture, driven by our senior management."

"So from the top, from Mr. Smith (fictitious name) all the way down, that's built into the culture."

"I mean, all the way, our CEO, every meeting he opens, safety is number one."

Table 3
Warehousing's Involvement in LSR

Environment

- Proper storage, packaging, and labeling of H/M
- Reverse logistics
- Finding revenue-generating uses for obsolete inventory in warehouse

Diversity

- Hiring and promotion

Quality of Life

- Family issues: Providing or helping employees find child care, etc.

Safety

- Training and certification of use of equipment, including forklifts and other materials handling equipment.
- Safety procedures/equipment, such as requiring and making sure employees use hardhats, gloves, safety goggles, hard-toed shoes, etc.

Philanthropy/Community

- Donation of excess or obsolete inventory to charity

Based on these findings, we introduce the following propositions:

Proposition 1: An organizational culture that embodies socially responsible values and beliefs among employees is positively related to LSR.

Proposition 2: Organizations in which top management actively espouses and supports social responsibility are positively associated with an organizational culture that embodies socially responsible values and beliefs.

Proposition 3: In the absence of an organizational culture that supports LSR, socially responsible logistics management can still exist if (a) a manager has an individual value system that is congruent with LSR and/or (b) the threat of external punishment exists, such as regulation or liability.

A final driver listed by interviewees is socially responsible marketing and public relations. We discuss this driver in the Consequences section of the report, in the context of its effect on stakeholder relationships.

Research Question 2: What are the Antecedents to LSR – Barriers and Ways Overcome

The most common barrier mentioned by informants was difficulty in coordinating activities and objectives of internal functions or members of the supply chain. This barrier was overcome by improving communication, developing

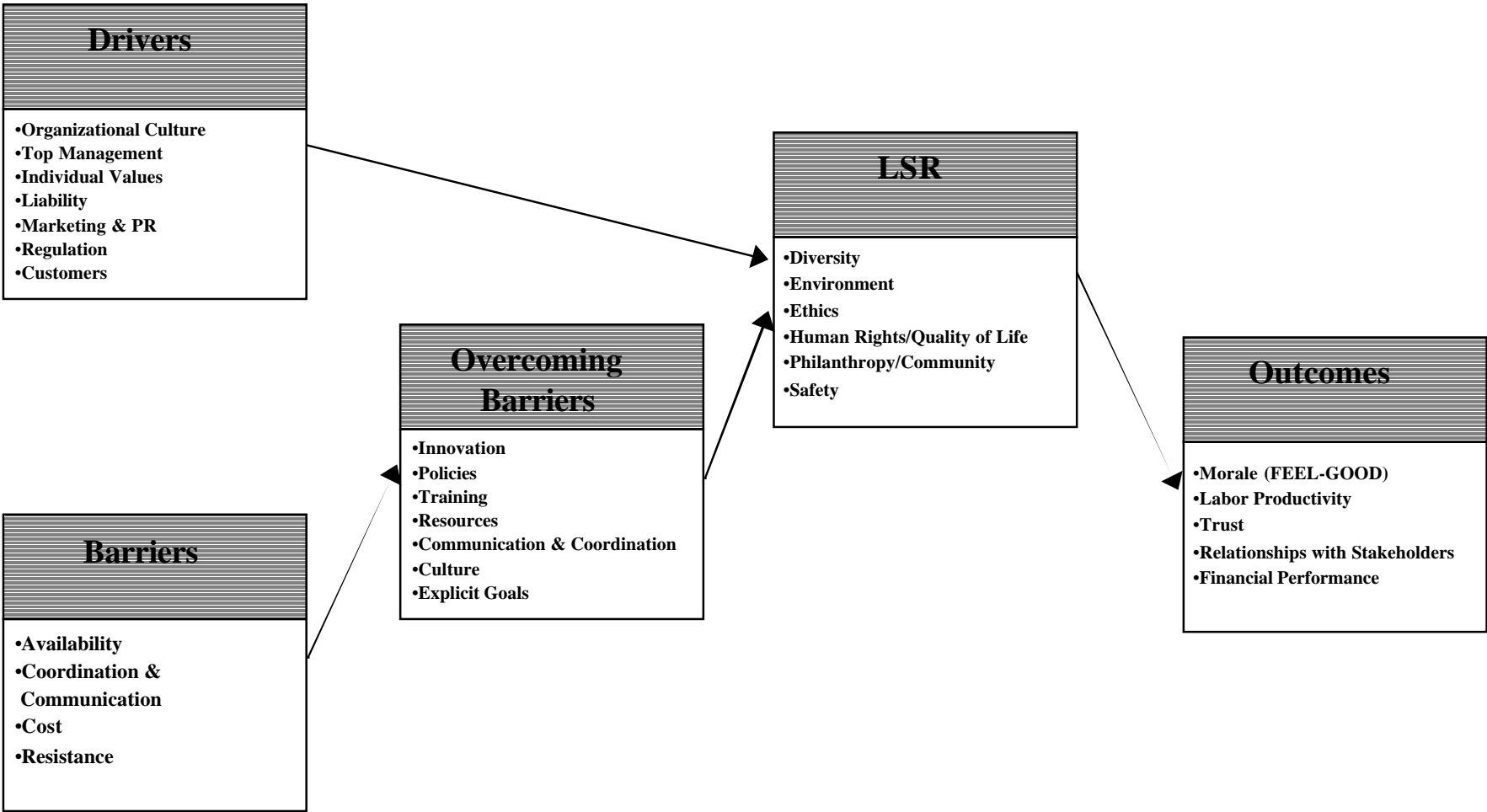
explicit policies such as a code of ethics or ISO 14,000 certification, and increasing the amount of formal coordination across functions or organizations in the supply chain. For example, a warehousing executive describes coordination problems when disposing of damaged products as follows:

“The only barrier that we had here is that we needed to convince our sales and marketing people that we were not going to hurt the sale of our product in our normal channels. So I had to sit down with them and explain that this product was just going to end up in the dumpster; that we were going to give it to a charity that was doing some good in the community and that we were not going to take sales away from our regular distribution channels.”

In the case of another firm, the reporting structure of the transportation and safety departments was changed to facilitate coordination:

“One problem with most private carriers is that their safety departments are responsible for plant safety, OSHA, and DOT safety, but they don't have any direct line of authority with the people that operate the trucks. And that is a real failure in the system. Here in our department we have the authority with safety, operations, and maintenance. That's one of the keys to making it work. There's not somebody who comes around and tells you to do better and then when they go

Figure 1
A Framework of Logistics Social Responsibility (LSR)



away you just go back to doing it the way you were because you know that there's not going to be anyone to follow up."

As a final example the purchasing function at one chemical concern had difficulty coordinating with small and one-time suppliers to ensure proper labeling of inbound hazardous materials. As described by the firm's purchasing manager, this barrier was overcome through the development of specific ISO procedures:

"It was hard making sure small or occasional suppliers were properly marking their products, but again that gets to ISO, where if we have to bring it in without a label, there's what we call a non-conforming area at each of the locations where something is put until it's checked out properly."

Our findings suggest that while coordination is a common barrier to LSR, firms can overcome this barrier by increasing communication and developing specific, explicit policies. Examples here include distributing brochures to employees and suppliers, implementing standards such as ISO 14,000 (Montabon et al., 2000; Tibor & Feldman, 1996), and requiring employees to annually read and sign policy statements dealing with LSR issues. This leads to the following proposition:

Proposition 4: When implementing LSR, difficulties in coordinating departments within firms and across organizations within a supply chain can be overcome by (a) increasing communication, including opening up channels of communication and changing formal reporting structures within an organization and (b) developing explicit policies.

Six informants listed resistance to implementation of LSR activities, either by employees or supply chain members such as suppliers or direct customers, as a barrier. In these cases, this barrier was overcome through the use of one or both of the following tactics: (1) training, via either formal or informal instruction, and (2) improving communication, including more clearly explaining the reasons for implementing the specific LSR activity, and soliciting employee's opinions regarding the LSR.

Poor communication within functions, between functions, and between organizations can also act as a barrier to LSR. While most of the respondents who encountered this barrier were different from those who encountered resistance, the same tactics (opening up communication lines) were used to overcome the communications barrier. Together, these findings result in the following propositions:

Proposition 5a: Resistance to LSR can be overcome through educational mechanisms including training and two-way communication.

Proposition 5b: Poor communications within and across firms can be overcome through educational mechanisms including two-way communication.

In four cases organizational culture was listed as a barrier by informants. In each case, however, the personal values or morals of the logistics managers were also listed as a driver, where managers stated that engaging in the LSR was simply "the right thing to do." One purchasing manager stated:

"It all seems quite positive on paper. In reality, however, our culture works against the [minority supplier] program. Whatever I have done has been purely on my own because I thought it was the right thing to do."

Thus the following proposition:

Proposition 6: When an organizational culture acts as a barrier to social responsibility, the commitment of an individual whose personal beliefs support the LSR activity appears to be necessary for the LSR activity to occur.

In cases where technology acts as a barrier, informant firms chose to allocate resources to overcome this barrier, as described above. The allocation of resources could also include the use of innovation such as developing the necessary technology. Thus while technology can act as a barrier to LSR:

Proposition 7: The technology barrier can be overcome through the allocation of resources.

Three informants stated that the lack of availability of a product or service had acted as a barrier to initiating LSR. In all three cases resources were allocated to create or expand the necessary sources of supply. These resources could be used to develop a first-tiered supplier, as well as a new organization that contributes to the reverse movement of materials in the supply chain. For example, paperboard recycling facilities were built by one firm to ensure the availability of recycled packaging for their products. The evidence relating to the obstacle of resource availability leads to the following proposition:

Proposition 8: Firms that have difficulty finding sources of supply for LSR can overcome this barrier through supplier development activities that include providing expertise or low interest rate start-up capital, or even creating new subsidiaries.

The propositions in this section of the report deal not only with barriers encountered by organizations that have initiated LSR, but also the tactics employed to overcome these barriers. The propositions suggest that these barriers are not insurmountable. In fact, most informants encountered some barriers when implementing LSR. Instead the propositions suggest that most barriers can be overcome, and they provide managerial prescriptions of how to do so.

Research Question 3: What Are the Consequences of LSR?

One of the more common outcomes of LSR that was mentioned by informants was employees feeling good about their jobs and the company they work for, a condition that we labeled "FEEL-GOOD." An additional outcome is increased labor productivity. While 'FEEL-GOOD' does not always result in increased labor productivity, the converse appears to hold: increased labor productivity is always accompanied by FEEL-GOOD. Thus the following propositions:

Proposition 9: LSR results in employees feeling good about their jobs and the company they work for.

Proposition 10: In cases where increased labor productivity results from LSR, improved employee morale also occurs.

The establishment of trust with either customers or suppliers is another outcome of LSR. In turn, this trust was found to be accompanied by improved relationships with the external stakeholder and/or improved supplier performance. This is perhaps best exemplified by the following comment by a purchasing manager regarding outcomes of ethical behavior with suppliers:

"Trust. You get into supply chain management and getting into, you know, sometimes single-sourcing with our suppliers. Knowing that we can count on them and they can count on us and having long-term, truthful contracts with suppliers. And you know, they see the benefit, we see the benefit, and then ultimately our customers should see the benefit."

Thus the following propositions:

Proposition 11a: LSR results in increased levels of trust with other members of the supply chain.

Proposition 11b: Increased levels of trust with other members of the supply chain in turn results in improved relationships with these external stakeholders.

One possible motive for engaging in LSR, which was discussed briefly along with other drivers in the previous section, is socially responsible marketing. Socially responsible marketing, or "marketing with a social dimension" (Handelman & Arnold, 1999) encompasses product labeling, product characteristics, and advertising campaigns, and can be driven by both a desire to improve public relations as well as more traditional economic criteria. No real pattern was found between this socially responsible marketing driver and other drivers listed by informants. However, each interview participant who listed socially responsible marketing as a driver also discussed improved relationships with an external stakeholder, including suppliers, customers, the community, and charitable organizations.

Customers' perceptions of a firm's reputation can act as a strategic asset and a source of competitive advantage (Aaker, 1996; Ghemawat, 1986; Weigelt & Camerer, 1988). Further, marketing managers spend considerable sums of money on advertising and corporate donations with the goal of influencing consumer perceptions of their firms (Schumann et al., 1991).

Consumers who hold positive perceptions about a firm also tend to have higher evaluations of that firm's products (Brown & Dacin, 1997), suggesting that socially responsible actions by corporations have a positive impact on customers' perceptions of the corporations' products. Our findings complement and extend those of Brown and Dacin, by suggesting that LSR can not only positively influence relationships with customers but also relationships with suppliers and even stakeholders outside of the supply chain. Thus the following proposition:

Proposition 12: Firms that undertake LSR with the goal of socially responsible marketing are more likely to experience improved relationships with external stakeholders.

Several informants specifically mentioned reduced costs as an outcome of LSR. In only two cases did informants state that costs had increased. Both of these latter cases involved purchasing managers who were describing environmental activities. However, these same purchasing managers mentioned the establishment of a safer, cleaner, or healthier environment for employees or external stakeholders, and improved relationships with customer and community stakeholders as additional consequences of LSR. These findings suggest that the increased costs may have been more than compensated for through more efficient relationships with other organizations in the supply chain.

The qualitative data suggest that managers cannot blindly pursue LSR objectives such as sourcing from MBE

suppliers at the expense of higher costs or lower levels of quality. However, well-planned LSR initiatives, which simultaneously take into account the goals of social responsibility and firm performance, lead to increased performance. These findings suggest the study's final proposition:

Proposition 13: LSR, when properly implemented, results in improved financial performance.

In the next section of our report, we empirically test some of the above propositions, using the responses of purchasing managers to a large-scale mail survey.

Purchasing's Contribution to the Socially Responsible Management of the Supply Chain

Introduction

To empirically investigate the research questions associated with LSR, we narrow our focus by examining the role of purchasing within the LSR framework introduced in Figure 1 in the prior section. We label the involvement of the purchasing function in the socially responsible management of the supply chain *purchasing social responsibility* (PSR). Purchasing plays a key role in a firm's logistics operations (Bowersox et al., 1992; Cavinato, 1992; Coyle et al., 1996; Lambert & Stock, 1993). Further, the purchasing function sits at an organization's boundary and acts as one of the key interfaces between a firm's internal logistics system and the upstream supply chain (Webster, 1992; Williams et al., 1994).

We next introduce hypotheses regarding PSR. These hypotheses are presented in the order of the study's research questions.

Hypotheses

Research Question 1: What are the Dimensions of Purchasing Social Responsibility (PSR)?

The results from our literature review and our in-depth interviews with purchasing managers reveal that PSR consists of activities relating to the environment, diversity, human rights, safety, and philanthropy. We thus introduce the following hypotheses:

H1a: Issues relating to the environment constitute a dimension of PSR.

H1b: Issues relating to diversity constitute a dimension of PSR.

H1c: Issues relating to human rights constitute a dimension of PSR.

H1d: Issues relating to philanthropy constitute a dimension of PSR.

H1e: Issues relating to safety constitute a dimension of PSR.

Carol (1979, 1991) suggests that social responsibility consists of four components, including ethical responsibilities. An overlapping taxonomy developed by Sethi (1975) proposes that a firm's social obligations also encompass ethical responsibilities. Alternatively, Jennings and Entine (1999, p. 9) state that, "Business and business ethics are much more complex than the breeziness of social responsibility," and ethics is a construct which is distinct from corporate social responsibility. Similarly, the results from our depth interviews are mixed, with some managers categorizing ethics as being subsumed by LSR and others viewing ethics as a distinct construct. We thus introduce the following hypothesis and alternative hypothesis:

H1f: Ethics constitutes a dimension of PSR.

H1f^{Alternative}: Ethics does not constitute a dimension of PSR.

We next consider the precursors to PSR, through the development of hypotheses based on a combination of our qualitative findings and extant literature from the areas of organization behavior and supply chain management.

Research Question 2: What Are the Antecedents to PSR? - Drivers

Several of the drivers identified through the course of the in-depth interviews were operationalized in the mail survey. We discuss how these drivers might impact PSR in

this section of the report, and present several hypotheses based on this discussion.

Organizational culture can be defined as a set of values, beliefs, assumptions, and ways of thinking which are shared by organizational members and taught to new members of an organization (Barney, 1986; Chapman & Jehn, 1994; Smircich, 1983; Weiner, 1988). This definition suggests that organizational culture influences work behavior, and studies have shown that organizational culture is associated with employee behavior (Sheridan, 1992).

Chapman and Jehn (1994) developed a multi-item scale to measure organizational culture, and found that organizational culture consists of multiple dimensions, including *innovation, stability, and people orientation*. People orientation includes items relating to being people oriented, fair, and supportive, and it is this dimension of organizational culture that we use in our theoretical framework and operationalization of the construct.

One stream of research has examined the relationship between corporate culture and success and performance. This research suggests that culture can contribute to organizational success if the culture allows the organization to appropriately adapt to its external environment or has characteristics which are rare and difficult to imitate (Barney, 1986; Denison, 1990; Denison & Mishra, 1995; Kotter & Heskett, 1992; O'Reilly, 1989). Similarly, it can be posited that a corporate culture that strongly espouses values such as fairness and the desire to be a good corporate citizen will be positively related to PSR activities. This leads to the following hypothesis:

H2: A people oriented organizational culture is positively related to PSR.

Top management can be a key driver to an organization's programs and initiatives (Mintzberg, 1973). Examples set by top company management have the potential to impact an employee's actions in ethically grey areas (Chonko & Hunt, 1985; Chonko et al., 1996; Victor & Cullen, 1988; Donaldson, 1996; Dubinski & Gwin, 1981; Hunt et al., 1984; Turner, 1994) and can likely also play an important role in providing leadership and examples of socially responsible behavior. By leading through their individual actions and providing appropriate guidance, an organization's CEO and other top managers can demonstrate this commitment to socially responsible values. Thus the following hypothesis:

H3: Top management leadership is positively related to PSR.

Some argue that corporate culture is determined historically and not easily changed (Hofstede et al., 1990;

Kabanoff & Holt, 1996), suggesting that top management has little influence on organizational culture. Others suggest that corporate cultures can be changed to emulate the cultures of more successful organizations (Quinn, 1980) and advocate that it is the responsibility of top management, through their actions, to create and maintain a culture that supports socially responsible behavior (Murphy & Enderle, 1995). Top management may also be able to influence employee actions through their own actions and behaviors, or in other words, "lead by example" (Peters & Waterman, 1982; Stead et al., 1990). For example, Denny's restaurants and Texaco were facing litigation and public backlash from the public release of information regarding racism in everything from the treatment of employees to customer access. In both cases the public relations issues, boycotts, and impact on earnings were ended when the CEOs of the companies took a hands-on approach to the issue. Beyond settling the legal cases, the CEOs undertook everything from minority business programs to scholarship programs for minorities. The result has been company-wide transformation of attitudes and conduct as well as an improved public image. Here we take the view of Quinn and Murphy & Enderle, and propose that top management's actions can not only directly influence PSR, but can also indirectly influence PSR through their effect on corporate culture.

In the area of business ethics, organizations can help employees to identify unacceptable behavior through the development and dissemination of a code of ethics (Brenner & Molander, 1977, Donaldson, 1996, Dubinsky & Gwin, 1981, Forker & Janson, 1990, Guertler, 1968, Laczniak et al., 1995, Wood, 1995). Similarly, the presence of written corporate or departmental policies regarding social responsibility will likely help to set goals (Locke et al., 1981), make explicit the directions and views of top management, and lead to increased levels of PSR. However, even explicit organizational policies are likely ineffective if top management does not support and act in accordance with the precepts of those policies (Morgan, 1993). These assertions lead to the following hypotheses:

H4a: Top management leadership is positively related to organizational culture.

H4b: Top management leadership is positively related to organizational policies.

H5: Organizational policies are positively related to PSR.

Employees themselves can likely play a key role in initiating PSR. Through her case study analysis, Drumwright (1994) found that the primary initial driver of environmental purchasing came from workers who were personally committed to environmental values. Carter et al. (1998) lend empirical support to Drumwright's findings

by demonstrating a significant relationship between middle management initiatives and environmental purchasing. Further, it is likely that employee initiatives are also a key driver of the broader PSR construct. As one purchasing manager stated so succinctly regarding the establishment of a minority business enterprise (MBE) sourcing program, "Whatever I have done has been purely on my own."

Personal values of employees have been espoused as one potential precursor to ethical behavior in organizations (Weber, 1993). In a similar fashion, the individual values of purchasing employees are one likely facilitator of PSR and a possible cause of employees taking individual initiatives to institute PSR activities and programs. For example, another purchasing manager made the following comment regarding the implementation of an MBE purchasing program:

"I just wanted to start it because I felt a personal responsibility. It was just the right thing to do."

Based on our discussion, we introduce the following hypotheses:

- H6:** Employee initiatives are positively related to PSR.
- H7a:** Individual values of purchasing employees are positively related to PSR.
- H7b:** Individual values of purchasing employees lead to employee initiatives.

Organizations are required to comply with government regulation including legislation in the areas of safety, the environment, and diversity. Interestingly, the literature has been mixed as to whether government regulation is a significant driver to individual dimensions of PSR. Marcil (1992) argues that environmental regulation creates operating barriers and increases costs for businesses, while Porter (1991) proposes that environmental regulation and subsequent actions by firms can lead to competitive advantage. The findings from empirical investigations have also been mixed. Carter and Carter (1998) found that government regulation is not a significant driver to environmental purchasing and Dean and Brown (1995) find that environmental regulation can actually act as a barrier to entry. Conversely, case study findings from Handfield et al. (1997) suggest that regulation has a meaningful, positive effect on a firm's environmental initiatives. In the area of diversity, Carter et al. (1999) found that government regulation was not significantly related to the level of procurement from MBE suppliers. Based on the mixed assertions and findings in the extant literature, we propose the following hypothesis and alternative hypothesis:

- H8:** Government regulation is positively related to PSR.
- H8^{Alternative}:** Government regulation has no relationship to PSR.

Researchers in the areas of innovation management and new product development have suggested that customer demands can be a significant driver of organizational innovation (Quinn, 1985; von Hippel, 1982). Increasingly, customers are concerned about the safety, environmental impact, and origin of products (Brown & Dacin, 1997; Handelman & Arnold, 1999). On the environmental front, customers might demand products made from recyclable materials or products that are themselves more easily reused or recycled (Carter & Carter, 1998). Similarly, consumers are shunning products that contain materials manufactured under sweatshop labor conditions (Emmelhainz & Adams, 1999). This leads to the next hypothesis:

- H9:** Customer pressures for socially responsible products are positively related to PSR.

The relationships suggested by hypotheses two through nine are presented in Figure 2. Note that an additional variable, size, is also included as an antecedent in the Figure. Murphy et al. (1992) found that organizational size was a significant predictor of ethical behavior in the motor carrier industry. Similarly, it is possible that organizational size may explain some of the variance in a firm's socially responsible initiatives. For this reason, we include firm size, as measured by annual revenues, as a control variable.

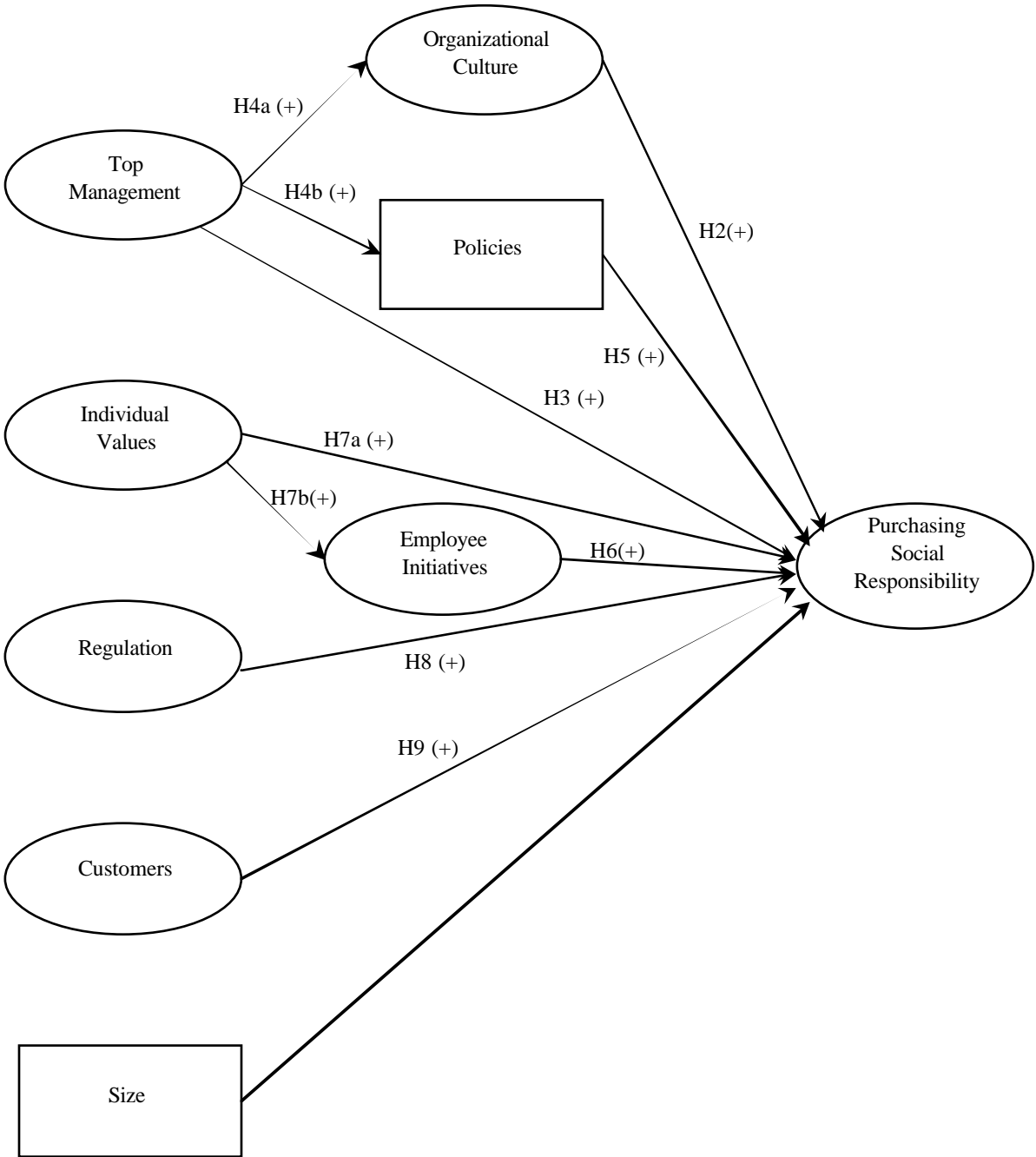
Research Question 3: What Are the Consequences of PSR?

Commitment and Trust

Morgan and Hunt (1994, p. 22) suggest that commitment and trust can act as key mediating variables in successful relational exchanges by encouraging marketing managers to (1) work at preserving relationship investments by cooperating with exchange partners, (2) resist attractive short-term alternatives in favor of the expected long-term benefits of staying with existing partners, and (3) view potentially high-risk actions as being prudent because of the belief that their partners will not act opportunistically.

Commitment in interfirm relationships has been defined as "an enduring desire to maintain a valued relationship," (Moorman et al., 1992, p. 316). Here, we define buyer commitment similarly as the strong desire of the purchasing organization to maintain a long-term relationship with suppliers. This definition is consistent with prior operationalizations of the commitment construct (Anderson & Weitz, 1992; Dwyer et al., 1987; Mohr et al., 1996;

Figure 2
Hypothesized Drivers of Purchasing Social Responsibility (PSR)



Moorman et al., 1992; Morgan & Hunt, 1994), the attitudinal definition of commitment presented by Gundlach et al. (1995), and the concept of commitment from earlier work in social exchange theory (Blau, 1964; Thibaut & Kelley, 1959).

The extant literature has defined trust in channel relationships as “a willingness to rely on an exchange partner in whom one has confidence,” (Moorman et al., 1993, p. 82) and as “the firm's belief that another company will perform actions that will result in positive outcomes for the firm as well as not take unexpected actions that result in negative outcomes,” (Anderson & Narus, 1990, p. 45). In a similar fashion, we define the buying organization's trust in suppliers as existing when the buying organization has confidence that suppliers are dependable and concerned about the welfare of the buying organization. This definition corresponds to prior operationalizations and definitions of trust found in channels research (Anderson & Narus, 1990; Joshi & Stump, 1999; Ganesan, 1994; Moorman et al., 1993; Morgan & Hunt, 1994; Siguaw et al., 1998).

Morgan and Hunt (1994) find that perceptions of opportunistic behavior in channel relationships lead to decreased trust. Williamson (1975; 1981, p. 554) defines opportunistic behavior as “self-interest seeking with guile.” Conversely, PSR includes activities that, while perhaps not being purely altruistic, often involve seeking the interests of multiple stakeholders and/or members of the supply chain. These activities potentially include consideration of the safety and rights of other stakeholders, philanthropic and environmental aspects, and the reverse coding of unethical behaviors.

Anderson and Weitz (1992) find that commitment to a relationship can result from the positive perceptions of a channel partner's fairness, where fairness exists when there is a lack of opportunism. Whereas firms engaging in opportunistic behavior might engender decreased commitment on behalf of another member of the supply chain (Heide & John, 1992), it is likely that manufacturing firms that engage in PSR are more willing themselves to commit to the relationship.

Finally, Morgan and Hunt (1994) find that opportunistic behavior also results in decreased relationship commitment through the mediating effect of trust, where a party in a dyadic exchange relationship becomes less committed to the relationship as it loses trust in the other party. Analogously, we posit that PSR will have a positive effect on trust, which will in turn have a positive impact on relationship commitment.

Based on our discussion, we introduce the following hypotheses:

H10: Involvement in PSR by a firm positively affects that firm's commitment to its suppliers for its socially responsible initiatives.

H11: Involvement in PSR by a firm positively affects that firm's trust in its suppliers for its socially responsible initiatives.

H12: A firm's trust in its suppliers for its socially responsible initiatives positively affects the firm's commitment to those suppliers.

Communication, defined as “an open sharing of information,” (Anderson & Weitz, 1992, p. 21) has been identified as a significant antecedent to trust in marketing channel relationships (Anderson & Narus, 1990; Anderson & Weitz, 1989; Morgan & Hunt, 1994). Communication can help to engender trust by “assisting in resolving disputes and aligning perceptions and expectations,” (Morgan & Hunt, 1994, p. 25). Our depth interviews in the area of LSR did not identify communication, per se, as either a precursor or consequence of LSR. However, a lack of communication was identified as a barrier to LSR. This barrier could occur internally when, for example, the marketing department of one firm resisted the charitable donation of damaged products, because they were unaware of how the products would be used and therefore concerned that the disposal process might hurt existing sales of undamaged products. In another firm, a lack of communication between purchasing and suppliers led to difficulties in ensuring the proper labeling of inbound hazardous materials. Similarly, based on the above work in channel management, we posit that a lack of communication regarding socially responsible procurement activities will *negatively* impact trust, leading to the following hypothesis:

H13: A lack of communication regarding PSR negatively affects the buying firm's trust in its suppliers for its socially responsible initiatives.

Cooperation and Supplier Performance

Cooperation exists when both parties in a dyadic exchange relationship work together to solve problems and achieve mutual goals (Anderson & Narus, 1990; Siguaw et al., 1998; Stern & Reve, 1980). Mohr et al. (1996, p. 105) define an overlapping construct, coordination, as “the extent to which different parties in the relationship work well together in accomplishing a collective set of tasks.”

Anderson and Narus (1990, p. 45) suggest that the establishment of trust will lead to increased coordination in a dynamic model, while tentatively concluding that cooperation is an antecedent to trust in a static model. Parkhe (1993) combines game theory and transaction cost

economics to show that in relationships involving repeated transactions, interfirm cooperation is contingent in part upon alliance members building trust. Given the precursors to trust in our model, we also advocate that as a buying firm's trust in its PSR suppliers increases, this should in turn lead to greater levels of cooperation between the buying firm and these suppliers. In addition, as the buying organization becomes more committed to its relationships with PSR suppliers and increasingly desires to maintain the relationships over longer periods of time, it is likely that the buying organization will be more willing to cooperate with suppliers in these exchange relationships. We thus introduce the following hypotheses:

H14: The buying firm's commitment to its suppliers for its socially responsible initiatives positively affects the degree of cooperation between the buying organization and those suppliers.

H15: The buying firm's trust in its suppliers for its socially responsible initiatives positively affects the degree of cooperation between the buying organization and those suppliers.

Siguaw et al. (1998) suggest that cooperation must be present to achieve relationship success, while Anderson and Narus (1990, p. 45) suggest that coordination in a marketing channel will in turn result in "outcomes that exceed what the firm would achieve if it acted solely in its own best interests." Similarly, Morgan and Hunt (1994) advocate that cooperation between dyadic channel members will lead to relationship marketing success by improving the competitive position of that supply chain vis-a-vis other networks. However, none of these authors empirically test the association between cooperation and relationship performance. We thus extend the empirical models of these authors to examine the effect of cooperation on relationship performance, as operationalized by the performance of the supplier in the dyadic relationship:

H16: Cooperation between a buyer and its PSR suppliers positively affects the performance of those suppliers.

Here, supplier performance is defined as the ability of PSR suppliers to provide products and services that result in improved competitive advantage for the buying firm, beyond simple purchase price. The construct is operationalized based on the supplier performance scale developed by Carter (2000a).

Literature in organizational behavior suggests that positive organizational citizenship conduct can result in success (Organ, 1988). Similarly, perhaps positive citizenship behavior such as PSR within a supply chain might result in success in terms of improved supplier performance. Literature in the area of CSR has long debated the

relationship between CSR and performance. Some authors argue that increased involvement by a firm in CSR requires that firm to incur additional costs and might limit the firm's strategic choices (Ullman, 1985; Vance, 1975). Others have found no relationship between CSR and financial performance (Abott & Monsen, 1979; Alexander & Buchholz, 1978), while a third group of researchers suggest that a positive relationship between CSR and performance exists due in part to improved stakeholder relationships (Cornell & Shapiro, 1987; Moskowitz, 1972; Parket & Eilbirt, 1975; Solomon & Hanson, 1985; Spicer, 1978; Sturdivant & Ginter, 1977). More recent work in the area of environmental purchasing found a positive relationship between firm performance and environmental purchasing (Carter et al., 2000). Here, we adopt the viewpoint that PSR will positively impact supplier relationships in general and supplier performance in particular. Thus the following hypothesis:

H17: PSR positively affects supplier performance. The relationships among the constructs in Hypotheses 10 through 17 are presented in Figure 3.

Next, we discuss the methodology used to test the study's hypotheses. Afterwards, we discuss the empirical results and consider their implications for supply chain managers. We conclude by discussing the study's limitations and proposing areas in need of future research.

Methodology

Respondent Characteristics

Respondents to the mail survey represent consumer products firms in SIC codes 20, 23, 28, 36, and 39. Figure 4 displays the percentage of responding firms from each of these SIC codes. Figure 5 displays the distribution of firm revenue across responding firms. Over 80 percent of the firms responding to the survey had revenues in excess of \$50 million, with 46 percent of the firms having revenues greater than \$500 million. These data suggest that respondents primarily represent medium- to large-size firms.

Finally, Figure 6 displays the proportion of respondents in positions with titles of Vice President, Director, or Manager/Supervisor. The majority of respondents are in managerial positions within their firms, with the additional 31 percent of respondents in positions with the title of Director or Vice President. Related to the key informant issue, which was discussed in the *Design of the Study* section of this report, is the possibility that executives may have different perceptions from respondents at the manager level within their organizations. In order to test whether this potential bias exists, we performed a multivariate T test using the key study variables. Executives did not answer these questions in a significantly different manner than did managers ($p=0.6204$).

Figure 3
Hypothesized Consequences of PSR

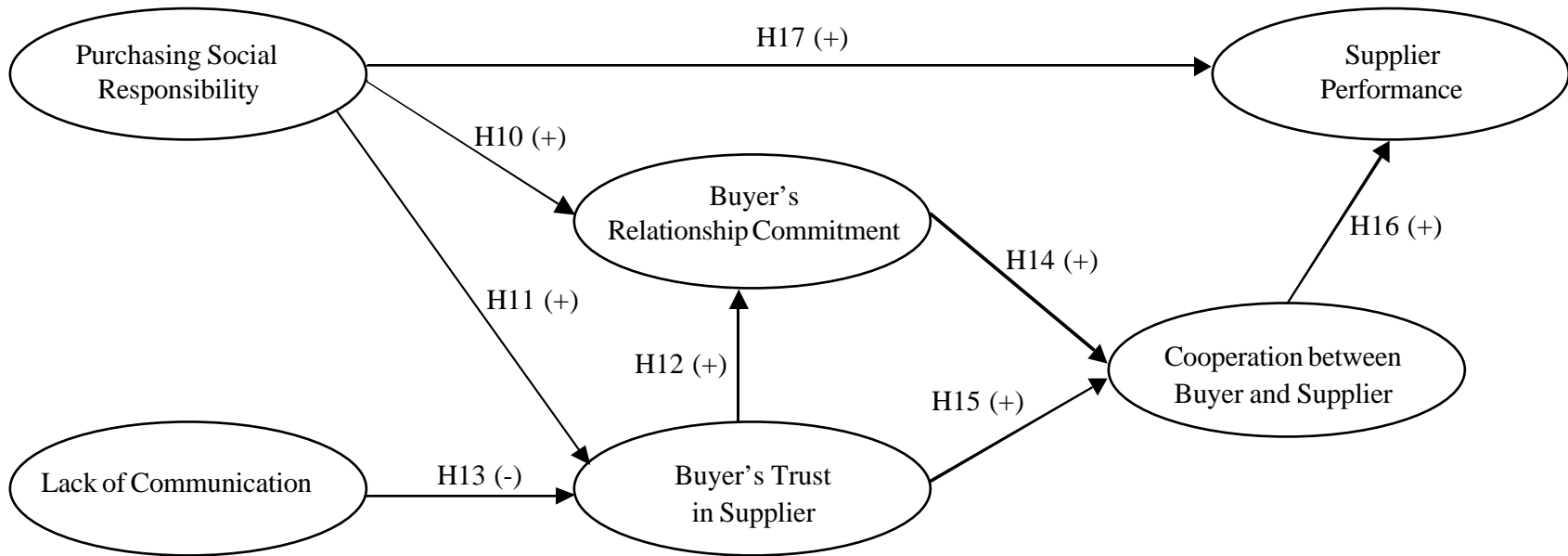
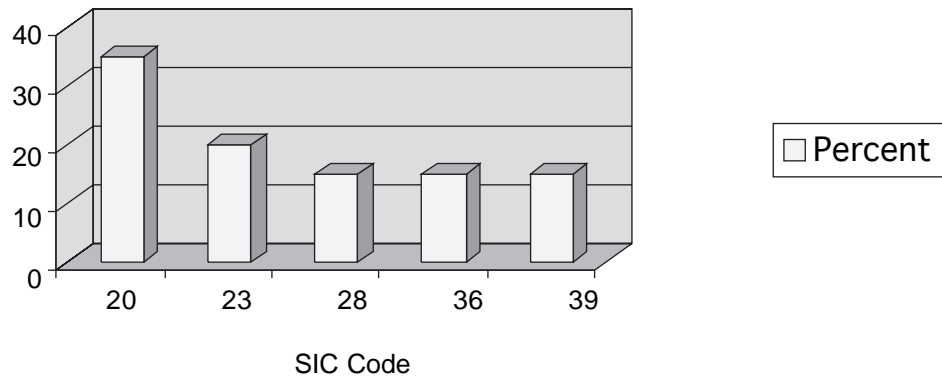


Figure 4
Respondents by SIC Code



Analyses and Results

In order to provide an empirical answer to Research Question 1, we conducted a second-order confirmatory factor analysis (CFA). Our statistical analyses of the models displayed in Figures 2 and 3 (Research Questions 2 and 3, respectively) were tested through the use of structural equation modeling. Here, we followed the two-step procedure recommended by Anderson and Gerbing (1988), where we first conducted CFAs for each of the models in order to demonstrate an appropriate fit between the measurement model and the data. A more in-depth discussion regarding the procedures used to develop the study's constructs, including assessments of reliability and validity, is provided in Appendix B. Next, we modified each of the measurement models so that they reflected the causal relationships displayed in Figures 2 and 3.

The results from the second-order CFA are presented in Figure 7. We used Bentler and Bonett's (1980) non-normed fit index (NNFI) and Bentler's (1989) comparative fit index (CFI) as overall goodness-of-fit indices. The value of the CFI in the model displayed in Figure 7 is 0.91 and the value of the NNFI is 0.90, suggesting a reasonably acceptable fit to the data (Bentler, 1989; Bentler & Bonett, 1980). The path loadings are above 0.40 and are significant for the environmental purchasing, diversity, human rights, philanthropy, and safety dimensions of PSR, suggesting that these areas are dimensions of the broader PSR construct. The path loadings are well below the 0.40 recommended minimum and are insignificant for both of the ethics dimensions, indicating that ethical issues are not a dimension of PSR.

We next ran the second-order CFA with the five significant dimensions of PSR but without the two ethics constructs displayed in Figure 7. Bentler's (1989) CFI and Bentler and Bonett's (1980) NNFI were 0.95 and 0.94, respectively, suggesting a better-fitting model. This was confirmed through a chi-square difference test, where the second-order CFA without the ethics dimension resulted in a significantly better fit ($\chi^2_{\text{difference}} = 183.63$, 93 df, $p < 0.0001$).

We next followed Anderson and Gerbing's (1988) two-stage procedure to assess the model displayed in Figure 2. The results from the measurement model suggest an appropriate fit between the data and the model, with the CFI and NNFI equal to 0.94 and 0.92 respectively. The measurement model was next modified to reflect the structural model posited by our hypotheses and displayed in Figure 2. The results from the full structural equation model are displayed in Figure 8. Again, our results indicate an appropriate fit between the model and the data. The CFI and NNFI are equal to 0.92 and 0.91, respectively.

The results from our hypothesis testing are also displayed in Figure 8, where solid lines represent significant relationships ($p < 0.05$) between constructs and dotted lines indicate the lack of a relationship. Hypotheses 2, 5, 6, and 9 were concluded, suggesting that organizational culture, managerial policies, employee initiatives, and customer pressures are also significantly and directly related to PSR. Hypotheses 3, 7a, and 8 were rejected, indicating that no significant, direct relationship exists between PSR and top

Figure 5
Annual Gross Sales in U.S. Dollars

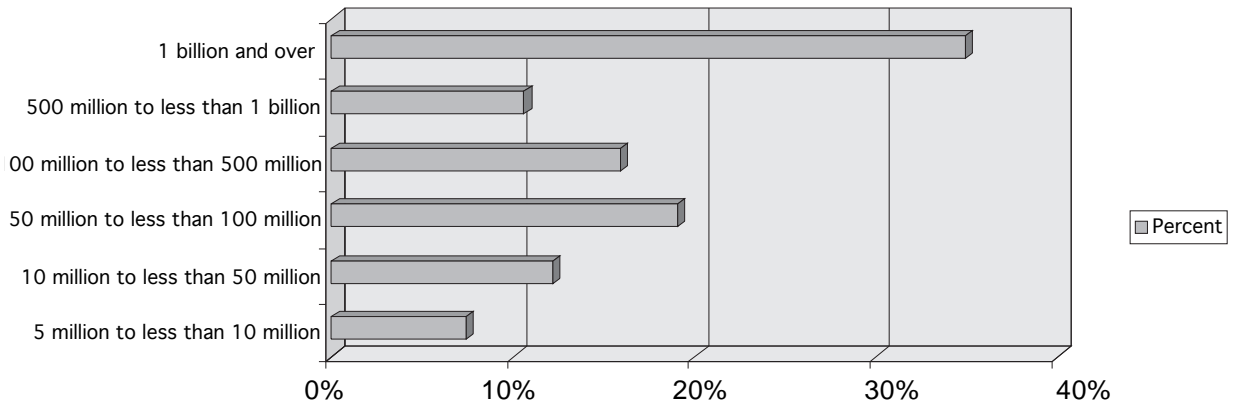


Figure 6
Respondent's Organizational Title

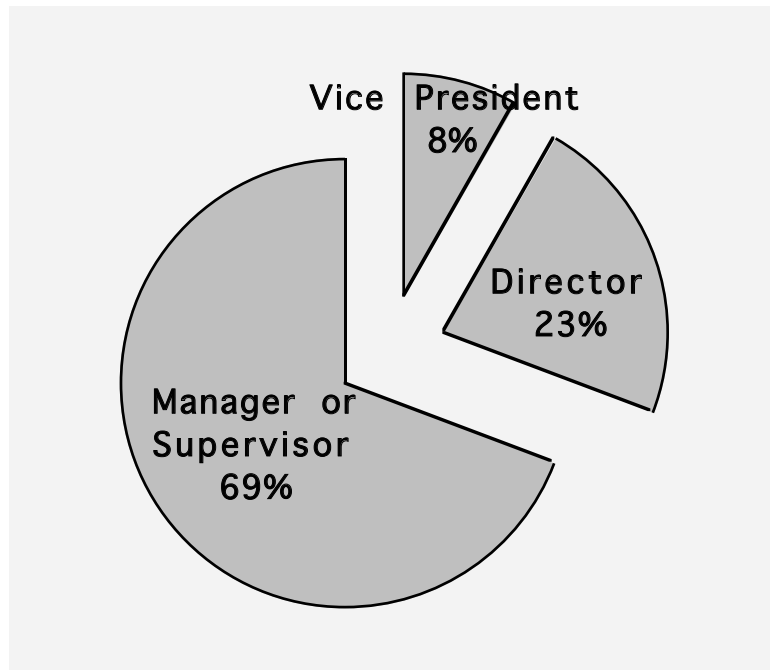
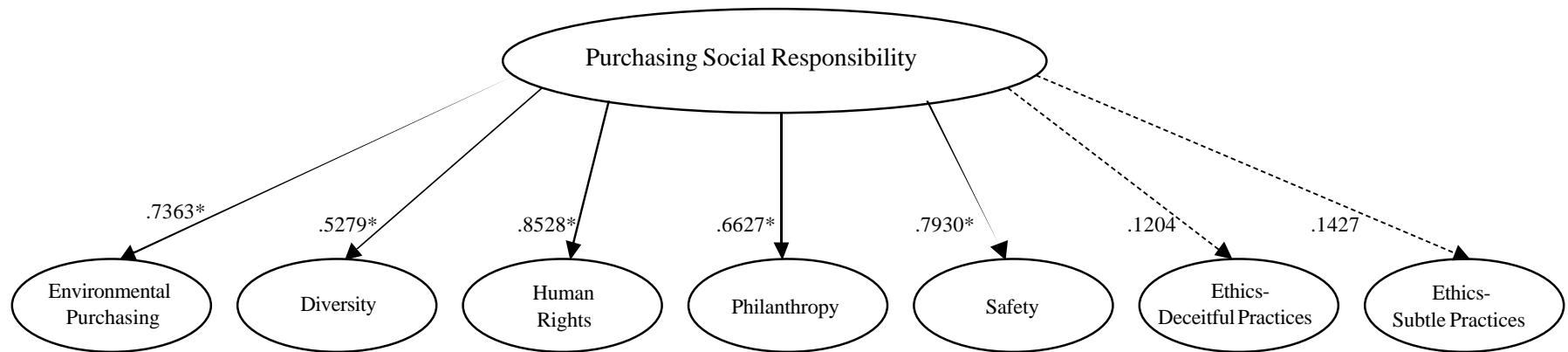


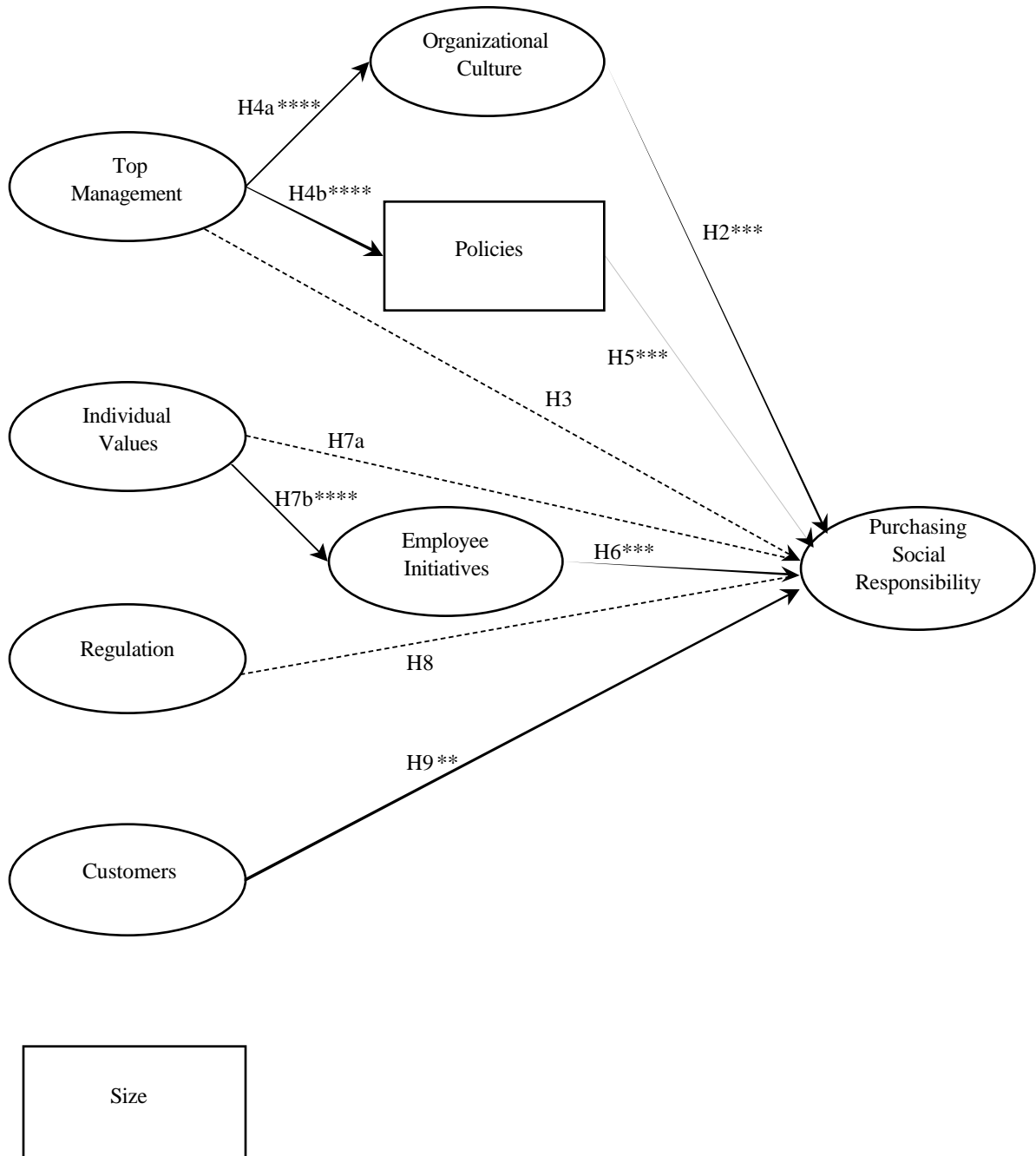
Figure 7
The Dimensions of PSR^a



^a Ovals represent latent constructs measured by multiple, manifest scale items. The Purchasing Social Responsibility construct is a second-order factor measured by each of the other latent constructs. Dashed lines represent insignificant factor loadings. The scale items comprising the Ethics-Deceitful Practices and Ethics-Subtle Practices constructs were reverse coded.

* p < 0.0001.

Figure 8
Drivers of PSR



Note: Ovals represent latent constructs measured by multiple indicators. Rectangles represent constructs measured by a single scale item. Size is included as a control variable. Dashed lines indicate no significant relationship.
 ** p<0.01, *** p<0.001, **** p<0.0001.

management support, individual values, and regulation. Finally, hypotheses 4a, 4b, and 7b were concluding, suggesting that top management support is significantly related to organizational culture and policies, and that individual values are significantly related to employee initiatives.

We also followed Anderson and Gerbing's (1988) two-stage procedure to answer the study's third research question and test the model displayed in Figure 3. For the measurement model, the CFI is equal to 0.95 and the NNFI is equal to 0.94, indicating an appropriate fit between the measurement model and the data. The results of testing the structural model, which are displayed in Figure 9, also indicate an acceptable fit between the model and the data. Here, the CFI and NNFI are also respectively equal to 0.95 and 0.94.

Again, solid lines are used to indicate significant relationships between constructs. Here, Hypotheses 10, 11, and 17 are concluded, indicating that significant positive relationships exist between PSR and the buying firm's commitment in the relationship, the buying firm's trust in its PSR suppliers, and supplier performance. A lack of communication is also significantly and negatively related to the buyer's trust in PSR suppliers (Hypothesis 13). In addition, significant positive relationships exist between the buyer's trust in PSR suppliers and (1) the buyer's commitment to those relationships (Hypothesis 12) and (2) cooperation that exists between the buyer and those suppliers (Hypothesis 15). Finally, a significant relationship exists between cooperation and supplier performance, leading us to conclude Hypothesis 16. A significant relationship does not exist between the buyer's commitment to its relationships with PSR suppliers and the amount of cooperation between the buyer and its PSR suppliers, leading us to reject Hypothesis 14.

Conclusions

Research Question 1: What Are the Dimensions of Purchasing Social Responsibility (PSR)?

The results suggest that those in purchasing management have made clear practical distinctions between their perceived ethical obligations and their obligations in the area of PSR. Their perspective, surprisingly well defined and refined, is one that attributes importance to ethical obligations, but one that also recognizes that ethical obligations are at a different level of moral development (Kohlberg, 1969) than the activities they define as included under PSR.

The results suggest that activities surrounding the areas of diversity, the environment, safety, human rights, and

philanthropy in purchasing management, which have been studied separately in the past, are in fact related and fall under the rubric of PSR. For researchers, this suggests the need to consider individual dimensions of PSR within this broader scope. While we are not suggesting that academics abandon individual fields of study such as environmental purchasing or sourcing from MBE suppliers, we are suggesting that researchers incorporate findings from these related streams of research when reviewing extant literature, developing hypotheses, and drawing conclusions.

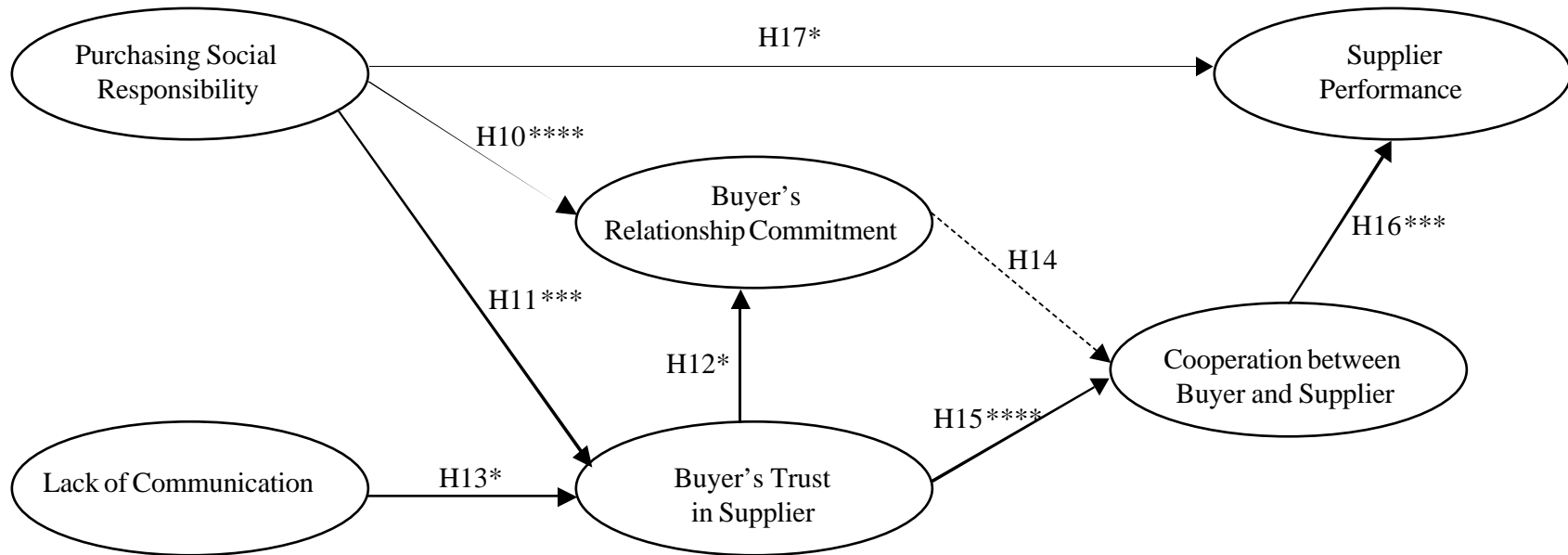
The results displayed in Figure 7 also hold important implications for practitioners. Purchasing managers should build upon their experience in one area of PSR, such as the initiation of environmental purchasing activities, when implementing other PSR programs, such as developing safety procedures surrounding sourcing decisions and the incoming movement of inventory. Similarly, many of the barriers that occur during the initiation of one dimension of PSR will likely exist with other dimensions of PSR. The identification of those barriers that are most significant can help managers to allocate scarce resources toward overcoming those barriers, and the methods used to overcome these barriers will in many cases be similar across the sets of PSR activities that load on the second-order construct displayed in Figure 7.

We next discuss our empirical results from testing the models in Figures 8 and 9. The contributions of this part of our study are twofold. First, we have developed theoretical models that blend research and theory in such diverse areas as marketing channel management, corporate social responsibility, transaction cost analysis, and organizational behavior, in order to explain the precursors and consequences of PSR. Second, we empirically test these models using a large-scale survey of purchasing managers in consumer products industries.

Research Question 2: What Are the Antecedents to PSR? - Drivers

An organizational culture helps to guide everyday working relationships and influences how employees act and behave within the organization. A people-oriented culture, which espouses values such as fairness and the desire to be a good corporate citizen, leads to significantly greater levels of PSR. Similarly, organizational policies that promote social responsibility are positively related to PSR. While top management support has long been extolled as a key driver of organizational change and the implementation of new programs and activities, top management support has no direct effect on PSR. Still, top management can play a vital role in supporting and facilitating PSR by setting organizational policies which promote socially responsible behavior, and through its direct impact on

Figure 9
Consequences of PSR



Note: Ovals represent latent constructs measured by multiple indicators. Dashed lines indicate no significant relationship.
* p<0.05, *** p<0.001, **** p<0.0001.

organizational culture. In turn, organizational culture and policies have a significant, positive, and direct effect on PSR.

While some authors have argued that organizational culture cannot easily be changed (Hofstede et al., 1990; Kabanoff & Holt, 1996), our findings support the counter viewpoint espoused by other researchers (Quinn, 1980). Management can affect PSR by shaping an organizational culture that both facilitates and encourages such characteristics as embracing the desire to be a good corporate citizen, being fair, and being supportive. Similarly, management can develop organizational policies that outline the firm's desire to engage in socially responsible behavior.

Some authors have asserted that a firm's success can hinge upon its culture. While culture is a significant driver of PSR, our qualitative research suggests that PSR can exist even in the absence of a congruent organizational culture when employees have individual values that are compatible with socially responsible actions. Our empirical results support these qualitative observations, but suggest that individual values are not directly related to PSR. Instead, a mediating relationship exists, in which individual values have a significant and positive influence on employee initiatives, which in turn positively affect PSR. Our empirical results also support Drumwright's (1994, p. 1) case study findings, which suggest that the individual actions of managers are "rooted in a commitment based on a complex and often difficult process of moral reasoning."

The findings from our tests of hypotheses 5 through 6a hold important implications for purchasing managers. When selecting an employee or manager to spearhead a PSR initiative, purchasing executives should identify individuals whose value systems are personally aligned with the PSR activity. Further, executives who wish to increase PSR within their organizations must create an environment which allows and encourages employees to identify opportunities and initiate actions in an entrepreneurial fashion.

Government regulation is not a significant driver of PSR. This finding matches those of prior research projects from some of the stand-alone areas of PSR, including environmental purchasing (Carter & Carter, 1998) and MBE sourcing (Carter et al., 1999). This may be due to the fact that the regulatory process in the United States, particularly in areas such as environmental regulation, has historically involved adversarial relationships between government and industry and has often employed end-of-pipe solutions to pollution prevention (Porter & van der Linde, 1995a, 1995b). Further, government regulation might even act as a barrier to the implementation of certain socially responsible activities (Dean & Brown, 1995),

particularly if the regulation is not tailored to specific industries (Carter & Carter, 1998).

The significant relationship between customers and PSR emphasizes the importance of the supply chain management concept to PSR. Firms must proactively respond to customer requests and desires regarding their socially responsible initiatives. The positive relationship between customer pressures and PSR also indicates that purchasing managers are cognizant of these external pressures, and emphasizes the need for purchasing managers to closely coordinate with marketing managers who sit at the firm's periphery and are in closest contact with downstream members of the supply chain (Webster, 1992).

While not directly tested as a part of either of our empirical models, our qualitative results suggest that the implementation of socially responsible marketing and public relations programs can also positively influence relationships with external stakeholders, including suppliers. In the next section of the report, we draw conclusions about how PSR - which is positively influenced by organizational culture, policies, employee initiatives, and customers - in turn affects such outcome variables as buyer commitment and trust, cooperation between buying and supplying organizations, and supplier performance.

Research Question 3: What Are the Consequences of PSR?

In this section we discuss the results from our empirical investigation into the outcomes of PSR. Earlier we suggested that PSR has many properties that are the antithesis of opportunistic behavior in supply chain relationships. Theory and some prior empirical research suggest that as opportunism increases, trust and commitment should both decrease. Our empirical results show that the involvement of purchasing employees in PSR (the opposite of opportunism) results in increased commitment to relationships with PSR suppliers and increased trust in those suppliers. As purchasing managers become more involved in PSR and integrate socially responsible suppliers into their firms' supply chains, their trust in these suppliers increases. As a result, purchasing managers become more committed to relationships with suppliers.

Just as past research has found a positive link between communication and trust, we find a negative relationship between a lack of communication and the degree of trust. This finding suggests that buyers must clearly communicate their expectations to PSR suppliers and must ensure that PSR suppliers in turn keep buyers well-informed about the suppliers' operations, including aspects such as new product developments, quality levels, and inventory and lead time status. Similarly, buyers should ensure that clear lines of communication exist within their own organization.

The results displayed in Figure 9 also show that buyers who trust their PSR suppliers are in turn more committed to these relationships. Our findings corroborate those of Morgan and Hunt (1994), who state that “relationships characterized by trust are so highly valued that parties will desire to commit themselves to such relationships,” (p. 24).

Trust in turn leads to cooperation between buyers and PSR suppliers. Thus trust plays a key mediating relationship between PSR activities and cooperation. When buyers trust their suppliers of PSR activities, they are willing to cooperate by providing assistance to these suppliers and jointly solving problems as they arise. The buyer’s commitment, however, is not related to the degree of cooperation between buyers and suppliers of PSR initiatives. While Morgan and Hunt (1994) found that both commitment and trust were significant antecedents to cooperation, their empirical research suggests that trust has a much stronger impact. Likewise in the case of PSR, trust is a significant antecedent to cooperation while commitment is not.

The extant literature suggests that cooperation between firms in a supply chain should lead to increased channel performance. Despite these assertions, this relationship has not been given close, empirical scrutiny. Ours is one of the first set of findings that provide empirical support for this assertion by demonstrating that cooperation in a supply chain, between buyers and suppliers, does positively influence one dimension of relationship success: supplier performance. These cooperative efforts lead to results that exceed those that the buying organization might achieve by acting independently and in its own best interests (Anderson & Narus, 1990). For the purchasing manager, this finding implies that closer cooperation with suppliers of PSR initiatives can result in improved performance by these suppliers in such areas as product quality and lead times.

Finally, higher levels of PSR also lead directly to improved levels of supplier performance, suggesting that PSR activities are more than just window dressing that can be used for marketing campaigns which emphasize the firm’s social responsibility. Instead direct, tangible benefits result in the form of improved supplier performance. Further, indirect benefits exist: PSR leads to increased trust, which in turn leads to increased cooperation and ultimately increased supplier performance. This finding extends the assertions that organizational citizenship behaviors can result in internal success (Organ, 1988), and suggests that “supply chain” citizenship behavior can also lead to success in terms of improved supplier performance.

Our research also has implications for industrial suppliers. One goal of relationship marketing is to become a pre-

ferred supplier by developing a customer’s trust. Our research suggests that industrial suppliers that are more involved in PSR will engender greater levels of both trust and commitment by their customers.

Limitations and Suggestions for Future Research

Our sample frame was limited to purchasing managers in consumer products organizations, thus potentially affecting the generalizability of results. Additional research is needed to extend these results to a broader spectrum of firms and to other functional areas involved in the management of the supply chain. A related issue concerns our use of a cross-sectional design. Stronger causal inferences could have been drawn through the use of longitudinal studies, and this is another area in need of further research.

Perhaps our finding of an insignificant relationship between the buying firm’s commitment to its relationships with PSR suppliers and the degree of cooperation between buyers and suppliers is due to our measurement of only the buyer’s commitment to relationships with PSR suppliers. Future research in this area might measure the combined commitment of both buyers and suppliers to the relationship.

Finally, additional empirical research is needed to examine the barriers to PSR, some of which were identified through the course of our interviews within the broader context of LSR. A better understanding of how purchasing managers overcome the inevitable barriers encountered when implementing PSR activities should help purchasing personnel to more effectively initiate and maintain these programs.

Appendix A:

Interview Protocol

INTRODUCTION

We're here today to discuss issues relating to social responsibility in (name of function, i.e. purchasing). I want to start by saying that there are no right or wrong answers, but rather differing points of view. I am just as interested in negative comments as positive comments; both can be very helpful. I'm interested in tapping your perspectives from the standpoint of the organization as a whole and (purchasing) as a function.

QUESTIONING ROUTE

1. First, can you tell me about your corporate culture as it relates to social responsibility, and whether it filters down to the purchasing function or department?
Probe: Does your organization (name of company), as a whole, have a stance?
2. I want to shift our conversation from the organizational (mention company's name) perspective and focus on the perspective of the purchasing function. Looking back on your experiences as a purchasing executive and the experiences of others in the purchasing function, how would you define social responsibility as it relates to purchasing?
3. Based on your experiences, what are some specific activities that you consider socially responsible (socially irresponsible) behavior in purchasing from a functional perspective?¹ As you mention each of these issues, I would like to go through questions 4A-C.
4. A. What do you think causes or drives the purchasing function's involvement in these activities?²
Probe: Government regulation, corporate culture, customers, the firm's legal and environmental affairs department.³
Probe: Are there any barriers to implementing these activities? If so, how are they overcome?
- B. What functions, besides purchasing, are involved in these socially responsible activities?
Probe: Which functions tend to initiate these activities?
Are these the same functions that continue to manage and coordinate these activities?
- C. What are some of the outcomes or effects of socially responsible purchasing in your company?

¹The critical incident technique was employed here, where individuals were then asked for particular incidents/examples for each of the types of behaviors or activities that they mentioned and were involved in.

²Questions 4A-D were linked to the critical incidents discussed in Question 3.

³Examples were given to "get the ball rolling" if necessary. The examples were presented in a random order among interviews to avoid bias.

Appendix B:

Development of the Study's Constructs

Existing scales were used where applicable, and additional scales were developed in accordance with accepted procedures (Churchill, 1979; DeVellis, 1991). This section considers the procedures that were used to purify the scales and to assess reliability and validity. Scales were developed based in part upon the results from the in-depth interviews. Additionally, scale development followed Churchill's (1979) eight-step process. Thus, the literature review was also used to define and generate sample items for the constructs to be developed. An initial survey was then constructed, based upon the developed and existing scales.

Next, a pretest was used to assess the face validity (Heeler & Ray, 1972) of these items. The pretest was conducted using both academicians and practitioners. Next, a pilot test was conducted with a group of over 50 purchasing managers. After completing the questionnaires, the study's models were presented to the managers, followed by an open discussion of the models and their constructs.

The surveys were then sent to 1,000 U.S. consumer products manufacturers, as described in the *Design of the Study* section of this report. The reliability and validity of constructs measured with multiple scale items were next assessed through the use of factor analysis and by calculating Cronbach's (1951) coefficient alpha.

Table 4 displays the constructs and the questionnaire items used to measure the constructs. For constructs measured with multiple scale items, the table presents coefficient alpha reliability values. All scale items had statistically significant standardized factor loadings with the vast majority having values above 0.60, indicating convergent validity (Anderson & Gerbing, 1988). In addition, none of the 21 multi-item scales had Cronbach coefficient alpha values below the 0.60 recommended minimum (Nunnally, 1978; Cronbach, 1951).

Table 4
Questionnaire Scale Items

Construct	Reliability ^a
Socially Responsible Purchasing	0.76
Environmental Purchasing ^b	
Diversity ^b	
Human Rights ^b	
Philanthropy ^b	
Safety ^b	
Environmental Purchasing	0.85
Currently, our purchasing function: ^c	
... uses a life-cycle analysis to evaluate the environmental friendliness of products and packaging	
... participates in the design of products for disassembly	
... asks suppliers to commit to waste reduction goals	
... participates in the design of products for recycling or reuse	
... reduces packaging material	
Diversity	0.68
Currently, our purchasing function: ^c	
... purchases from minority/women-owned business enterprise (MWBE) suppliers	
... has a formal MWBE supplier purchase program	
Human Rights	0.85
Currently, our purchasing function: ^c	
... visits suppliers' plants to ensure that they are not using sweatshop labor	
... ensures that suppliers comply with child labor laws	
... asks suppliers to pay a "living wage" greater than a country's or region's minimum wage	
Philanthropy	0.79
Currently, our purchasing function: ^c	
... volunteers at local charities	
... donates to philanthropic organizations	
Safety	0.68
Currently, our purchasing function: ^c	
... ensures that suppliers' locations are operated in a safe manner	
... ensures the safe, incoming movement of product to our facilities	
Ethics – Deceitful Practices	0.86
Currently, our purchasing function: ^{c,f}	
... invents (makes up) a second source of supply to gain competitive advantage	
... exaggerates the seriousness of a problem to gain concessions	
... purposefully misleads a salesperson in a negotiation	

Table 4
Questionnaire Scale Items (continued)

Ethics – Subtle Practices	0.68
Currently, our purchasing function: ^{c,f}	
... accepts meals from a supplier even if it is not possible to reciprocate	
... shares information about suppliers with their competitors	
... shows favoritism when selecting suppliers	
Policies	N/A
My department's involvement in socially responsible purchasing has been motivated by: ^c	
... written corporate or departmental policies	
Top Management	0.90
My department's involvement in socially responsible purchasing has been motivated by: ^c	
... the examples top management provides	
... requirements made by senior management	
... top-down initiatives	
Customers	0.91
My department's involvement in socially responsible purchasing has been motivated by: ^c	
... social programs that our customers have in place	
... customers who seek socially responsible suppliers	
... increased awareness of social issues among our customers	
Employees	0.85
My department's involvement in socially responsible purchasing has been motivated by: ^c	
... our employee suggestion system	
... employee initiatives	
... championing efforts by individual employees	
Regulation	0.83
My department's involvement in socially responsible purchasing has been motivated by: ^c	
... current government legislation	
... the threat of future government legislation	
... targeted actions by activist groups	
Individual Values	0.95
My department's involvement in socially responsible purchasing has been motivated by: ^c	
... the morals of individual employees	
... the personal desires of employees to do what is right	
... a personal sense of obligation among employees	
... the underlying values of employees	

Table 4
Questionnaire Scale Items (continued)

Organizational Culture 0.90

Next, we would like to briefly explore the extent to which the following characteristics are part of your organization's culture: ^d

- ... being people oriented
- ... fairness
- ... being supportive
- ... the desire to be a good corporate citizen

Communication ^e 0.83

1. There is not enough communication within our organization.
2. Our organization does not clearly communicate our expectations to suppliers.
3. We have difficulty coordinating socially responsible activities with other departments within our organization.
4. Our suppliers do not keep us well-informed of new developments related to socially responsible initiatives.

Supplier Performance ^e 0.81

As a result of undertaking socially responsible activities:

- ... we have been able to obtain products or services from suppliers that are of higher quality
- ... we have been able to obtain products or services from suppliers with shorter lead times
- ... suppliers have done their job more efficiently

Trust ^e 0.85

As a result of undertaking socially responsible activities:

- ... when making important decisions, our suppliers are concerned about our welfare
- ... when it comes to things that are important to us, we can depend on our suppliers' support
- ... promised made by suppliers are reliable

Cooperation ^e 0.69

As a result of undertaking socially responsible activities:

- ... our company helps out suppliers in whatever ways they ask
- ... any problems that may arise with suppliers are solved jointly

Commitment ^e 0.94

The relationships that our firm has with our suppliers for our socially responsible initiatives:

- ... are something we are very committed to
- ... are something we intend to maintain indefinitely
- ... are something we are willing to make long-term investments in

^a Coefficient alpha or inter-item correlations.

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

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

^d 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*.

^e These items were measured on a 7-point Likert scale where 1=*strongly disagree* and 7=*strongly agree*.

^f These items were reverse coded.

Appendix C:

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