Influences of Firm Orientations on Sustainable Supply Chain Management

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ABSTRACT

Building on stakeholder theory, we propose and test an integrative model that incorporates the relationships between a firm’s orientations and sustainable supply chain practices [i.e., sustainable purchasing practices (SPPs) and sustainable supply practices (SSPs)], and interactions between the different firm orientations as related to such sustainable practices. We empirically test our hypotheses in a two-phase survey of 149 managers in the U.S. manufacturing and service industries. Our findings reveal that a firm’s environmental and cultural orientations affect its SPPs and SSPs, while local community orientation drives SPPs only in large firms. The results also suggest synergistic effects of environmental and cultural orientations on SPPs and SSPs, while societal orientation positively moderates the effect of cultural orientation on SSPs. Moreover, our findings demonstrate the moderating effect of firm business type on the relationships between cultural orientation and SPPs and SSPs.

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1. Introduction

Supply chain management (SCM) involves efficiently using internal and external supplier capabilities and technology, and creating a seamlessly coordinated supply chain, resulting in the transfer of inter-firm competition to inter–supply chain competition and ultimately firm performance (Anderson & Katz, 1998). In recent years, SCM has become environmentally proactive, and the role of the purchasing function in facilitating recycling, reuse, and resource reduction has increased (Paulraj, 2011). Indeed, firms have begun to realize the importance of their suppliers implementing responsible environmental and social practices (Sharma & Henriques, 2005), as suppliers sensitive to sustainability can provide increased efficiency and protect intangible assets of buyers (Krause, Vachon, & Klassen, 2009).

In striving to keep up with the heightened attention firms pay to sustainable supply chain management (SSCM) (Carter & Carter, 1998), recent academic research has actively examined sustainable development in supply chains (Krause et al., 2009) in terms of the antecedents, practices, and performance implications of SSCM (e.g., Paulraj, 2011; Zailani, Eltayeb, Hsu, & Tan, 2012). As a result, over the years, SSCM has gained its status as a distinct discipline involved in the “management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder requirements” (Seuring & Müller, 2008, p.1700). Although past SSCM research has investigated the antecedents of sustainable supply chain practices (SSCPs), its focus has mainly been on external stakeholder pressures (Paulraj, 2011). In this research, we attempt to explore firm orientations, i.e. the overall proactive strategic stance and continuing commitment of firms towards the integration of specific concerns into their strategic, tactical and operational activities (Roxas & Coetzee, 2012), as drivers of firm SSCP, and examine the interactions between such antecedents.

The objective of this study is to propose and test an integrative research model that incorporates the relationships between a firm’s behaviors related to SSCP and firm orientations, as well as the possible interactions between the different firm orientations on firm SSCP. Although past research suggests that a firm’s strategic orientations guide the activities of a firm and generate actions aimed to ensure its viability and performance (Hakala, 2011), extant research has not examined effects of various firm orientations on a firm’s purchasing and supply practices from a sustainability perspective. Accordingly, our research questions are as follows: (1) What are the relative effects...
of the different firm orientations (i.e., environmental orientation, societal orientation, cultural preservation orientation, and local community orientation) on SSCPs, specifically, sustainable purchasing practices (SPPs) and sustainable supply practices (SSPs)? (ii) What is the influence of a firm’s size and business type on the above relationships? And, (iii) what is the nature of interactions that exist between the different firm orientations, as related to SSCPs? We test the hypothesized relationships on primary data obtained from a two-phase industrial survey of 149 managers from the U.S. manufacturing and service industry. We collected the data in two separate rounds from the same managers in the same firms. We first obtained firm orientations, and then we returned to gather the data on their SSCPs.

This research strives to contribute to the literature and practice of SSCM in several ways. By identifying firm-level orientations that drive SSCPs, we extend knowledge of the role of firm-level predispositions on SSCM. We provide a fine-grained investigation of firm-specific orientations and spearhead the inclusion of firm-level orientations in the nomological net of SSCM. We also extend the literature on how the focal relationships vary as a result of firm demographic differences, such as variations in firm size and business type. From a managerial perspective, we intend to inform supply chain and marketing managers about optimal strategies for SSCPs that fit firm-specific cultures and demographics.

This article proceeds as follows: in the next section, we introduce the research background on sustainability and SSCPs in general. We continue this discussion by presenting our research framework and establishing hypotheses in the next section. We then describe the data collection methods and measures for this study. After presenting and discussing the results, practical implications and future research directions are provided.

2. Conceptual background and literature review

2.1. Sustainable development and SSCM

Sustainable development is “… a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs” (World Commission on Environment and Development, 1987, p. 9). A review of the literature on firm sustainability practices shows that research has encompassed a comprehensive view of sustainability, with a focus on the triple bottom line of social, environmental, and economic goals (Elkington, 2004). While prior sustainability research in the business literature has focused on efficient resource and energy use, reduction of pollution and waste, and promotion of green behaviors in the firm and supply chain (e.g., Roper & Parker, 2013), recent developments such as globalization and fragmentation of supply chains have turned firms toward their supply chains for customer value creation (Lockstrom, 2011; Ramirez, 2013), resulting in the integration of suppliers into the sustainability discourse of firms (Sharma & Henriques, 2005; Krause et al., 2009). In this study, we define sustainable supply chain management (SSCM) as the systemic coordination of key inter-firm business processes to achieve social, environmental, and economic goals (Teuteberg & Wittstruck, 2010); we refer to the resulting managerial practices as sustainable supply chain practices (SSCPs), comprising both sustainable purchasing practices (SPPs) and sustainable supply practices (SSPs). Based on Gollicz and Smith (2013), we define SPPs as activities or efforts taken to reduce or eliminate the detrimental impact of supply chain management-related functions or processes focused on the side of its suppliers (upstream supplier-focused practices). Drawing from Closs, Speier, and Meacham (2011) and Gollicz and Smith (2013), we define SSPs as the activities or efforts taken to reduce or eliminate the detrimental impact of marketing decisions regarding product design, communications or channel selection, related to the customer side (i.e., downstream customer-facing practices).

Extant research on SSCM suggests that a variety of constituents external to the firm can drive its SPPs and SSPs. Past research suggests that constituents influencing a firm’s environmentally sustainable purchasing activities include customers (Ramirez, 2013), competitors (Makower, 1993), and governmental agencies (Cavazos, Patel, & Wales, 2012). Research has also identified media (Mont & Leire, 2008), industry organizations, certifications auditors, external consultants (Hojemose & Adrien-Kirby, 2012), NGOs (Deligonul, Elg, Cavusgil, & Ghauri, 2013), consumers (Wallace, 2007), and governmental regulations (Deligonul et al., 2013) as external drivers of socially sustainable purchasing; notably, suppliers are not one of them (Mont & Leire, 2008). On the supply side, research has identified customer pressure and governmental regulations and incentives (Zailani et al., 2012) as external drivers of a firm’s sustainable supply practices.

In addition to external drivers, the literature suggests that several firm internal factors drive SSCPs; however, research in this area is limited, compared with the predominance of studies on external drivers (Paulraj, 2011). Carter and Carter (1998) suggest that organizational factors such as environmental commitment, rewards and incentives, and policy entrepreneurship can affect environmental purchasing practices. Other factors such as top management sensitivity (Menon & Menon, 1997) and involvement (Lockstrom, 2011), corporate sustainability culture (Eccles, Ioannou, & Serafeim, 2012), and company values (Mont & Leire, 2008) also affect SSCPs. Given the dearth of studies examining firm-level antecedents of SSCPs, an investigation of internal firm-specific antecedents of a firm’s overall sustainability strategies can provide insights into the drivers of SSCPs, potentially forming part of the nomological net of SSCPs research. In summary, prior research on SSCPs suggests that a firm’s overall orientation towards different aspects of sustainability is an important factor and thus provides an important direction for further exploration.

2.2. Theory and hypotheses

2.2.1. Firm orientations

An orientation is a latent philosophy that directs the nature and scope of a firm’s internal and external activities (Kotler, 2000). While extant research suggests that firm orientations can be conceptualized as valuable intangible resources that guide its strategic practices (Ge & Ding, 2005), there is general consensus on the firm orientation–strategy–performance link in the management and marketing literature (Prahalad & Bettis, 1986). Relatedly, past literature also indicates that firm orientations can predict firm strategies and behaviors (Hakala, 2011). The concept of firm orientation has been viewed from both a strategic perspective, i.e. making a choice to compete on capabilities derived by adopting a particular business culture or concept (Narver & Slater, 1990), and structural perspective, i.e. a firm’s proclivity toward a way of doing business (e.g., relational proclivity; Johnson & Sohi, 2001), which may facilitate integration of various firm concerns into tactical and operational activities. Although strategic orientations have been defined in different ways, using a plethora of terms, the common reference in these explications has been to the managerial perceptions, predispositions, tendencies, motivations, proclivities and desires, which precede and guide strategy formulation and, ultimately, the performance of the organization (Chan, 2010; Johnson & Sohi, 2001).

While past research has explained and defined firm orientations using a myriad of terminologies, in this study, our conceptualization of firm orientation refers to the managerial recognition of the importance of a specific issue facing firms (Banerjee, 2001, 2002), reflecting a set of organizational beliefs, culture, and propensity regarding a specific issue. While both the academic and practitioner literature on sustainability suggests that variables related to a firm’s culture of sustainability are strong drivers of its sustainable practices (Eccles et al., 2012; Lockstrom, 2011), we contend that certain firm-specific orientations reflect the general culture in an organization and lead to sustainable practices in the supply chain, and we explore such firm orientations.
that can explain the adoption of sustainable practices. Because firm orientations are reflected in terms of both a firm’s way of doing business (Johnson & Sohi, 2001) and orientation toward a particular business culture or concept (Narver & Slater, 1990), we use the terminology of firm orientations to denote the different firm predispositions and proclivities that we propose as drivers of SSCPs.

2.2.2. Firm orientations as drivers of SSCPs

While extant research identifies variables such as employees influence, top management support and organizational values (Carter & Jennings, 2004) as internal drivers of SSCPs, previous reviews in the area of sustainability have also identified the importance of having an environmental orientation (e.g., Banerjee, 2001), social focus (Miemczyk, Johns, & Macquet, 2012), a cultural orientation (Hoejmose & Adrien-Kirby, 2012), a geographic orientation (Ashby, Let, & Hudson-Smith, 2012), a regional (local) orientation (Bird & Smucker, 2007), and a focus on how a firm’s employees, customers, suppliers and other stakeholders are treated throughout the process (Closs et al., 2011). In this research, drawing on the stakeholder literature (e.g., Freeman, 1984; Wood, 1994; Frouman, 1999), we suggest that multiple stakeholders exert influence on firm orientations, which in turn enables implementation of SSCPs. Based on findings from past literature on SSCM and stakeholder theory, this research focuses on environmental, societal, cultural and local community orientations as the focal firm orientations that drive its SSCPs.

2.2.3. Environmental orientation

Environmental orientation, one of the dimensions of corporate environmentalism, refers to a firm’s internal values and ethical standards regarding the level of commitment it should render to environmental protection (Banerjee, 2001, 2002), a firm-wide recognition of the legitimacy and importance of the biophysical environment, and reflects managerial perception of the importance of environmental issues facing the firm (Banerjee, Iyer, & Kashyap, 2003). Since corporate leaders can play an initiating and catalytic role in the diffusion of environmentalism as a corporate value, environmental orientation includes both internal values and ethical standards regarding a firm’s commitment to environmental protection and also the need to respond to external stakeholders’ environmental demands (Chan, 2010). Thus, environmental orientation reflects the overall strategic proactive stance and continuing commitment towards integration of environmental concerns and practices into a firm’s strategic and operational activities (Roxas & Coetzter, 2012).

2.2.4. Societal orientation

A firm’s societal orientation reflects a concern on the long-term interests and well-being of consumers and society at large (Kang & James, 2007). Firms with a societal orientation recognize the conflicting criteria of company profits, consumer need satisfaction, and public interest (Kotler, 2000). In line with extant literature, we refer to a firm’s societal orientation as its overall strategic proactive stance and continuing commitment to solve problems of society at large and to integrate societal concerns and practices into a firm’s strategic and operational activities. Our conceptualization of firm societal orientation is similar to and overlaps with that of a firm’s corporate social responsibility (CSR), yet the former clearly refers to a firm’s orientation, while CSR is used more liberally to denote several concepts ranging from a firm orientation to strategic behavior.

2.2.5. Cultural preservation orientation

A review of the literature shows that critical to sustainable practice implementation are issues of resources and culture (Hoejmose & Adrien-Kirby, 2012). In this paper, we use the simpler terminology of cultural orientation to denote cultural preservation orientation, which refers to a firm’s commitment to conduct business without jeopardizing the integrity of the host culture in which it conducts business (Sautter & Leisen, 1999). Research has noted that multinational corporations have a sense of responsibility towards the society in which they operate (Murphy & Poist, 2003). The literature on tourism, international business, and architecture highlights the importance of preserving the local culture (e.g., Sautter & Leisen, 1999; King, 2006). A firm’s cultural orientation reflected in a concern with the protection and concomitant isolation of host cultures and environments can be due to the anticipated destruction of a fragile local culture (Sautter & Leisen, 1999) and is related not only to preservation of the local culture but also to the firm’s own culture while expanding across geographies (King, 2006). In line with prior research, we define firm cultural orientation as a firm’s overall strategic proactive stance and continuous commitment to maintain and preserve the cultural aspects of the immediate environment in which it is situated.

2.2.6. Local community orientation

The view that implementation of sustainable practices should take the context and cultural settings into consideration underscores the importance of the local communities in terms of their history and make up (Bird & Smucker, 2007). As such, local community orientation, or simply community orientation, reflects a firm’s concerns about and empathy toward the needs of the local community. Local community orientation is common in firms operating in industries that have traditionally served local communities. Media research suggests that orientation toward the local media is an enduring component of media firms’ community orientation (Jankowski, 2006). Past media literature has examined concepts of community attachment (Fernandez & Dillman, 1979), community involvement (Stamm, 1985) or community creation (Jankowski, 2006). Prior research in health care suggests that firms that have a community-oriented mission statement tend to be more community health oriented (Seay & Simdgon, 1989). The recognition of the ‘local’ aspect of sustainability in the SCM literature helps to achieve balanced social development within local eco-systems’ (Ashby et al., 2012, p.507). From a sustainability perspective, a focus upon the local and regional community supports a broad set of community values along with preservation of physical resource base (Feagan, Morris, & Krug, 2004). Thus, we conceptualize firm community orientation as a firm’s proactive strategic stance and continuing commitment to support businesses in the local community.

We develop hypotheses pertaining to the relationships between SSCPs and environmental, societal, cultural and local community orientations. Furthermore, we introduce firm demographic variables as moderators to the relationships and explore combined interaction effects of the firm orientations on SSCPs. Fig. 1 depicts our conceptual model.

2.2.7. Hypotheses development

A firm’s orientations are stable and more enduring than its individual marketplace initiatives (Venkatraman, 1985) and can determine the specific strategies and activities adopted and implemented (Voss & Voss, 2000). The notion that firm orientations can guide strategic practices (Ge & Ding, 2005) has been empirically tested in the context of environmental sustainability (e.g., Chan, 2010) but has not been discussed in the context of SSCM. Drawing from stakeholder influence theory (e.g., Freeman, 1984; Wood, 1994; Froman, 1999), we extend current research on the strategic orientation–strategy link (Prahald & Bettis, 1986) by integrating firm sustainability and business strategy (e.g., Starik & Rands, 1995) and forwarding relationships between SSCPs and firm orientations.

According to the stakeholder literature, stakeholders who are important in terms of power, legitimacy, and urgency (Mitchell, Agle, & Wood, 1997) can influence organizational strategies. Building on the work of Pfeffer and Salancik (1978); Froman (1999) forwarded a typology of firm stakeholders after considering the resource interdependence between the focal firm and its stakeholders. Cell 1 in Fig. 2 represents situations when a firm and its stakeholders have no (or low)
resource interdependence on each other, and cell 2 represents firm power, in which the stakeholder group is resource dependent on the firm but the firm has no (or low) dependence on the stakeholder group. Cell 3 represents stakeholder power, in which stakeholders control critical resources but are not resource dependent on the firm, and cell 4 represents situations when a firm and its stakeholders are highly resource interdependent on each other.

Through buyers' insistence of environmental compliance for suppliers and recycling and product life-cycle extension strategies for customers, sustainable purchasing and supply practices result in environmental and societal benefits respectively. Through sustainable purchasing practices that ensure that suppliers respect human rights and local cultures in their manufacturing and responsible marketing practices, sustainable purchasing and supply practices can also appeal to cultural stakeholder groups. However, cell 1 in Fig. 2 represents stakeholders such as environmental, social, and cultural groups on whom the firm is not resource dependent, and thus these stakeholders' influence will be in the form of indirect strategies through other stakeholders on whom the firm is resource dependent, such as customers (Frooman, 1999; Sharma & Henriques, 2005). In the absence of a direct influence of these stakeholder groups on the firm, the presence of high environmental, societal, and cultural (preservation) orientations in a firm assumes importance in driving SSCP.

A pro-environmental corporate culture imposes a positive effect on environmental practices focused on suppliers and customers. Extensive evidence shows the effect of firm environmental orientation on environmentally sustainable strategies (e.g., Chan, 2010). Because a firm's environmental orientation can be considered the ecological version of strategic orientation (Russo & Fouts, 1997), environmental orientation will influence the practice of firm environmental strategies (Prablad & Bettis, 1986). In addition, a firm's societal orientation reflects a focus on reducing negative consequences associated with a firm's products (Kang & James, 2007). Thus, a firm's societal orientation will have a vital role in influencing its practices related to sustainable purchasing and supply. Finally, research also shows that a firm's cultural (preservation) orientation can lead to supplier-focused (e.g., preservation of local artists) and customer-focused (e.g., isolation and separation) strategies in the supply chain (Ganesan, George, Jap, Palmatier, & Weitz, 2009). Moreover, Mello and Stank (2005) investigated the role of cultural orientation in implementing SCM to emphasize the need for cultural dimensions to be consistent through horizontal as well vertical levels of an individual firm, as well as across supply chain partners. Thus, we state as follows:

H1. A firm's (a) environmental, (b) societal, and (c) cultural orientations positively affect its sustainable purchasing practices.

H2. A firm's (a) environmental, (b) societal, and (c) cultural orientations positively affect its sustainable supply practices.

* Adapted from Frooman (2009) and Sharma & Henriques (2005).

Fig. 2. Stakeholder influence framework*. * Adapted from Frooman (1999) and Sharma and Henriques (2005).
We expect that a firm's cultural orientation has differential effect on SSCPs, at varying levels of the firm's environmental and societal orientations. Although cultural orientation motivates the firm to engage in sustainable strategies in its purchasing and marketing activities, the presence of high environmental or societal orientations may result in environmentally and socially sustainable strategies embedded in the firm's cultural environment, thus ensuring continuity of implementation of SSCPs, with a synergistic effect of cultural and environmental orientation. High levels of both cultural and societal orientations may be more effective in driving SSCPs than a firm's cultural orientation alone. Thus, we formally state as follows:

H3. A firm's (a) environmental and (b) societal orientations positively moderate the positive relationship between its cultural orientation and sustainable purchasing practices.

H4. A firm's (a) environmental and (b) societal orientations positively moderate the positive relationship between its cultural orientation and sustainable supply practices.

Cells 3 and 4 in Fig. 2 represent stakeholder groups, including local communities and customers, which have considerable influence on the firm as a result of its resource dependence on them. Because a firm's sustainable supply practices as a response to local stakeholders' influence are directed to its customers at large regardless of local considerations, a local community orientation may not explain the variance in sustainable supply practices. Conversely, sustainable purchasing practices involve sourcing procedures that provide support to local suppliers' businesses (Schwartz, 2009). Such local suppliers may be relatively more resource dependent on their local buying firm (cell 2), resulting in firm power, and less influence of local suppliers in terms of implementing sustainable strategies. In such situations, a local community orientation will be important in driving the firm to implement sustainable purchasing practices. Thus, we formally state as follows:

H5. A firm's community orientation positively affects its sustainable purchasing practices.

The larger a firm, the stronger is its power over its local suppliers as a result of the relative resource dependence of this stakeholder group on the firm. Thus, the importance of (local) community orientation for the implementation of SPPs becomes greater as firm size increases. Moreover, superior resource endowments from firm size enable firms to navigate economies of scale and scope and to absorb the higher research-and-development costs in creating and implementing SSCPs (Dowell, 2006). Therefore, we expect that the resource endowments of large firms enable a community-oriented firm to absorb the costs in implementing sustainable purchasing practices. Yet, because the firm is not resource dependent on the environmental, societal, and cultural stakeholder groups, and vice versa, its size will not affect the influence of these stakeholder groups. Thus, we formally state as follows:

H6. The positive effect of community orientation on sustainable purchasing practices is higher for larger firms than for smaller firms.

The effect of a cultural orientation on customer-focused responsible strategies may be keenly felt in firms that are service oriented and have a large interaction component (Sautter & Leisen, 1999). For example, culturally oriented service firms may implement SSPs as part of their regular marketing mix, because the cultural element is an integral part of the service component. Conversely, because the role of the purchasing department and suppliers is relatively more important in manufacturing than service firms, culturally oriented manufacturing firms may implement sustainable purchasing practices that focus on cultural preservation objectives as part of their regular purchasing practices (King, 2006). Thus, we state as follows:

H7. The positive effect of cultural orientation on sustainable purchasing practices is higher for manufacturing firms than for service firms.

H8. The positive effect of cultural orientation on sustainable supply practices is higher for service firms than for manufacturing firms.

3. Research methodology

3.1. Data collection

We empirically tested our hypotheses using primary data collected from two waves of online surveys conducted with senior- and middle-level managers working in the U.S. manufacturing and service firms. Since collecting data about antecedents and consequences from the same respondents using the same method may induce biases in our variables and the relationships between them, based on Podsakoff, MacKenzie, Lee, and Podsakoff’s (2003) suggestions, we adopted a two-phase data collection methodology to address biases due to common method variance. Accordingly, in the first wave, 1000 managers were contacted and requested to participate in the survey, which contained the independent variables; we received 200 usable responses (20% response rate). Three months later, we contacted the respondents from the first survey to gather the data on the firm’s behaviors related to SSCPs; we received 149 complete responses that matched the first-wave responses, resulting in a 74.5% response rate for the second wave.

The survey data indicate that the respondents held management positions, such as general managers, managers, directors, department heads, supervisors, and so on, suggesting that they had essential knowledge to answer the survey questions. Firm demographics data reveal that only 15.4% firms were established in the past decade, 21.5% had operated in their respective fields for more than half century, and the rest had been in business for 10–50 years. Only 23.5% of the firms had 25 employees or fewer, and the rest had between 25 and 5000 employees. A majority of the respondents were from service firms; manufacturing firms accounted for only 23.5% of the sample. Appendix A shows the profile of the respondents.

3.2. Measures

We collected data using multi-item scales adopted/adapted from existing research. We developed our scales though a three-stage process: our survey instruments were first reviewed by four professors who were familiar with the research topic and survey research techniques. Next, the scales were pretested through interviews with five senior firm executives. Finally, based on the results of the pretest, the instruments were refined with regard to content, arrangement, wording accuracy, and relevance. This procedure ensured face validity and content validity of the final survey instruments. The items used in the survey appear in Appendix B.

Environmental orientation (EO) was assessed by a multi-item reflective scale (6 items, $\alpha = .951$). We created the environmental orientation scale from existing research (Gupta, 1994; Russo & Fouts, 1997; Banerjee, 2002). Societal orientation (SO) was captured by a multi-item reflective scale (5 items, $\alpha = .936$) adapted from existing scales in the CSR literature (Frooman, 1999; Galbreath, 2006; Mishra & Suar, 2010). We created our own multi-item reflective scale (7 items, $\alpha = .932$) for cultural (preservation) orientation (CPO) because an existing scale was not readily available in the literature. Finally, we assessed local community orientation (LCO) using a multi-item reflective scale (4 items, $\alpha = .819$) adapted from suggested reporting conventions on local community impacts (Global Reporting Initiative, 2011).

For the focal outcome variables, we measured sustainable purchasing practices using a multi-item reflective scale (3 items, $\alpha = .910$) adapted from existing research (Logsdon & Wood, 2002; Mishra & Suar, 2010). We measured sustainable supply practices using a multi-item reflective scale (5 items, $\alpha = .872$) adapted from existing research (Frooman, 1999; Galbreath, 2006; Mishra & Suar, 2010). All these items
were rated on a five-point Likert scale, with endpoints of 1 ("strongly disagree") to 5 ("strongly agree"). We pre-tested all the scales to enhance their face validity, readability, and brevity, before sending them to the respondents. We measured all firm demographics using single-item scales.

3.3. Measure validation

We initially gathered responses for 37 measurement items that captured the six focal constructs, and used exploratory factor analysis to reduce the number of measurement items to a smaller set. We used Varimax rotation with an extraction criterion of an eigenvalue above one and excluded all measurement items with loadings < .50 (Comrey, 1992), high cross-loadings > .4 and item-to-total correlations > .3 (Janda, Trochia, & Gwinner, 2002) from the factor matrices. We then iteratively reexamined the factor structures using the reduced number of measurement items until all requirements were met. Appendix B shows the final 30 measurement items and their corresponding latent constructs, as well as standardized factor loadings of the measurement items on corresponding latent constructs. All the factor loadings are above .60 and statistically significant.

3.4. Data analysis

The two-step structural equation modeling (SEM) approach (Anderson & Gerbing, 1988) using LISREL 8.8 was employed for data analysis. In step one, we establish the measurement model adequacy for EO, SO, CPO, and LCO and assess unidimensionality, reliability, and construct validity of all measurement models. We examined this in terms of model-to-data fit and parameter estimates by way of a confirmatory factor analysis using SEM. In step two, we determine full structural model adequacy and test the hypothesized causal relationships (H1–H8).

The results show that all measurement models achieve a satisfactory fit to the data. Tables 1 and 2 show the model-to-data fit and the test results of all measurement models for unidimensionality, reliability, and construct validity, respectively. The chi-square test values of all measurement models are non-significant (p < .05), which proves unidimensionality. Cronbach’s coefficient alphas and construct reliability scores for all measurement models are above .70. Therefore, we establish evidence of reliability. All factor loadings of measurement items on their corresponding constructs are significantly high (loadings > .50; t-values > 1.96), and all the goodness-of-fit indexes meet recommended values, suggesting convergent validity. In addition, the average variance extracted (AVE) scores for all constructs are above the desired threshold of .5, and none of the confidence intervals (of two standard errors around the correlation between each respective pair of factors in the model) capture 1.0. These measures demonstrate adequate convergent validity and reliability (Fornell & Larcker, 1981).

We then assessed discriminant validity of the measures in two more ways. First, we ran chi-square difference tests for all the constructs in pairs to determine whether the restricted model (correlation fixed at 1) is significantly worse than the freely estimated model (correlation estimated freely). All the chi-square differences are highly significant (EO vs. SO: $\chi^2(1) = 376.46, p \leq .001$; SO vs. CPO: $\chi^2(1) = 233.48, p \leq .001$; LCO vs. CPO: $\chi^2(1) = 631.07, p \leq .001$; EO vs. LCO: $\chi^2(1) = 97.83, p = .001$; SO vs. LCO: $\chi^2(1) = 133.86, p \leq .001$), in support of discriminant validity (Anderson & Gerbing, 1988). Second, we calculated the shared variance between all possible pairs of constructs to determine whether they are lower than the AVE for the individual constructs. The results show that for each construct, the AVE is much higher than the highest shared variance with the other constructs, in additional support of discriminant validity (Table 2) (Fornell & Larcker, 1981). Overall, these results show that our measures possess adequate reliability and validity.

3.5. Results of structural model

The results of the structural model (normed chi-square = 1.71, RMSEA = .06, GFI = .921, NFI = .952, NNFI = .976, CFI = .979) indicate that adequate fit was achieved. Then, we ran the full SEM model to estimate path coefficients through an iterative process. As Table 3 shows, the effects of EO on sustainable purchasing practices and sustainable supply practices were .79 and .40, and both were statistically significant (p < .05), in support of H1a and H2a. The effects of SO on sustainable purchasing practices and sustainable supply practices were not statistically significant, so H1b and H2b are not supported. The effects of CPO on sustainable purchasing practices and sustainable supply practices were .40 and .31, respectively, and all were statistically significant (p < .05), in support of H1c and H2c. Finally, the effect of LCO on

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sustainable purchasing practices was statistically non-significant; thus, H5 was not supported.

The results in Table 4 (normed chi-square = 1.54, RMSEA = .04, GFI = .933, NFI = .958, NNFI = .982, CFI = .990) indicate that adequate fit was achieved for the model, including the moderating effects. H3 and H4 argue that EO and SO moderate the positive relationship between CPO and sustainable purchasing practices and sustainable supply practices, respectively. The results show that H3a, H3b, and H4a were supported (H3a: moderating effect = .88, p < .05; H3b: moderating effect = .76, p < .05; H4a: moderating effect = .49, p < .05), while H4b was not supported. The moderating effect of firm size on the relationship between LCO and sustainable purchasing practices was .18 and statistically significant (p < .05), in support of H6. The moderating effect of a firm’s business type on the relationship between CPO and sustainable purchasing practices was −.19 and statistically significant (p < .05), supporting H7. Finally, the moderating effect of a firm’s business type on the relationship between CPO and sustainable supply practices was .23 and statistically significant (p < .05), supporting H8.

4. Discussion and contributions

This research responds to the clarion call for more investigation into the area of sustainable supply chains and their integration into business models and processes (e.g., Seow, Sarkis, Lockstrom, & Callarman, 2012) by extending the generally accepted “strategic orientation–strategy” relationship (Prahalad & Bettis, 1986) to the area of SSCM. Drawing from stakeholder influence theory (e.g., Pfeffer & Salancik, 1978; Freeman, 1999), we propose and test hypotheses for the relationships between SSCPs and firm orientations, as well as, moderating effects to these relationships. Our analyses show that most of our hypotheses were supported, providing empirical evidence of the overall effect of firm-specific orientations on SSCPs.

The effects of environmental orientation on SSCPs lend further support to existing research that environmental issues are key to the sustainability discourse (Sikdar, 2004). Yet, the absence of an effect for societal orientation is intriguing, despite the extensive awareness about CSR as a strategy for firm sustainability, and the amount of academic research on the topic (e.g., Mishra & Suar, 2010). Top management leadership has been identified as a significant driver of sustainable purchasing (Carter & Jennings, 2004). This means that sustainable practices can be implemented regardless of the individual employees’ views. Employees can contribute through individual initiatives, if they hold socially responsible values. It could be the case that if there is a degree of misalignment between socially oriented views of top managers and the individual employees selected to develop or manage sustainable practices, the efficiency in the implementation of these practices will suffer.

The positive effect of cultural orientation on SSCPs is an important finding because this construct has not been discussed or empirically tested in extant sustainability research. However, the absence of an effect of local community orientation on sustainable purchasing practices was an unexpected finding, despite renewed efforts in the U.S. to support local businesses and firms’ positive response to such movements (Schwartz, 2009). The results of the moderating effect analysis show evidence for the synergistic effects that a firm’s cultural orientation has with environmental and societal orientations, while leading to sustainable purchasing practices. Although the moderating effect of societal orientation on the link between cultural orientation and sustainable purchasing practices was supported, our proposition of the combined effects of a firm’s cultural orientation and societal orientation on sustainable supply practices was not supported. This might be because the main effect of a firm’s cultural orientation on responsible customer-focused practices is very strong and therefore is not bounded by the presence or lack of a societal orientation. However, cultural orientation and societal orientation seem to work together to positively affect sustainable purchasing practices.

This research contributes both theoretically and managerially to the field of SSCM. Theoretically, we extend current literature on firm strategic orientations to the area of SSCM. First, we propose a comprehensive framework of firm orientations as drivers of a firm’s SSCPs. Extant literature has focused either on the link between firm orientations and general firm sustainability (e.g., Menon & Menon, 1997) or on external factors (e.g., Paulraj, 2011) as antecedents to sustainable supply chain strategies. Second, we advance current knowledge of supply chain sustainability by introducing firm orientations, such as local community orientation and cultural orientation, into the nomological net of sustainable supply chain strategies. In doing so, we stay true to the spirit of the current issue of introducing new knowledge and departing from current assumptions (e.g., Seow et al., 2012), because extant sustainability literature has almost always focused on environmental and/or societal orientations as firm orientation variables (e.g., Calbreath, 2006; Chan, 2010; Mishra & Suar, 2010). Our research also contributes to the sustainable supply chain management literature by showing that different types of SSCPs can have different antecedents. Moreover, the results of our moderating effect analysis set boundary conditions for the effects of firm-specific orientations on SSCPs, providing directions for further research in this field.

The research findings provide practical insights into the specific firm orientations that can lead to the successful implementation of SSCPs. Our positive results for cultural orientation should encourage managers to continue nurturing a cultural preservation focus among employees, especially as they go global with operations in diverse cultures. The moderating role of societal orientation on the effect of cultural orientation on sustainable purchasing practices indicates that it would be unwise for companies to focus only on creating an environmental vision; rather, they should also focus on creating an environment that promotes the effectiveness of cultural orientations. Managers in large firms should focus on building close community relationships, as suggested by the moderating influence of firm size on the effect of community orientation on sustainable purchasing practices. Such practices can increase cooperation and participation for future sustainability activities among stakeholders and help build a positive public image as a responsible firm in the eyes of society.

Table 4

<table>
<thead>
<tr>
<th>Hyp.</th>
<th>Predictor (X)</th>
<th>Outcome (Y)</th>
<th>Moderator (Z)</th>
<th>Path Coefficient X → Y</th>
<th>Path Coefficient Z → Y</th>
<th>Path Coefficient XZ → Y</th>
<th>Moderating Effect XZ → Y</th>
<th>Support for Hypothesis*</th>
<th>Model Fit</th>
</tr>
</thead>
<tbody>
<tr>
<td>H3a</td>
<td>CO</td>
<td>SPP</td>
<td>EO</td>
<td>0.45</td>
<td>4.04</td>
<td></td>
<td>0.49</td>
<td>6.84</td>
<td>0.88</td>
</tr>
<tr>
<td>H3b</td>
<td>CO</td>
<td>SPP</td>
<td>SO</td>
<td>0.45</td>
<td>4.04</td>
<td></td>
<td>−0.19</td>
<td>−1.48</td>
<td>0.79</td>
</tr>
<tr>
<td>H4a</td>
<td>CO</td>
<td>SSP</td>
<td>EO</td>
<td>0.33</td>
<td>4.41</td>
<td></td>
<td>0.63</td>
<td>10.92</td>
<td>0.49</td>
</tr>
<tr>
<td>H4b</td>
<td>CO</td>
<td>SSP</td>
<td>SO</td>
<td>0.33</td>
<td>4.41</td>
<td></td>
<td>−0.03</td>
<td>−0.09</td>
<td>−0.25</td>
</tr>
<tr>
<td>H6</td>
<td>LCO</td>
<td>SPP</td>
<td>Firm size</td>
<td>0.12</td>
<td>1.57</td>
<td></td>
<td>0.04</td>
<td>0.11</td>
<td>0.18</td>
</tr>
<tr>
<td>H7</td>
<td>CO</td>
<td>SPP</td>
<td>Business type</td>
<td>0.45</td>
<td>4.04</td>
<td></td>
<td>−0.08</td>
<td>1.10</td>
<td>−0.19</td>
</tr>
<tr>
<td>H8</td>
<td>CO</td>
<td>SPP</td>
<td>Business type</td>
<td>0.33</td>
<td>4.41</td>
<td></td>
<td>0.04</td>
<td>0.54</td>
<td>0.23</td>
</tr>
</tbody>
</table>

* p < .05.

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5. Limitations and future research directions

In this research, we used only primary data for our analyses. Further research could supplement this with objective measurements in the form of secondary data that can be proxies for firm orientations. Although we collected data in two phases to avoid common method bias, further research could collect data from multiple sources in the firm. Further research could also include performance outcome measures and link SSCPs to environmental and economic outcomes of the firm. Moreover, the significant effects of cultural orientation on SSCPs suggest that research should include firm data from multiple cultures and test whether these effects hold only for U.S. firms or whether they generalize to global sustainability.

We started with the question as to what really causes some firms to employ sustainable purchasing practices and sustainable supply practices while many others still resist. We suggest that part of the answer lies in the extent to which a firm’s culture and overall philosophical thinking is oriented towards issues about the environment, society, cultural preservation and the local community. Based on our findings, we also forward the possibility of a more global and a strategic orientation construct, such as strategic sustainability orientation (comprising the firm orientations examined in this research) that may better explain the sustainability behaviors implemented in a firm. We leave it to further research to examine this possibility.

Appendix A. Sample Demographics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm age</td>
<td>≤ 10</td>
<td>23</td>
<td>15.4%</td>
</tr>
<tr>
<td></td>
<td>10 ≤ 20</td>
<td>39</td>
<td>26.2%</td>
</tr>
<tr>
<td></td>
<td>21 ≤ 30</td>
<td>26</td>
<td>17.4%</td>
</tr>
<tr>
<td></td>
<td>31 ≤ 40</td>
<td>16</td>
<td>10.7%</td>
</tr>
<tr>
<td></td>
<td>41 ≤ 50</td>
<td>13</td>
<td>8.7%</td>
</tr>
<tr>
<td></td>
<td>&gt;50</td>
<td>32</td>
<td>21.5%</td>
</tr>
<tr>
<td>Firm size</td>
<td>1–25</td>
<td>35</td>
<td>23.5%</td>
</tr>
<tr>
<td></td>
<td>25–49</td>
<td>11</td>
<td>7.4%</td>
</tr>
<tr>
<td></td>
<td>50–99</td>
<td>14</td>
<td>9.4%</td>
</tr>
<tr>
<td></td>
<td>100–499</td>
<td>37</td>
<td>24.8%</td>
</tr>
<tr>
<td></td>
<td>500–999</td>
<td>8</td>
<td>5.4%</td>
</tr>
<tr>
<td></td>
<td>1000–4999</td>
<td>21</td>
<td>14.1%</td>
</tr>
<tr>
<td></td>
<td>5000+</td>
<td>18</td>
<td>12.1%</td>
</tr>
<tr>
<td>Type of industry</td>
<td>Manufacturing</td>
<td>35</td>
<td>23.5%</td>
</tr>
<tr>
<td></td>
<td>Service</td>
<td>114</td>
<td>76.5%</td>
</tr>
<tr>
<td>Respondent current position</td>
<td>Owners, general managers</td>
<td>27</td>
<td>18.1%</td>
</tr>
<tr>
<td></td>
<td>Managers, directors, department heads</td>
<td>69</td>
<td>46.3%</td>
</tr>
<tr>
<td></td>
<td>Supervisors</td>
<td>22</td>
<td>14.8%</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>31</td>
<td>20.8%</td>
</tr>
</tbody>
</table>

Appendix B. Latent Constructs and Corresponding Measurement Items

<table>
<thead>
<tr>
<th>Construct and corresponding measurement items</th>
<th>SFL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental orientation</strong></td>
<td></td>
</tr>
<tr>
<td>Allocating sufficient funds for environmental improvement in an annual budget is important to our firm.</td>
<td>0.833</td>
</tr>
<tr>
<td>Top management believes in having systems for measuring and assessing environmental performance.</td>
<td>0.876</td>
</tr>
<tr>
<td>Our firm believes in training and education of environmental related issues among employees.</td>
<td>0.831</td>
</tr>
<tr>
<td>Implementing environment protection criteria in contractor selection process is important to our firm.</td>
<td>0.886</td>
</tr>
<tr>
<td>Our top management team has conviction on taking environmental actions.</td>
<td>0.910</td>
</tr>
<tr>
<td>Our firm supports research and development of environmental technologies.</td>
<td>0.817</td>
</tr>
<tr>
<td><strong>Societal orientation</strong></td>
<td></td>
</tr>
<tr>
<td>Having partnerships with community organizations dedicated to social causes is important to our firm.</td>
<td>0.798</td>
</tr>
</tbody>
</table>

References


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