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# Sustainable Supply Chain Management and the End User: Understanding the Impact of Socially and Environmentally Responsible Firm Behaviors on Consumers' Brand Evaluations and Purchase Intentions

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Past research considering environmentally and socially sustainable supply chain management practices has demonstrated that focusing solely on upstream activities of the supply chain is no longer sufficient, warranting considerations of consumer perceptions of firm behaviors within the supply chain. This article addresses this directly, offering empirical evidence indicating that sustainable supply chain management practices result in more favorable consumer brand evaluations and increased purchase intentions. This effect is operationalized through consumers' self-brand connections and cognitive dissonance such that sustainable supply chain management simultaneously increases connections between individuals and the brand but decreases the psychological discomfort associated with cognitive dissonance.

*Keywords:* *cognitive dissonance, environmental responsibility, self-brand connections, social responsibility, supply chain ethics, sustainable supply chain management, United States*

As supply chains have become increasingly global, both practitioners and consumers have placed greater emphasis on supply chain management's (SCM) ethical consequences (Ferrell et al., 2013). From a practitioner perspective, considerable benefits of sustainable SCM practices on firm bottom lines have emerged, suggesting sustainable SCM may strengthen buyer–seller relationships (Vurro et al., 2009), increase perceptions of product quality (Tate et al., 2010), improve business-to-business brand equity (Lai et al., 2010), lower production costs and increase productivity (Wagner, 2010), and increase flexibility in responding to environmental shifts (Sprinkle & Maines, 2010). All of these can result in market share gains and the ability to charge higher prices (Sprinkle & Maines, 2010).

In contrast, consumers tend to focus their attention on the harm that may be done by supply chain activities and the environmental consequences of production and sourcing of products (Ferrell et al., 2013). This growing consumer awareness of corporate social responsibility (CSR) has led firms to incorporate CSR into marketing communications (Smith et al., 2010), positioning marketing as a critical element in managing environmental and social consequences of supply chain activities (Smith et al., 2010), and making an understanding of consumer perceptions increasingly important. Interestingly, consumer criticisms of organizations for CSR failures and negative consequences of supply chain activities are often unpredictable (Palazzo & Basu, 2007; Porritt, 2005; Roberts, 2003) as little effort has been made to understand

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how and why consumers develop opinions about firms' sustainable SCM practices.

We therefore offer this article as an empirical examination considering the impact of socially and environmentally sustainable SCM practices on consumer perceptions of the firm. We propose, test, and find support for a theoretical model that connects sustainable SCM to consumers' perceptions of firms as they relate to both brand evaluations and purchase intentions. Furthermore, consumer self-brand connections and cognitive dissonance are recognized as the mechanisms through which learning of supply chain practices impacts consumer evaluations and behavioral intentions. In the next section, we outline the importance of sustainable SCM for a firm's "bottom line." We then consider the role of self-brand connections and cognitive dissonance as critical links between sustainable SCM and consumer perceptions.

## RESEARCH BACKGROUND

### Corporate Social Responsibility and Sustainable Supply Chain Management

CSR has been defined as "the adoption by a business of a strategic focus for fulfilling the economic, legal, ethical, and philanthropic responsibilities expected of it by its stakeholders" (Thorne et al., 2010, p. 4) and can be viewed as efforts of the firm to "accomplish social [and environmental] benefits along with the traditional economic gains which the firm seeks" (Davis, 1973, p. 313). The goal of CSR is to create stakeholder value by insisting on ethical standards in doing business (Hunter, 2012).

As supply chains have become globalized and stakeholders have become increasingly vocal critics of unsustainable activities, an area of research has developed examining responsible and sustainable SCM as a critical area of CSR (Maloni & Brown, 2006; Mamic, 2005). As noted by Withers and Ebrahimpour (2013), "the supply chain function is an obvious one for influencing ethics initiatives simply because the supply chain has the ability to influence virtually all the activities that would typically affect socially responsible behaviors" (p. 26).

Because sustainable SCM is a relatively new field, widely accepted, clear, and rigorous definitions of sustainable SCM are in flux. Terms such as *responsible SCM, environmental SCM, sustainable global SCM*, and *socially responsible SCM* can be found in the extant literature (Reuter et al., 2010; Seuring & Müller, 2008; Srivastava, 2007; Wang & Sarkis, 2013). The difficulty in establishing a clear definition of sustainable SCM grows from several sources. First there is a lack of a clear definition of SCM. A comprehensive study by Stock and Boyer (2009) found 173 definitions of SCM in academic literature and proposed the following consensus definition:

> The management of a network of relationships within a firm and between interdependent organizations and business units consisting of material suppliers, purchasing, production facilities, logistics, marketing, and related systems that facilitate the forward and reverse flow of materials, services, finances and information from original producer to final customer with the benefits of adding value, maximizing profitability through efficiency, and achieving customer satisfaction. (p. 708)

However, most definitions of SCM ignore an assessment of responsibility for the consequence of how profits may be maximized and consumer satisfaction created (Ferrell et al., 2013). This highlights the growing need for consideration of ethical and sustainable consequences of SCM. Second, interest in this area of SCM can be found in numerous fields, including corporate responsibility, marketing, industrial marketing, and SCM itself, with each area viewing the importance and definition of both SCM and sustainability differently (cf. Hoejmose et al., 2014). Third, efforts are being made to incorporate both the environmental and social consequences of supply chains into the overall concept of supply chain sustainability with the result that sustainability can be linked to ethical behavior and CSR by considering the organization's ability to deliver economic, environmental, and social benefits—also known as the triple bottom line (Carter & Rogers, 2008; Elkington, 1998a, 1998b, 2004; Matos & Hall, 2007; Pagell & Wu, 2009).

Markley and Davis (2007) point out that "another way to describe the sustainable organization is to say that while pursuing profit, enlightened companies should take care to protect the environment and uphold the rights of workers and other stakeholders as well" (p. 764). However, numerous authors have recognized that environmental consequences have received a great deal more attention in SCM literature than social consequences (Hoejmose & Adrien-Kirby, 2012; Hutchins & Sutherland, 2008; Miemczyk et al., 2012; Reuter et al., 2010). As a result, although careful consideration of both social and environmental concerns has become a key component of CSR and organizations' interest in maintaining good reputations (Perrini et al., 2011; Roberts, 2003), social concerns have not yet been as thoroughly studied as part of sustainable SCM.

We therefore acknowledge the, as yet, lack of a firmly agreed-upon definition of sustainable SCM. However, for the purposes of this research we use the term *sustainable supply chain management* defined as

> the strategic, transparent integration and achievement of an organization's social, environmental, and economic

> goals in the systemic coordination of key interorganizational business processes for improving the long-term economic performance of the individual company and its supply chains. (Carter & Rogers, 2008, p. 368)

## Using Sustainable Supply Chain Management for Competitive Advantage

It has become increasingly difficult for organizations to sustain competitive advantage based on product and price as competitor access to similar raw materials, customer focus on price, and rapid technological advances continue. In addition, as supply chains continue to expand globally, the number of stakeholders affected by supply chain activities has greatly increased (Reuter et al., 2010) and the risk of harmful actions done by marketers acting in the name of consumers has become more prevalent (Smith et al., 2010). As such, the supply chain is becoming an area searched for sources of competitive advantage as sustainability, stakeholder approval, and efforts to avoid negative consequences become more important (Markley & Davis, 2007) and are viewed as difficult to copy.

The interest in the consequences of sustainability efforts in supply chains continues to grow as discussed earlier and is often based on an assumption that efforts to become more sustainable will result in financial benefit. However, the results of efforts to document this assumption are mixed, even though the majority of studies show a positive relationship between sustainability and performance (Perrini et al., 2011). There is also growing evidence that strong buyer–seller relationships generate benefits through the supply chain (Vurro et al., 2009).

Positive benefits of sustainable SCM practices include the ability to encourage consumers to perceive higher product quality and an improvement in business-to-business brand equity due to environmental and social practices (Lai et al., 2010; Tate et al., 2010) resulting in market share gains and the ability to charge higher prices (Sprinkle & Maines, 2010). In addition, responsible management of social and environmental issues may strengthen shareholder relationships and a presumed license to operate (Perrini & Tencati, 2006).

Sustainable upstream supply chain practices result in lower production costs and gains in productivity may be generated by sustainable practices (Wagner, 2010), resulting in increased flexibility in responding to environmental shifts (Sprinkle & Maines, 2010). Interestingly, Wang and Sarkis (2013) have shown improvements in corporate financial performance occur only when both environmental and social SCM are implemented; Hoejmose et al. (2014) suggested that responsible SCM does not directly result in competitive advantage, but instead the desire to achieve competitive advantage drives responsible behavior.

Focus on responsible, sustainable, and ethical supply chain practices may be used as a means of reducing or avoiding the consequences of negative attention from consumers, nongovernmental organizations (NGOs), and government regulation (Hoejmose et al., 2014; Maloni & Brown, 2006; Sharma et al., 2010; Sprinkle & Maines, 2010). Markley and Davis (2007) have shown that "ignoring supply chain CSR issues may actually present companies with a greater risk, indicating it is not only an industry's ethical responsibility, but also in their financial best interest to proactively prepare a comprehensive strategy for supply chain CSR" (p. 767).

Sustainability efforts are complicated because, even though many organizations sincerely work to develop sustainable SCM, it is not uncommon for many to make sustainability claims to encourage consumer purchase although not actually engaging in sustainable actions (Hunter, 2012). Smith et al. (2010) argue that management often reacts to social and environmental concerns with "impression management" rather than actual change. As a result, there is growing evidence that such efforts may have negative results as antibrand activities, NGOs, consumers, and other stakeholders respond to the perception—or actuality—of false claims through antibrand activism (Cronin et al., 2011; Hoejmose et al., 2014).

Much of this concern is propelled by the role marketing plays in driving unsustainable supply chain activities in global environments as efforts to offer lower prices, shortened lead times, and shortened product life cycles result in environmental pollution, questionable labor practices, and corruption throughout the supply chain (Palazzo & Basu, 2007; Smith et al., 2010). Interestingly, the link between marketing and sustainability is strengthening as "growing numbers of companies are looking to emphasize their commitment to sustainability in an attempt to help to differentiate themselves from their competitors to enhance their corporate brand and reputation" (Jones et al., 2008, p. 126).

However, the evidence regarding the effect of sustainable SCM on consumer perceptions and behavior, including a clear understanding of how ethical supply chain behaviors affect consumer opinions, is lacking. Shaw et al. (2006) note an increasing number of consumers are "seeking to engage and influence the suppliers of products and services through their actions in the marketplace" (p. 1050). Further, a growing number of consumers consider the effect of their consumption choices on society (Diamantopoulos et al., 2003; Doane, 2001; Lang & Gabriel, 2005). We therefore endeavor to outline these consumer responses by proposing and empirically testing a theoretical model connecting sustainable SCM to consumer evaluations and behaviors.

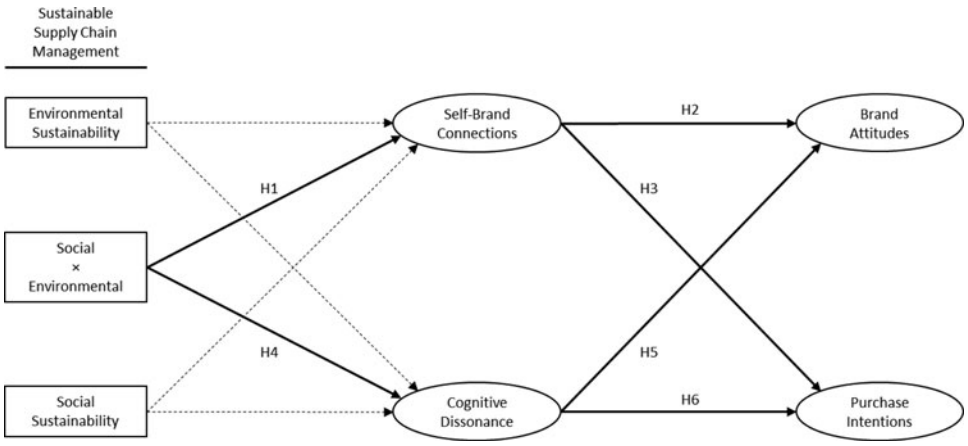


FIGURE 1 Hypothesized theoretical model. *Note:* Solid arrows represent hypothesized paths. Dashed arrows represent not hypothesized main effects of environmental and social responsibility.

## PROPOSED THEORETICAL MODEL

We expect that sustainable SCM, as it relates to social and environmental practices, will influence both consumers' brand evaluations and intended behaviors. Moreover, two mediators, namely, self-brand connection and cognitive dissonance, are proposed to play relevant roles in the development of these consumer perceptions. In the following section we detail self-brand connection and cognitive dissonance theories as they relate to the consumer's self-concept, exploring theoretical foundations through which these two mechanisms may drive consumer evaluations and behavioral intentions. (See Figure 1 for an overview of the proposed theoretical model.)

### Sustainable Supply Chain Management → Self-Brand Connections

The self is best understood as a set of organized structures defined by features, objects, categories, propositions, and schemata (Greenwald & Pratkanis, 1988). Extant research has indicated that when an object is incorporated into a self-schema that object becomes associated with the individual's self-worth (Ball & Tasaki, 1992), ultimately influencing self-concept (Escalas, 1996; Escalas & Bettman, 2003; Sprott et al., 2009) and helping individuals make sense of the relationship between themselves and their environment (Markus, 1977).

One such set of objects often used in this manner are branded artifacts and possessions. Indeed, it is widely accepted that consumers will actively form relationships with brands by incorporating them into their self-schema (Sprott et al., 2009). Moreover, the more closely a brand is linked to the self, the more meaningful the brand is to the individual (Escalas, 2004) as increased brand involvement in an individual's self-concept translates to greater self-brand connections (Escalas & Bettman, 2003).

A large body of research examining this relationship between consumers and brands has recognized that self-brand connections, themselves, can fulfill different psychological needs. For example, self-brand connections can help individuals define their self-concept (Ball & Tasaki, 1992; Escalas, 2004; Sprott et al., 2009), create connections to others (Escalas & Bettman, 2003), or maintain a positive self-image (Beggan, 1992). Moreover, greater consumer–brand relationships can lead to positive brand attitudes (Escalas, 2004; Escalas & Bettman, 2003; Sprott et al., 2009) and ultimately greater brand loyalty or even brand love (Albert et al., 2008; Carroll & Ahuvia, 2006).

The self is comprised of multiple components, each playing a different role that actively work toward varying goals (Schenk & Holman, 1980; Sirgy, 1982). Self-brand connections are formed when a brand connects to one or more components of the individual's self (Escalas, 2004). A female computer scientist, for example, may find self-brand connections with some brands based on dimensions of her self-concept related to being female (e.g., Chico's, Clinique, Tiffany), but connect with other brands based on dimensions related to being a computer scientist (e.g., Apple, Cisco, Windows).

Important to this work, one such dimension of the self-concept is the altruistic-self, indicating most individuals perceive themselves as generally moral and ethical (Aronson, 1968, 1992). We expect firms engaged in altruistic activities will align with the altruistic-self, creating congruence between positive aspects of consumers' self-concept (i.e., the altruistic-self) and positive aspects of the brand image (i.e., sustainable SCM). This congruence will foster connections between the self and the brand, allowing the individual to reinforce self-worth and bolster self-integrity related to altruistic dimensions of the self-concept (Sirgy, 1982; Steele, 1988). Stated differently, we expect exposure to altruistic brands engaging in

sustainable SCM (i.e., both socially and environmentally responsible behaviors) will result in stronger self-brand connections than brands not engaging in sustainable SCM.

Hypothesis 1: Supply chain management practices that are socially and environmentally sustainable will be more likely to create self-brand connections than supply chain management practices that are not socially or environmentally sustainable.

### Self-Brand Connections → Brand Attitudes

Among other purposes, self-brand connections are developed to help consumers achieve an active goal of constructing or reinforcing a self-concept (Escalas, 2004). Given individuals have a general tendency to hold positive predispositions toward objects that are congruent with active goals (Mandler, 1982), deeper self-brand connections are likely to result in more favorable attitudes toward the brand (Sprott et al., 2009). We therefore expect, within the context of sustainable SCM, greater levels of self-brand connections will result in more favorable brand evaluations.

Hypothesis 2: Increased self-brand connections will result in more favorable brand attitudes.

### Self-Brand Connections → Purchase Intentions

Evidence exists that indicates self-brand connections influence purchase behaviors (Escalas & Bettman, 2005). Specifically, congruity between an individual's self-concept and a brand's image influence purchase motivation such that the effect is strongest when these congruencies are between positive aspects of an individual's self-concept and the brand image (Sirgy, 1982). Returning to the altruistic-self as evidence that individuals perceive themselves as inherently moral (Aronson, 1968, 1992), associating with sustainable brands through increased purchasing may allow individuals to create, reinforce, or express a moral self-concept. We therefore expect, as it relates to sustainable SCM, greater levels of self-brand connections will result in increased purchase intentions.

Hypothesis 3: Increased self-brand connections will result in increased purchase intentions.

### Sustainable Supply Chain Practices → Dissonance

Cognitive dissonance was originally theorized as a state under which an individual simultaneously possesses two or more cognitions acting in opposition to one another (Festinger, 1957). Festinger (1957) posited that dissonance is similar to other drive states like thirst or hunger and that individuals will seek to diminish the associated discomfort. Considerable extant research has examined this theory, exploring antecedents to dissonance, outcomes of dissonance, and dissonance reduction techniques (Aronson, 1968; Aronson et al., 1962; Cooper & Fazio, 1984; Elliot & Devine, 1994; Steele, 1988; Stone & Cooper, 2001).

Common extensions of Festinger's (1957) dissonance theory consider cognitive dissonance a multistep process beginning with inconsistencies between an individual's internal beliefs and actions (Stone & Cooper, 2001). These differences arouse dissonance in the individual, resulting in psychological discomfort (Cooper & Fazio, 1984; Elliot & Devine, 1994). Dissonance motivation is then activated as a desire to relieve the discomfort, resulting in adjusted attitudes or future behaviors (Elliot & Devine, 1994; Festinger, 1957; Spangenberg et al., 2003).

The source of dissonance arousal and motivation can be either internal or external to the self (Aronson, 1968; Cooper & Fazio, 1984). Self-consistency theory, for example, posits that individuals possess a set of internal expectancies for their own ethical or competent behaviors and dissonance is therefore aroused after engaging in a behavior inconsistent with an individual's own perceived competence or moral code (Aronson, 1968; Aronson et al., 1962; Thibodeau & Aronson, 1992). Thus, dissonance reduction is a justification of the incongruent behavior aimed at restoring the individual's own sense of competence or morality (Thibodeau & Aronson, 1992).

In contrast to these internal sources of the self, extant research has indicated sources outside the self also result in psychological discomfort and the same dissonance-based outcomes (Cooper & Fazio, 1984; Jonas et al., 2003; Spangenberg et al., 2003; Waters, 2009). Spangenberg et al. (2003), for example, found exposure to external sources regarding predictions of future, but not yet transpired, actions (e.g., "Ask Yourself: Will you work out at the Student Recreation Center?", "Ask Yourself: Will you RECYCLE?") resulted in psychological discomfort that persisted for those who were not given an opportunity to reduce dissonance. Furthermore, although results indicated this effect dissipates through reaffirmation of the self-concept, the effect was magnified when individuals were exposed to a second external source of dissonant information that made no mention of past, current, or future behaviors.

Similar dissonance results have also been shown in charitable giving contexts (Waters, 2009). Specifically, when individuals learned of the 2004 tsunami that suddenly and unexpectedly devastated the Indian Ocean coastline, a state of dissonance was aroused in individuals as the disaster was inconsistent with cognitions of safety and security, resulting in psychological discomfort.

Another domain where we assume externalities may cause dissonance is that of CSR. As consumers' expectations of firms are becoming increasingly oriented around ethical and moral responsibility (Maloni & Brown, 2006; Mamic, 2005), it is possible that any information regarding a firm's behaviors that do not align with these consumer expectations will also result in psychological discomfort.

Related to our current work, we posit that one area where ethically acceptable behaviors may influence dissonance is sustainable SCM. Specifically, although cognitions regarding firms engaging in ethically and morally *acceptable* practices will be consistent with consumers' preexisting cognitions, cognitions regarding firms that engage in ethically and morally *unacceptable* practices will be inconsistent with these same preexisting cognitions. In other words, we expect that although exposure to socially and environmentally responsible companies will not arouse dissonance, exposure to socially or environmentally *irresponsible* companies will arouse dissonance and the subsequent psychological discomfort.

Hypothesis 4: Supply chain management practices that are socially and environmentally sustainable will be less likely to arouse cognitive dissonance than supply chain management practices that are not socially or environmentally sustainable.

### Dissonance → Brand Attitudes

Turning attention to dissonance reduction strategies, a considerable body of work has been dedicated to methods through which cognitive dissonance is dissipated. Evidence exists that individuals will add consonant cognitions, avoid or eliminate dissonant cognitions, or discredit dissonant information to reduce psychological discomfort through affective and conative recalibration (Jonas et al., 2003; Stone & Cooper, 2001; Waters, 2009).

As Stone and Cooper (2001) concluded, regardless of the mechanism through which dissonance is aroused, dissonance motivation is activated and psychological discomfort can be reduced through attitude change. Elliot and Devin (1994) directly examined this phenomenon through a series of empirical tests, demonstrating that dissonantly aroused individuals modify attitudes in an effort to reduce discomfort. We expect this pattern of effects to hold in cases considering sustainable SCM. Specifically, individuals under a state of cognitive dissonance should report less favorable evaluations toward the brand in an effort to reduce dissonance.

Hypothesis 5: Increased cognitive dissonance will result in less favorable brand attitudes.

### Dissonance → Purchase Intentions

Individuals have also been shown to modify behaviors to reduce psychological discomfort. Spangenberg et al. (2003), for example, demonstrated that under an induced state of psychological discomfort, individuals modified behaviors in the form of increased time donated to charitable organizations. Although this suggests dissonance results in individuals actively seeking out cognitions to reduce psychological discomfort, Festinger (1957) originally proposed dissonance would result in individuals actively avoiding cognitions to reduce discomfort. In a direct measure of confirmation bias, Jonas et al. (2003) found support for this prediction, as individuals in a dissonant state were not only more likely to actively seek out consonant information but also avoided dissonant information. We expect dissonance avoidance to continue in relation to SCM such that greater levels of psychological discomfort will lead to decreased purchase intentions.

Hypothesis 6: Increased cognitive dissonance will result in decreased purchase intentions.

## MAIN STUDY

To test this theoretical model, we conducted a structural equation analysis using participants ($N = 464$, 47% women, average age is 44 years) from the online panel Mechanical Turk. Participation was limited to those members of the pool located in the United States and individuals received financial compensation for their time.

Upon agreeing to participate in the study, individuals were randomly assigned to one of four treatment conditions representing responsible versus irresponsible supply chain practices as they relate to social and environmental responsibility. A fictitious company was described as a new market entrant that produced either expensive electronics or inexpensive clothing. Experimenters were blind to participant conditions. A comparison of results between the two product categories indicated no significant differences in results allowing the two categories to be combined for all further analysis. (See the Appendix for an example of the manipulation.)

Participants received instructions asking them to read information about the firm that described the supply chain practices as socially responsible (versus irresponsible) and environmentally responsible (versus irresponsible) depending on the randomized condition. Following reading the information, participants answered two manipulation check questions regarding the company's social and environmental responsibility orientation ("the company is very socially responsible," "the company is very environmentally responsible") on 7-point, Likert-like scales anchored from *strongly disagree* to *strongly agree*. They then answered a series of questions related

to their opinions about the company that represented the endogenous variables described in our proposed model. The items used were previously developed and validated measures for cognitive dissonance (Elliot & Devine, 1994; Spangenberg et al., 2003), self-brand connection (Escalas, 1996; Escalas & Bettman, 2003), brand attitudes (Homer, 1995; Peracchio & Meyers-Levy, 1994), and purchase intentions (Baker & Churchill, 1977).

### Manipulation Checks

An analysis of the social and environmental responsibility manipulations was conducted before analysis of the structural equation model. Results indicated a successful manipulation such that individuals in the socially responsible condition rated the company as significantly more socially responsible ($M = 6.06$) than individuals in the socially irresponsible condition ($M = 1.97$; $t(480) = 34.01$, $p < .001$). Similarly, individuals in the environmentally responsible condition rated the company as significantly more environmentally responsible ($M = 6.00$) than individuals in the environmentally irresponsible condition ($M = 2.06$; $t(475) = 30.29$, $p < .001$).

### Measurement Model

The proposed model and hypotheses were tested using a three-step structural equation modeling technique. First, the measurement model was evaluated. An assessment of the measurement model showed the model was overidentified, and although initial results of the measurement model showed acceptable global fit ($\chi^2(155) = 676.242$, $p < .001$; Confirmatory Factor Analysis (CFI) = .966; Root Mean Square Error of Approximation (RMSEA) = .085; Standardized Root Mean Residual (SRMR) = .034), an evaluation of modification indices indicated that allowing some items to correlate within constructs offered a more acceptable global level of fit ($\chi^2(102) = 319.054$, $p < .001$; CFI = .985; RMSEA = .068; SRMR = .025). As can be seen in Table 1, all items loaded on their respective constructs at acceptable levels (all loadings > .87).

Construct and discriminant validity were then evaluated using Cronbach's alpha (α) and average variance extracted (AVE). As shown in Table 1, construct validity was achieved through acceptable alpha levels (.96 to .99). Discriminant validity was also achieved as the square root of the average shared variance that could be potentially explained by any given underlying construct was less than the correlation between the given construct and any other construct (Fornell & Larcker, 1981). (See Table 2 for the construct correlations and AVE.)

### Model Testing

Next, an assessment of the structural model showed the model was overidentified. This, combined with the overidentification of the measurement model, showed the overall structural regression model was also overidentified.

To examine the proposed model, dummy variables were created for the social and environmental responsibility manipulations and their interaction term was calculated. The complete model included the social and environmental responsibility main effects (not hypothesized) and the hypothesized interaction as predictors for self-brand connections and cognitive dissonance. Self-brand connections and cognitive dissonance were then

TABLE 1
Construct Items and Respective Loadings

| Items | Loading | *SE* | α |
|---|---|---|---|
| Cognitive dissonance | | | .98 |
| I am bothered by the firm's actions. | .982 | .002 | |
| I am uncomfortable with the firm's actions. | .951 | .005 | |
| I am uneasy with the firm's actions. | .986 | .002 | |
| Self-brand connections | | | .98 |
| Brand X reflects who I am. | .942 | .006 | |
| I can identify with Brand X. | .921 | .008 | |
| I feel a personal connection to Brand X. | .945 | .006 | |
| I (can) use Brand X to communicate who I am to other people. | .919 | .008 | |
| I think Brand X (could) help(s) me become the type of person I want to be. | .917 | .008 | |
| I consider Brand X "me" (it reflects who I consider myself to be or the way that I want to present myself to others). | .934 | .006 | |
| Brand X suits me well. | .924 | .007 | |
| Brand attitudes | | | .99 |
| Unfavorable–Favorable | .976 | .002 | |
| Bad–Good | .984 | .002 | |
| Dislike–Like | .985 | .002 | |
| Negative–Positive | .950 | .005 | |
| Purchase intentions | | | .96 |
| Would you like to try this product? | .959 | .005 | |
| Would you buy this product if you happened to see it in a store? | .956 | .005 | |
| Would you actively seek out this product in a store in order to purchase it? | .917 | .008 | |

*Note*: All loadings are significant at $p < .001$.

TABLE 2
Construct Correlations and Average Variance Extracted

| Construct | AVE | CD | SBC | BA | PI |
|---|---|---|---|---|---|
| Cognitive dissonance (CD) | .95 | **.97** | | | |
| Self-brand connection (SBC) | .86 | −.71 | **.93** | | |
| Brand attitudes (BA) | .95 | −.86 | .77 | **.97** | |
| Purchase intentions (PI) | .91 | −.81 | .81 | .92 | **.95** |

*Note*: Bold numbers on the diagonal are the square root of the average variance extracted (AVE). All correlations are significant at $p < .001$.

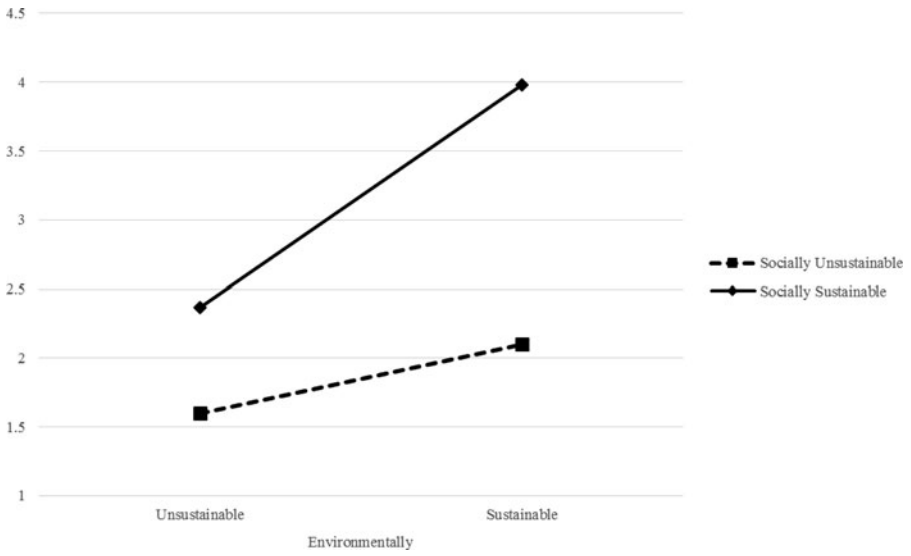


FIGURE 2 The impact of sustainable social and environmental supply chain management practices on self-brand connections.

used to predict brand attitudes and purchase intentions. The model demonstrated strong global fit ($\chi^2(147) = 472.770$, $p < .001$; CFI = .979; RMSEA = .069; SRMR = .034). All parameter estimates were significant at $p < .001$ and $R^2$ was at acceptable levels for all endogenous variables.

An examination of our hypotheses indicates the model received very good support. Supporting Hypotheses 1 and 4, respectively, ethical considerations of social and environmental responsibility in the supply chain affected individuals' self-brand connections (β = .211, $SE = .035$, $p < .001$) and cognitive dissonance arousal (β = −.258, $SE = .031$, $p < .001$), controlling for main effects of social and environmental responsibility. This was followed by simple slope contrasts considering the impact of social and environmental responsibility on each of the two variables. Results indicated individuals who perceived the firm to be both socially responsible and environmentally responsible were more likely to form self-brand connections ($M = 3.98$, $SD = 2.51$) than individuals who perceived the firm to be socially responsible but environmentally irresponsible ($M = 2.37$, $SD = 1.30$; $F(1, 460) = 57.46$, $p < .001$). Moreover, individuals who perceived the firm to be both socially irresponsible and environmentally irresponsible were less likely to form self-brand connections ($M = 1.61$, $SD = .99$) than individuals who believed the firm was socially irresponsible but environmentally responsible ($M = 2.10$, $SD = 1.21$; $F(1, 460) = 5.16$, $p < .05$) as shown in Figure 2.

Considering cognitive dissonance arousal, results indicated individuals who perceived the firm to be both socially responsible and environmentally responsible were less likely to report cognitive dissonance arousal ($M = 1.42$, $SD = 3.06$) than individuals who perceived the firm to be socially responsible but environmentally irresponsible ($M = 4.71$, $SD = 1.71$; $F(1, 460) = 143.11$, $p < .001$). Individuals who perceived the firm to be both socially irresponsible and environmentally irresponsible were more likely to report cognitive dissonance arousal ($M = 5.86$, $SD = 1.27$) than individuals who believed the firm was socially irresponsible but environmentally responsible ($M = 5.02$, $SD = 1.72$; $F(1, 460) = 8.84$, $p < .01$) as shown in Figure 3.

Consistent with predictions, self-brand connections resulted in more favorable brand attitudes (β = .369, $SE = .033$, $p < .001$) and increased purchase intentions (β = .538, $SE = .034$, $p < .001$), controlling for cognitive dissonance. These results support Hypotheses 2 and 3, respectively. Supporting Hypotheses 5 and 6, cognitive dissonance arousal resulted in less favorable brand attitudes (β = −.585, $SE = .032$, $p < .001$) and decreased purchase intentions (β = −.410, $SE = .035$, $p < .001$), controlling for self-brand connections. (See Table 3 for a summary of the model and loadings.)

Although not specifically hypothesized, a bootstrap simulation consisting of 10,000 estimations indicated the indirect effect of the social and environmental responsibility interaction on brand attitudes through self-brand connection (β = .078, 99% CI [.037, .119]) and cognitive dissonance arousal (β = .151, 99% CI [.101, .200]) were significant. The indirect effect of the social and environmental responsibility interaction on purchase intentions through self-brand connections (β = .113, 99% CI [.059, .167]) and cognitive dissonance arousal (β = .106, 99% CI [.067, .144]) were also significant. An overview of the indirect effects can be found in Table 4.

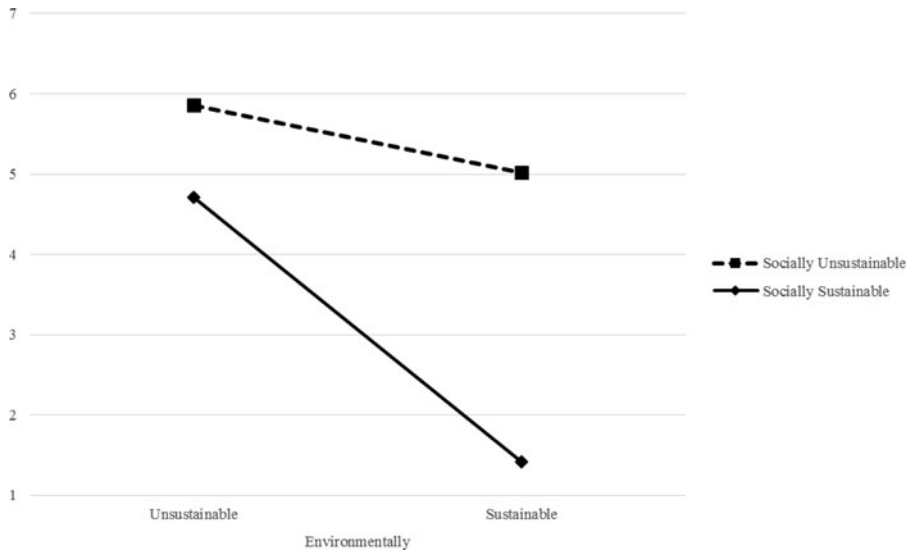


FIGURE 3 The impact of sustainable social and environmental supply chain management practices on cognitive dissonance.

## DISCUSSION

As supply chains are becoming globalized and stakeholders are becoming increasingly vocal critics of unsustainable activities, an area of CSR research has developed examining responsible and sustainable SCM (Maloni & Brown, 2006; Mamic, 2005). Withers and Ebrahimpour (2013), for example, recognize the role of the supply chain as "an obvious one for influencing ethics initiatives simply because the supply chain has the ability to influence virtually all the activities that would typically affect socially responsible behaviors" (p. 26). Social and environmental concerns have therefore become a key component of sustainable SCM for organizations interested in maintaining positive reputations with consumers (Perrini et al., 2011; Roberts, 2003).

Although efforts are being made to incorporate both the environmental and social consequences of supply chains into the overall concept of supply chain sustainability, little research has directly measured the impact of CSR and sustainable SCM on consumer perceptions and behaviors. In this article we therefore offered empirical evidence designed to address this current gap in the literature.

Results indicated considerations of social and environmental responsibility in the supply chain simultaneously affect individuals' connection to the brand and activate psychological discomfort associated with cognitive dissonance. Furthermore, increased self-brand

TABLE 3
Direct Path Loadings

| Direct paths | Hypothesis | β | *SE* | *p* |
|---|---|---|---|---|
| Social (S) and environmental (E) responsibility → Self-brand connections (SBC) | | | | |
| S → SBC | | .483 | .003 | <.001 |
| E → SBC | | .373 | .034 | <.001 |
| S × E → SBC | Hypothesis 1 | .211 | .035 | <.001 |
| Social (S) and environmental (E) responsibility → Cognitive dissonance (CD) | | | | |
| S → CD | | −.525 | .029 | <.001 |
| E → CD | | −.458 | .030 | <.001 |
| S × E → CD | Hypothesis 4 | −.258 | .031 | <.001 |
| SBC → Brand attitudes | Hypothesis 2 | .369 | .033 | <.001 |
| SBC → Purchase intentions | Hypothesis 3 | .538 | .034 | <.001 |
| CD → Brand attitudes | Hypothesis 5 | −.585 | .032 | <.001 |
| CD → Purchase intentions | Hypothesis 6 | −.410 | .035 | <.001 |
| Variance accounted for | | $R^2$ | *SE* | *p* |
| Cognitive dissonance | | .581 | .030 | <.001 |
| Self-brand connections | | .438 | .035 | <.001 |
| Brand attitudes | | .801 | .017 | <.001 |
| Purchase intentions | | .786 | .019 | <.001 |

TABLE 4
Indirect Path Loadings

| Indirect paths | β | Lower 99% CI | Upper 99% CI |
|---|---|---|---|
| S × E → CD → Brand attitudes | .151 | .101 | .200 |
| S × E → SBC → Brand attitudes | .078 | .037 | .119 |
| S × E → CD → Purchase intentions | .106 | .067 | .144 |
| S × E → SBC → Purchase intentions | .113 | .059 | .167 |

*Note*: S indicates social responsibility; E indicates environmental responsibility; CD indicates cognitive dissonance; SBC indicates self-brand connection; CI indicates confidence interval.

connections positively affected consumers' brand evaluations and purchase intentions, controlling for cognitive dissonance. In contrast, increased cognitive dissonance resulted in less favorable brand evaluations and lower purchase intentions, controlling for self-brand connections.

These results appear to be consistent with considerations of the self and the myriad goals associated with the self-concept. Recognizing that individuals are motivated to maintain and present a positive self-concept (Aronson, 1968, 1992), it is reasonable to expect that individuals would be psychologically uncomfortable with, and less connected to, firms that engage in unethical SCM practices. When presented with information regarding socially and environmentally appropriate firm behaviors, however, it appears consumers may be drawn to these firms through affective and conative connections in an attempt to bolster the self, enforcing a positive self-concept.

Our study offers multiple implications for both supply chain managers and marketing practitioners. First, engaging in socially and environmentally responsible behaviors is valued by consumers as it results in favorable brand evaluations and increased intent to purchase products. This indicates that investments in sustainable SCM may not only offer positive social and environmental returns but also positively affect financial returns through increased sales.

Second, individuals participating in the study reported greater connections to the fictitious firm when they believed the firm engaged in socially and environmentally sustainable practices. Although the present results indicate more favorable evaluations and increased purchase intention, extant research has also indicated strong self-brand connections may lead to brand loyalty resulting in repeat purchasing and positive word of mouth (Sprott et al., 2009). It appears, therefore, that investments in sustainable SCM may also result in brand loyalty or even brand love (Albert et al., 2008), further benefiting the financial bottom line.

In contrast, unethical SCM practices resulted in consumer psychological discomfort. Therefore in response to negative consumer reactions to unethical supply chain practices, practitioners may benefit from marketing campaigns directed at minimizing individuals' discomfort, including explaining steps taken to fix unethical practices or justifying unethical behaviors in a manner that addresses and attempts to minimize this discomfort.

Finally, practitioners interested in increasing firm perceptions may be able to promote sustainable SCM to increase sales, although firms that do not actively engage in sustainable SCM practices should avoid drawing attention to their supply chain. Using a credible, external source to describe and praise (or criticize) the fictitious firm's sustainable SCM behaviors resulted in a successful manipulation of consumer perceptions of the firm. This indicates firms interested in promoting sustainable SCM practices should seek external sources of praise such as public relations campaigns and sustainability awards and similar recognition.

This implication regarding praise comes with a limitation of the present research, however, as manipulations of the information source were not directly tested. Future research could consider different source characteristics that may affect consumer perceptions. For example, a referent, but not authoritative source, may activate social norms, ultimately moderating the impact of sustainable SCM on brand evaluations and purchase intentions. Similarly, persuasion knowledge may be activated when sustainable SCM claims originate from the firm, reducing or reversing the impact of sustainable SCM on evaluations and behavioral intentions (Friestad & Wright, 1994).

A second limitation is the use of only one source of cognitive dissonance arousal. Recognizing cognitive dissonance can be aroused through internal inconsistencies between individual beliefs and behaviors (Cooper & Fazio, 1984), it is possible arousal may occur if consumers learn post purchase the firm is socially or environmentally irresponsible. It is also possible that the nature of unethical behavior may influence cognitive dissonance arousal, including the portion of the process / product (e.g., one component of an otherwise ethically developed device), the time that unethical behaviors occur (e.g., before the firm takes ownership of the goods), or expectations of firm control over the behaviors (e.g., to what extent consumers hold a company responsible for problems in the supply chain). Future examinations of sustainable SCM could include these or other considerations of the source of—and conditions required for—cognitive dissonance arousal.

A final direction for future research exists through considerations of the self-brand connection. Existing self-brand connections, for example, may moderate the impact of sustainable SCM on consumer perceptions such that existing self-brand connections may override the negative consequences of unethical supply chain practices. Anecdotal evidence of this exists with Apple as it has benefited from strong self-brand connections and brand loyalty even after possible unethical situations and / or unethical events in its supply chain have been reported (Duhigg et al., 2012). It is also possible that a price point may exist where unethical behavior is no longer considered, as a better understanding of how much consumers are willing to "pay" for ethical behavior may be directly related to self-brand connection.

## CONCLUSION

Considerable extant research has examined the impact of ethical SCM on supply chain activities. Although there is still much to be understood regarding the impact of

sustainable SCM, it is clear that it is no longer sufficient to focus solely on upstream activities of the supply chain: the consequences of consumer perceptions of firms' ethical sustainability efforts—both environmental and social—throughout the entire supply chain must also be considered. This article addresses this topic directly, offering initial support for the position that by fostering connections between individuals and brands and minimizing consumers' psychological discomfort, sustainable SCM may result in increased firm financial performance through more favorable consumer brand evaluations and increased purchase intentions.

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## APPENDIX

### Example of Social and Environmental Responsibility Manipulation for Socially Responsible and Environmentally Irresponsible Electronics Firm

In this survey we are interested in your initial opinions toward the manufacturing practices of a new company named ParaWorks Electronics. ParaWorks is currently in select U.S. electronics markets, but has aggressive plans to expand to a national level.

Recently, a considerable amount of media and consumer attention has been given to ParaWorks Electronics manufacturing practices. These reviews indicate that ParaWorks is simultaneously very socially responsible and environmentally irresponsible.

We would like for you to read an excerpt from a newspaper article that describes the nature of ParaWorks social and environmental activities. The quote is from Mark Taylor, Director of the American Center for Socially and Environmentally Responsible Manufacturing, and was taken from "Manufacturing Responsibility," published in *The New York Times* on September 14, 2014.

From "Manufacturing Responsibility" (*The New York Times*, September 14, 2014):

> "As a new electronics company, ParaWorks' actions make it immediately clear that behaving in a socially responsible manner is very important to them. Among other practices, their excellent worker conditions and fair worker wages offer a template for how companies should behave regarding socially responsible manufacturing."
>
> Taylor continues, "Amazingly, this is matched with their lack of dedication to environmentally responsible behaviors. ParaWorks' complete disinterest in minimizing excess production waste and their inability to control their carbon footprint instantly makes them a disgrace to environmentally responsible manufacturing."

Mark Taylor, Director of the American Center for Socially and Environmentally Responsible Manufacturing.