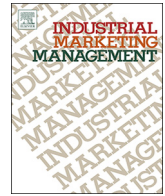




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Research paper

Sustainably superior versus greenwasher: A scale measure of B2B sustainability positioning

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A B S T R A C T

Business-to-business (B2B) buyers are finding it increasingly difficult to judge the true sustainability of supply chain partners (Oruezabala & Rico, 2012). Yet three-quarters of buyers in the OECD report they will dismiss potential supply chain partners who fail to meet sustainability criteria (Pierre, 2008). B2B firms then, cannot afford any confusion over their sustainability practices and positioning. Unfortunately, there are no sustainability positioning measures for firms to assess this, and there is no agreed upon operationalization of a highly sustainable firm vs a weakly sustainable firm. As such, this research creates a B2B sustainability positioning scale and taxonomy. First, interviews with buyers and marketing managers determine perceptions of supplier sustainability practices and defines B2B levels of sustainability. Second, exploratory and confirmatory scale development studies are conducted with 578 experienced industrial buyers. The resulting B2B sustainability positioning scale shows that a sustainably superior positioning for B2B addresses five key factors: (1) sustainability credibility, (2) concern for environmental impact, (3) a careful consideration of stakeholders, (4) resource efficiency, and (5) a holistic philosophy. This scale is intended as a tool to help B2B marketers understand and better leverage their sustainability practices and communications around sustainability.

“We’re trying to be cleaner and greener: We recycle waste and switch things off. We use paper from responsibly managed forests whenever possible. We ask our printers to actively reduce waste and energy consumption. We check out our suppliers’ working conditions...”

– The back jacket of books from DK Publishers, 2018.

1. Introduction

How a firm's sustainable practices and operations are managed and articulated is becoming an increasingly important part of business-to-business (B2B) marketing and communications strategy. Yet B2B green marketing is little understood, and buyers in decision making units remain uncertain of the level of sustainable attributes in the goods and services they buy in the supply chain (Earl & Clift, 1999; Oruezabala & Rico, 2012). With firms increasingly needing to meet ISO standards as a minimum requirement for trade, it becomes more difficult to differentiate the “strongly” sustainable from the “weakly” sustainable. Yet there is no way for marketers to assess their B2B sustainability positioning. This research first sets out to provide clearer operationalization of the levels of sustainability. Secondly, it develops a B2B sustainability positioning scale so marketers can assess and more clearly articulate their B2B sustainability positioning.

Organizations that practice sustainability do not necessarily practice green marketing and clearly communicate their sustainable efforts in the supply chain. On the other hand, organizations that practice green marketing may not necessarily practice sustainability (Simula, Lehtimäki, & Salo, 2009). The resulting lack of clarity on what defines “green” or “sustainable” practices indicates that business buyers can be

uncertain if firms in their supply chain are truly acting sustainably in their practices or are “greenwashing” (i.e., using pro-environmental buzzwords in marketing communications without embracing sustainably superior activities; Simula et al., 2009). In this way, buyers are finding it increasingly difficult to judge the true sustainability of suppliers (Oruezabala & Rico, 2012). Yet, as the OECD shows, three-quarters of buyers report they will dismiss potential supply chain partners who fail to meet sustainability criteria (Pierre, 2008). Any confusion over sustainability practices and positioning can cost B2B firms.

Sourcing of environmentally sustainable suppliers has emerged as a chief determinant of buyers' sustainable marketing strategy. In some cases sustainable suppliers can signal more sustainable positioning than the buying firms' own environmental resource management efforts (D'Souza, Taghian, Sullivan-Mort, & Gilmore, 2015). Brand conscious buyers use thorough information search and careful decision making processes (Mudambi, 2002), indicating that highly sustainable brands must accurately and effectively convey information about their practices. Yet it remains unclear precisely how marketers articulate a highly sustainable B2B brand.

This research aims to fill this gap by operationalizing the levels of sustainability and developing a B2B sustainability positioning scale.

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The scale is a tool to help B2B marketers assess and leverage sustainability practices and communications. Such a tool is key to a firm's ability to understand perceptions of the level of sustainability of its B2B brand in the marketplace. This kind of assessment provides awareness of needed changes in both physical processes and marketing communications. Any changes to a B2B brand should aim to ensure buyer perceptions align with real practices, and avoid a “greenwashing” image of questionable sustainability. Sustainability involves three interrelated areas, which each seek to ensure long-term wellbeing and outcomes for (1) a company's financial and economic performance, (2) the people and consumers its outputs touch, and (3) the environment and planetary resources (Elkington, 1997). Firms that achieve sustainability based superiority have measures in place to protect all three of these areas. They likewise tend to have a strategic focus on mitigating or improving environmental resource impact, that is, green practices.

The ISO14000 family of international environmental management standards provides legitimacy to the sustainability claims of a B2B firm. However, these standards are increasingly being adopted, and are at risk of losing their ability to provide differentiation for suppliers (Chan, He, & Wang, 2012). To address this, Kumar and Christodoulou (2014) find that differentiation through sustainability branding leads to synergistic benefits including competitive advantage. Branding occurs through brand associations in advertising, packaging and promotional materials. As such, these brand associations, and their entire impact on sustainable positioning, need to be carefully monitored. Yet there is currently no scale measure for businesses' level of sustainability positioning or progress. Previous research into B2B sustainability branding uses ad hoc scales that do not consider the holistic view of sustainability and, importantly, do not consider buyers' perceptions alongside the literature in their development.

The present work seeks to answer two key research questions, motivated by the emerging marketplace dynamics around buyer and supplier expectations of a B2B firm's sustainable positioning (Pierre, 2008; Chan, He, Chan, & Wang, 2012). First, how do B2B buyers perceive the sustainability of their supply chain partners? And second, how can B2B marketers more clearly assess and articulate their own sustainability positioning?

In study 1, exploratory interviews with marketing managers in New Zealand who work with chemicals in manufacturing reveal the existence of five factors that determine how a firm's sustainable positioning is perceived in the B2B marketplace. Study 2a and 2b next develop and validate a scale measure of B2B sustainability positioning with 578 experienced U.S. B2B buyers. They are based on study 1 results and the literature. The scale is a tool intended to help B2B marketers understand and strategize their sustainability branding. The exploratory (study 2a) and confirmatory (study 2b) scale development studies confirm and generalize the construct of B2B sustainability positioning. The resulting scale measure shows that for a firm to position itself as being sustainably superior, it must address five key factors: (1) sustainability credibility, (2) concern for environmental impact, (3) a careful consideration of stakeholders, (4) resource efficiency, and (5) a holistic philosophy of sustainability.

This research contributes to the literature on B2B advertising, branding, sustainability, and marketing management. It addresses the practical challenges and confusion around B2B sustainability positioning. Lastly, it helps firms better assess and leverage their green practices and sustainability perceptions. Importantly, this work provides theoretical development and expansion on definitions of what it means for an organization to be seen as either more or less sustainable. B2B firms can implement sustainability in many different areas of their organization and supply chain. Previous definitions, however, did not provide an understanding of how they were viewed if only implementing some, but not all, sustainable practices. Sustainability is a journey that an organization begins and works towards, yet may or may not communicate effectively or transparently to its stakeholders in the process. This research expands on the specific activities, behaviours and

beliefs that are perceived as attributing to a firm's level of sustainability among its supply chain partners. It further helps firms to operationalize these findings by providing them with a scale to measure their current positioning. This also helps B2B firms identify areas for improvement in supply chain partner perception through practical sustainability initiatives and associated marketing communications.

2. Theoretical background

2.1. 2.1 The role of sustainability marketing in B2B

Sustainability involves the ability of firms to “meet the needs of the present without compromising the ability of future generations to meet their needs” (United Nations, 1987, p. 43). Sustainability in business takes a holistic approach by incorporating three dimensions: Environment, society, and economy. By supporting the triple bottom line (Elkington, 1997), sustainability practices encourage economic fertility while supporting and even advocating for environmental and societal issues. Many firms are beginning to develop and implement sustainable marketing strategies in response to political, social, and particularly competitive forces driven by marketplace demand.

Sustainability marketing, also known commonly as “green marketing,” unlocks more profit and competitive advantage for firms in the supply chain. But sustainability marketing efforts are, overall, lax and underutilized. Tools designed to help B2B firms assess their sustainability positioning to build better practices and stronger marketing communications are few and far between. The benefits of environmentally sustainable supply chain management practices include increased revenue because of product differentiation (Amber & Lanoie, 2008), and increased profit due to competitive advantage (Chiou, Chan, Lettice, & Chung, 2011; Engardio, Capell, Carey, & Hall, 2007; Russo & Fouts, 1997; Vachon & Klassen, 2008). Overall, corporate performance with regards to return on investment, earnings growth, sales growth and market share are also positively affected by incorporation of environmental aspects in both the short term (Chan, He, Chan, & Wang, 2012; Hart, 1995; Judge & Douglas, 1998; Sharma & Vredenburg, 1998) and the long term (Alvarez, Jimenez, & Lorente, 2001). Additionally, on the buyer side, sustainability based purchasing decreases costs through decreasing waste (Amber & Lanoie, 2008; Min & Galle, 1997) and reduces legal risks of violating environmental regulations (Bansal & Roth, 2000; Hall, 2000), as well as enhancing corporate reputation (Chan, 2005).

In order to achieve competitive advantages, however, sustainably superior B2B firms must clearly and consistently communicate their sustainability practices. The literature shows they may not be doing so in an effective and efficient manner. Sustainability marketing acts as an instrument which aims to truthfully promote and inform stakeholders about the company's environmentally sustainable activities and shape their perceptions of sustainability (Peattie & Charter, 2003). Such marketing aims to help a company showcase its sustainable positioning. This helps to “align internal organizational processes and organize resources that create value for stakeholders (owners, shareholders, employees, value chain partners) and through which the external natural environment and social environment are enriched by the activities of the firm” (Arnould & Press, 2011, p 197–198). Such efforts include not merely examining how a product is made, but also how it is distributed and in what packaging, how it is sold, maintained, and repaired, and the manufacturer's level of resource efficiency as the product was created.

The problem for marketing managers in industry is clear, though. Sustainability marketing is largely applied to business-to-consumer (B2C) organizations, yet is less considered and less practiced among B2B firms (Chamorro, Rubio, & Miranda, 2009; Sharma, Gopalkrishnan Iyer, Mehrotra, & Krishnan, 2010). That is surprising given that the predominant marketing activities which result in consumption occur in the B2B environment (Pujari, Peattie, & Wright, 2004), with the most

significant use of environmental resources in the production and manufacturing of goods in the B2B supply chain (Drumwright, 1994; Morton, 1996; Peattie & Charter, 2003). Environmental performance has likewise become a key buying criterion for business buyers (Peattie, 1992; Polonsky, Broks, & Henry, 1998; Pujari et al., 2004). Business buyers are even more likely to push for sustainability based product attributes than end-customers when purchasing a product (Kärnä & Heiskanen, 1998). However, although buyers are known to emphasize environmentally responsible practices in their transactions with manufacturers (Pierre, 2008; Sharma et al., 2010), often, they do not clearly understand their environmental or social attributes. In complex B2B supply chains, business buyers miss information or there can be a lack of clear B2B marketing communications about the manufacturer's level of sustainability. Thus buyers often rely on their own perceptions of the level of sustainability of their supply chain partners (Chamorro et al., 2009; Simula et al., 2009).

The problems created by unclear or absent sustainability marketing efforts in the supply chain multiply by the number of supply chain partners involved. For instance, B2B buyers develop their own perceptions about what is environmentally or socially sustainable, though manufacturers are often not privy to these perceptions (Iles, 2006; Peattie & Ratnayaka, 1992). In the \$6 billion automotive paint supply chain, B2B buyers seeking sustainable paints face high information costs and must search for sustainability and outcome performance data on the paints. They may have varying levels of awareness and/or knowledge about toxicity, impact on environment, human societies, and resource use (Iles, 2006). Thus, automotive paint suppliers that understand their buyers' perceptions of and needs for sustainability are at an advantage. This is because they can better inform, innovate and develop sustainable solutions through sustainability marketing communications and practices (Iles, 2006). A tool to help measure this process is the first step to stronger sustainability marketing strategy and practice.

When developing a sustainability marketing strategy, business buyers' perceptions about environmental and social sustainability are thereby of utmost importance to a supplier. Simula et al. (2009) provide a framework which includes both buyer perceptions and manufacturer reality with regards to sustainability (see Fig. 1). For instance, with a high use of influential marketing but low actual sustainability, the product or service is deemed as being “greenwashed,” disappointing buyers. Greenwashing can be difficult to clearly pinpoint in the supply chain. However groups such as the Greenwashing Index and the Sustainable Business Council document that greenwashing occurs “when a company or organization spends more time and money claiming to be ‘green’ through advertising and marketing than actually implementing business practices that minimize environmental impact” (EnviroMedia Social Marketing, 2018). For instance, U.S. retailer Walmart has touted its increasing use of renewable energy and installed solar panels on its stores. However, if its true emissions were considered (e.g. via its supply chain, which included building new stores, manufacturing products and international shipping), renewable energy powered < 5% of

its operations (Fried, 2013; Mitchell, 2013). Even as Walmart pushes for more renewable energy among its supply chain, however, the company's reputation for less positive labour tactics further impacts its sustainability positioning (i.e., Abrams, 2017). Other classic greenwashing examples include the state of California's investigation into oil and energy supplier Exxon Mobile in 2016 for misleading buyers about the level of climate impact of its oil exploration and drilling (Penn, 2016). The U.S. Federal Trade Commission has also enforced sanctions against a wet wipe manufacturer which claimed in promotional material to retail partners, without substantiation, to be flushable and safe for sewer and septic tanks (Federal Trade Commission, 2015).

Yet as Fig. 1 shows, the ultimate aim of clearly communicating sustainable superiority products can be reached with authentic sustainability and use of sustainability marketing practices. When there is both a high level of actual sustainability and a high level of perceived sustainability, this means that the product is sustainable and its marketing correctly touts its level of sustainability (Simula et al., 2009).

There is room in the B2B marketplace for products and services that are not sustainable, as Fig. 1 shows. An honest non-sustainable product emerges when the manufacturer and business buyer agree that the manufacturer's environmental sustainability is low to non-existent. Finally, however, Fig. 1 reveals that a missed opportunity product shows high actual sustainability. However, such sustainability is not valued by business buyers due to a lack of awareness and thus low perception of environmentally sustainable product benefits. Manufacturers and suppliers in this category thus miss out on a strategic opportunity to effectively market their products to business buyers. This is where clear and consistent sustainability marketing will have the greatest impact for B2B suppliers with actually sustainable practices and products. Those firms attempt to reach B2B buyers with a clear need for sustainably superior products. This tantalizing “missed opportunity” quadrant in Fig. 1 is what drives the present research. Many firms beginning to adopt and implement sustainability processes might find themselves in that quadrant. This research aims to develop a scale measure and tool to help those firms better assess and articulate their emerging B2B sustainability positioning.

2.2. Sustainability positioning in B2B marketing communications

Any attempt at sustainability positioning via marketing communications can become a conduit or “working infrastructure” in the supply chain (Finch, Horan, & Reid, 2015). This makes the role of marketing communications central in sustainability strategy. B2B exchanges are shaped by conduits such as marketing communications around environmentally and socially sustainable practices. Communications build demand for sustainable products and services and, importantly, spread risks and costs across the supply chain. Risks such as investing in potentially costly modifications and sustainable practices are key to allow the manufacturing process to continue. Marketing communication is in fact a linear support system for eco-innovations. Environmental innovations can be welcome in the marketplace, yet they must be supported by clear sustainable marketing communications to customers or the innovations are at risk (Zauskova, Bezakova, & Grib, 2015). In Finch et al.'s (2015) framework, marketing communications around sustainability practices allow for multiple actors in the supply chain to affirm interdependence, and contest and further develop shared practices in sustainable facilities and services (i.e., more community-centred, more resource-efficient, and less wasteful).

Effective sustainability marketing communications efforts rely on a clear understanding of a B2B firm's positioning. Positioning is the place a B2B brand occupies in the minds of its clients and buyers, most notably grounded in perceptions of buyers (Sorgor, 2012). Perceptions about sustainability can be absent or present, correct or incorrect. This depends on buyers' levels of knowledge and awareness of products and services' sustainability features. As Earl and Clift (1999) find, defining sustainability can be a problem for business buyers. Confusion over

BUSINESS BUYER Perception of manufacturer's sustainability	high	A “green washed” product	Sustainable superiority
	low	An honest, non-sustainable product	Missed opportunity/strategic choice
		low	high
		MANUFACTURER Actual sustainability	

Fig. 1. The Sustainability Matrix (adapted from Simula et al., 2009).

environmentally sustainable practice definitions weakens the effectiveness of sustainability marketing strategy. This is because business buyers might not clearly understand the content and meaning of sustainability based product features. Concerns about how to measure performance of environmentally friendly products and services can further influence buyers (Earl & Clift, 1999). Importantly, sometimes environmental performance is weighted more heavily by a buyers' stakeholders. As in the case of a firm's waste management contractor selection, suppliers with better cost efficiencies were less preferred than those with higher overall environmental performance outcomes (Earl & Clift, 1999). Yet inconsistent communication or misunderstanding over environmental performance indicators have clear costs to such suppliers. This lack of understanding or lax ability to articulate how high or low sustainability is defined drives this research. This research was also motivated to view sustainability positioning from both the manufacturers' and business buyers' perspective.

To further complicate consideration of buyer perceptions in sustainability positioning, a B2B firms' sustainability marketing efforts may be present or absent, and correct or incorrect as well. As Fig. 1 indicates, firms may use sustainability marketing and practice actual sustainability in conjunction, separately, or not at all.

In order to link sustainability practices and sustainability marketing, manufacturers must define and understand the environmental and socially sustainable features of their products. Manufacturers often may not understand what business buyers evaluate as sustainability features of their offerings (Iles, 2006; Peattie & Ratnayaka, 1992). Thus, tools for B2B brand assessment of sustainability positioning must include business buyer's opinions and perceptions to ensure a match with reality (Peattie, 1992; Simula et al., 2009). Importantly, previous scales to measure sustainable branding are ad hoc and not well grounded in theory and practice (e.g., Hartman, Ibáñez, & Sainz, 2005; Nyilasy, Gangadharbatla, & Paladino, 2014). They generally only include environmental sustainability instead of all three areas of sustainability (e.g., Banerjee, 2001; Chen, 2010; Fraj, Martinez, & Matute, 2013; Menon & Menon, 1997). Finally, they do not take into consideration buyer perceptions of high versus low levels of sustainability. The scale development undertaken in this research addresses these issues.

B2B organizations must understand what composes high or low sustainability for the buyers and clients in their supply chains to match business buyers' and supply chain expectations. Simula et al. (2009) provide approaches for a B2B organization combining sustainability and sustainability marketing with their products. However, they do not define factors that form high or low sustainability in detail, rendering their sustainability matrix (Simula et al., 2009) difficult to implement. This study seeks to explore sustainability factors through the manufacturers' and business buyers' perspectives to further define the areas and inform development of a scale measure of B2B sustainability positioning. Development of such a tool is key to furthering B2B firms' efforts to gain competitive advantage while better informing buyers about their emerging sustainable practices.

3. Study overview

Here, three studies examine marketers' understanding of sustainability positioning by developing a scale measure of B2B sustainability positioning. Fig. 2 shows the development of the studies alongside their key goals and outcomes.

In study 1, an exploratory study, in-depth semi-structured interviews were undertaken with B2B marketers to understand their perceptions and expectations for sustainability among their supply chain. Five factors emerged from this qualitative study to describe how B2B marketers understand and articulate the sustainability position of their supply chain partners.

Study 2a and 2b seek to operationalize these factors, which results in the development of a 30-item scale measuring stakeholders' perceptions of B2B brand sustainability. These studies further outline the

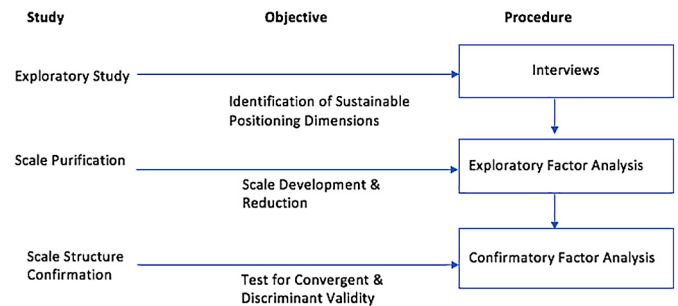


Fig. 2. Study Overview.

scale's convergent and discriminant validity with related scales in the marketing and branding literature that measure environmentally sustainable and other positioning strategies. This reveals the nomological network in which the construct of B2B sustainability positioning is embedded. This scale is intended as a tool that B2B marketers can use to assess perceptions of the sustainable practices and overall sustainability of their brand among suppliers and marketing channel partner. This allows them to determine where in Fig. 1 their brand currently stands.

Importantly, such a tool can be used both internally with stakeholders such as employees, and externally among clients. The scale is motivated by the literature on sustainability marketing and informed by B2B marketer's interviews in study 1. As such, it is organized into five factors that marketers can use informally (i.e., as leading questions) or more formally (as an administered scale) in conversations with buyers, investors, or employees. This helps them assess current sustainability positioning and evaluate what changes can improve or alter perceptions of the B2B brand's sustainability positioning.

3.1. Study 1: interviews with B2B marketing managers

The goal of study 1 is to understand business buyers' perceptions and expectations about the sustainability features of marketing channel partners and other business-to-business firms in their supply chains.

4. Method

4.1. Participants

Semi-structured in-depth interviews and purposive sampling were used to interview marketing managers of manufacturers and business buyers. Participants were chosen based on the potential richness of information with which they could contribute to the research objectives (Ritchie & Lewis, 2003). As such, given the level of sustainability related issues with chemicals in the manufacturing process, those manufacturing with chemicals or purchasing from a business who uses chemicals in production were chosen.

Eight interviews were conducted in total, four with marketing managers representing manufacturers and four with marketing managers representing business buyers (see Table 1). The literature suggests that interviews should continue until additional interviews do not give new insights into the subject studied (Taylor & Bogdan, 1998), also known as the point of theoretical saturation (Glaser & Strauss, 1967). Thus, interviewing concluded after the eighth participant, after continuous repetition of themes.

5. Procedure

Each of the eight marketing managers was contacted via email to inform them about the research and ethics, before the interviews were conducted. Two interviews were conducted over the telephone due to geographical dispersion (Berg, 2009), and six were conducted in-person at the participants' workplaces.

Table 1
Company profiles represented by participants.

Type of firm	Industry	Types of output	Number of employees
Manufacturer	Dairy hygiene	- Detergents - Animal health products	40–49
Manufacturer	Pharmaceuticals	- Skin care - First aid - Supplements - Injury treatment	400
Manufacturer	Environmental protection systems	- Stormwater and wastewater treatment - Flood protection	50–99
Manufacturer	Plastics	- Packaging - Palettes - Bins	50–99
Business buyer	Hygiene services	- Bathroom products - Hygiene products	50–99
Business buyer	Plastics processing	- Containers - Handgrips - Wheels	80
Business buyer	Office supply	- Office products - Stationery - Office furniture	900
Business buyer	Hardware	- Housewares - Security - Cookware	40–49

The interview guide consisted of three questions. The first question asked for the participant's general definition of sustainability within a company context (Berg, 2009). The next two questions asked participants for their specific views about what characteristics they would assign to a firm with low sustainability, and again to a firm with high sustainability. Questions were modified if necessary to clarify for a participant. The interviewer also used open-ended questions to probe for more understanding about sustainability as the discussion developed.

Each interview lasted approximately 30 min. Interviews were audio-recorded and transcribed. Transcriptions were then analyzed in NVivo using a thematic analysis (Braun & Clarke, 2006; see Fig. 3). In this, text units were assigned codes according to broad coding schemas using open coding in order to allow for participant's perceptions to come through (Ezzy, 2002; Strauss & Corbin, 1990).

Coding categories were then compiled to create overarching themes (see Fig. 4), labelled as B2B sustainability positioning factors, which allowed for full description of what composes high and low brand sustainability perceptions among supply chain partners.

6. Results

Five sustainability factors emerged in study 1's findings (see Fig. 4 for an overview of themes). The overarching themes identified in the thematic analysis were: 1) sustainability credibility; 2) environmental impact of company and product; 3) consideration of stakeholders; 4) resource and energy efficiency; and 5) holistic philosophy.

Consistent with participants' views, the theme of sustainability credibility was strongly related to environmental certifications. Examples include accreditations by the ISO (International Organization for Standardization), certifications by Enviro-Mark®NZ, participation in sustainability business networks and associations as well as health, safety and building warrant of fitness. Sustainability credibility is also characterized by continuous independent audits to assess the company's sustainable activities in order to make them account for caused impacts and pollution. Other specifics that led to credibility in sustainability practices include complying with trusted governmental regulations and the clear presence and articulation of a green procurement policy and

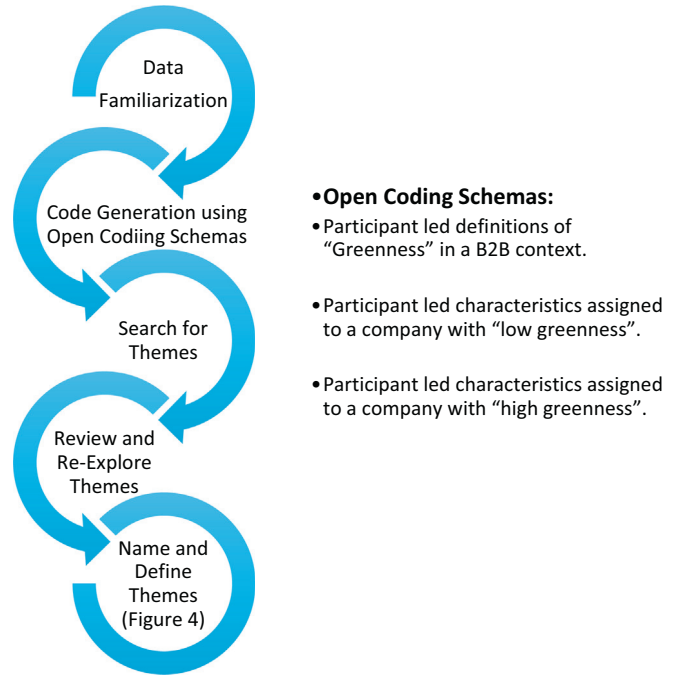


Fig. 3. Stages of data analysis (Braun & Clarke, 2006).

process. As Business Buyer 3 indicates, "One thing that comes to my mind immediately is a green procurement policy. From my own experience I can say that it plays an important role in a lot of processes. In general, we look at the procurement policies of the supplier and we choose carefully." In line with their belief in transparency, when aiming for sustainability credibility, participants agree that greenwashing activities are not acceptable. As pointed out by Business Buyer 1:

"I think a key thing for a company that really wants to display a high greenness is to be transparent...[green washers] try and disguise their lack of credibility or their lack of independent certification [...]. On the outside they appear to be quite green but if you actually really look into it is just full words and no action. It is no actual established processes or business initiatives that actually do display that they have initiatives that say that they are a green company."

In theme 2, it emerged that a B2B company should consider multiple environmental impacts of the company and products in their processes and activities, according to the participants. Specifically, production outputs such as emissions, air quality, noise pollution and carbon footprint are the most discussed aspects: "Speaking of emissions, a green company takes also care of the air quality and the fumes that are created through the production facilities. [...] Also noises and smells must be considered because it directly impacts the community the production facilities are located in" (Manufacturer 3). Production inputs are also not forgotten: "[...]you can design the products from different materials if it is recyclable or bio-degradable and also sourced from a sustainable company" (Business Buyer 3).

Measurement of inputs and outputs throughout the product lifecycle were paramount. "[A] company would be obviously [be] considering all the negative effects or impacts that a company may have on the environment and making sure that they are measured so that they know how much waste that they are producing, how much energy that they are consuming, how much water that they are using and measuring that, and creating initiatives to either reuse that waste or that water or offset it in a way with the carbon credits" (Business Buyer 1). A consideration of the 'Reduce, Re-Use, and Recycle' mantra through that lifecycle was also advocated: "[...] you can design the products from different materials if it is recyclable or bio-degradable and also sourced from a sustainable company" (Business Buyer 2). This was expanded on by Business Buyer 4: "Another thing that a

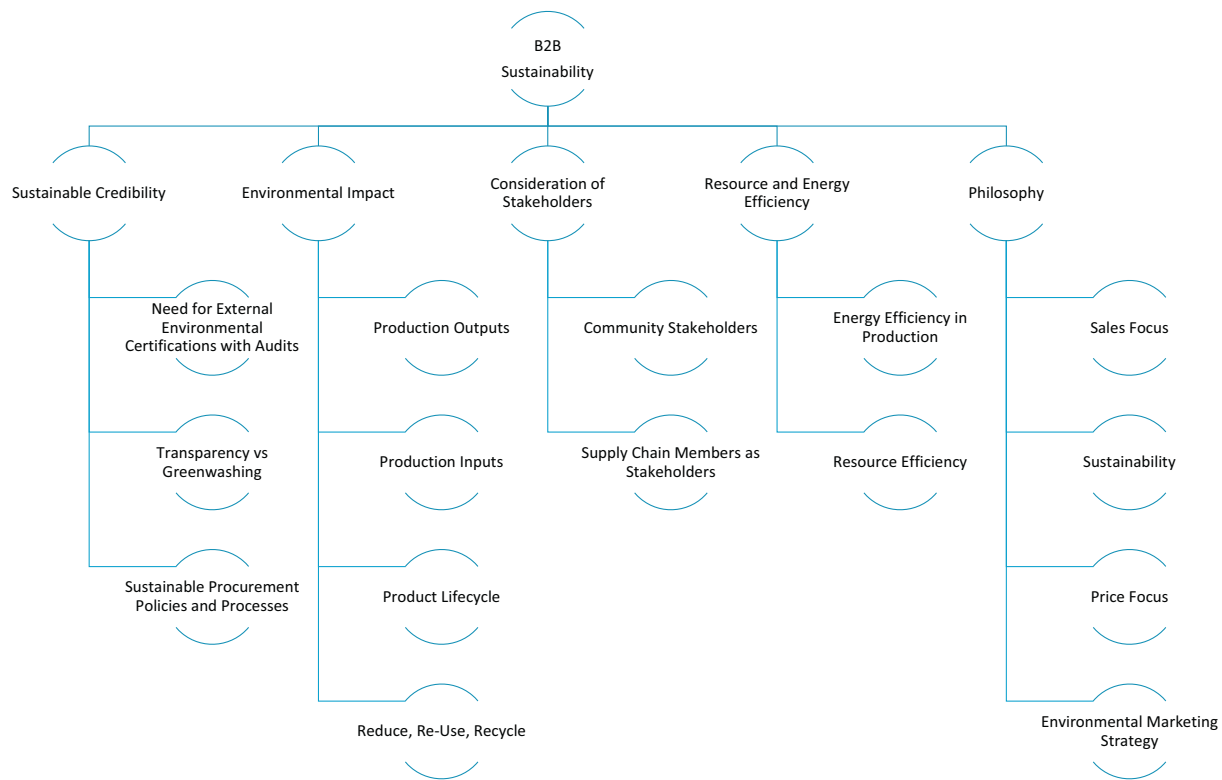


Fig. 4. Overview of themes.

green company would maybe initiate is the introduction of reusing old packaging. It would be also cheaper for the company. Our company is practicing that very successfully.”

Participants indicated that a variety of stakeholders need to be considered within a company's activities, forming theme 3. Stakeholders include the local and wider community affected by a company's actions. In line with informants' perceptions, sustainable firms are those that provide local communities with support and that guarantee health and safety issues in production facilities. As Business Buyer 1 clarified it, forming alliances with others in the supply chain to support the community are key components of sustainability. “You can be the best company at recycling and the best company at reducing your waste but you also definitely need to consider the wider community around you and supporting that by providing sports support for schools, and charity such as breast cancer awareness” (Business Buyer 1). Though, consideration of supply chain members was also necessary for effective sustainable practices and outcomes: “[...] also for companies that buy manufactured products, it is really essential to ensure that you form alliances with other business partners or suppliers that operate on the same ethos, that also have those true sustainable issues and operate at the same level” (Business Buyer 1).

The fourth theme shows that resource and energy efficiency is also considered as a significant sustainability factor by the participants. Such efficiency aims to preserve the environment while achieving cost benefits. Energy efficiency is related to energy consumption within the machinery and production process. It also refers to the use of innovative technologies in order to save energy: “[...] a company that has a low greenness regarding production processes, the only thing that I could think of is that they have ineffective processes and they would use more energy than they would normally have to and they would have inefficient systems; that they do not consider the environment while setting up those processes” (Business Buyer 2). Resource efficiency regarded both sourcing of resources as well as their use, as explained by Manufacturer 2: “[...]if you can source your raw material locally that would be better rather than importing these ingredients. So that's one thing. Making sure that whatever

packaging that you do for your product is utilized and there is no extra bits to the packaging that will not add to the value of the product. Very efficient and very minimal.”

Lastly, four different philosophies of B2B firms are identified from these interviews, which emerged as the most significant factor for determining how a business is positioned by study 1 participants. The philosophy describes the B2B organization's attitude towards sustainability practices and sustainability marketing and thus influences the other sustainability factors in either having high or low perceived sustainability. For instance, a *sales focus* merely focuses on the sales of products and is not concerned with the company's sustainability. Manufacturers representing the sales focus philosophy direct their entire business activity towards the generation of sales to the business buyer. This philosophy is mostly taken by manufacturers who might face strong sales pressure. As Business Buyer 2 expressed it, “A company with a low greenness would design a product without considering that the product is recyclable or bio-degradable or whether it is polluting the environment or not. And they probably don't care because they just want to sell the product.” This was also believed by manufactures such as Manufacturer 4: “It is very important to follow a sustainable approach but unfortunately the key motivation for the majority of companies in Business-to-Business is a financial factor.”

In contrast, a *sustainability focus* is consistent with the concept of sustainability, a philosophy which follows a holistic perspective. A company with a holistic philosophy has processes in place to cover the three dimensions of sustainability by considering environment, society and economy. In study 1, manufacturers and buyers alike were drawn to this focus. “[...] a company with a high greenness would take a holistic approach. This is again about being and acting sustainable. The company should take all their actions seriously that impact the environment and the community. And in the end this can also influence the economic outcome of the company. In this case, the manufacturer would be concerned about its economic welfare, society and the environment at the same time” (Manufacturer 3). They may not use their philosophy in their marketing communications, however.

The *price focus* philosophy shows a strong focus on price over sustainability, implying that these companies have not entirely established sustainable processes. Business buyers representing the price focus philosophy only focus on the price of goods or service that they purchase from the manufacturers. But that doesn't entirely exclude consideration of the environment, as Business Buyer 4 concludes: "Another point of high greenness is the manufacturers that we buy from. In that case I would definitely see us a high green company. We know the source we are purchasing from is very sustainable in terms of the manufacturing units and processes they use. That actually benefits us a lot as the cost effectiveness of the companies we buy from benefits us, too." Others echoed pragmatic benefits of sustainable behaviours, such as recycling: "Recycling is just more efficient and cost effective. And companies are now under so much financial pressure that they want to save every penny" (Manufacturer 2).

The philosophy of *environmental marketing strategy* aims to communicate sustainability in order to position the company as sustainable and environmentally conscious in the marketplace. This is best expressed by the study's Manufacturer 4, who says: "In terms of the marketing initiatives, greenness, recyclability and sustainability are huge in business-to-business operations. It is something that a company should involve in their business proposition. And to be seen by their customers which are ultimately the consumers. In terms from a marketing point of view, I feel greenness is very much about sustainability and what a company's propositions are. I think we have got to be seen as an environmentally responsible [firm]." Participants tend to acknowledge that companies with the environmental marketing philosophy, practice corporate social responsibility and have a strong consideration for the sustainability buyer's needs. However, they may not practice environmentally sustainable practices, though they communicate them in their marketing.

6.1. Discussion

The goal of study 1 was to address how B2B buyers perceive the sustainability of their supply chain partners. Convergence between the literature review and the informants in study 1's interviews yields identification of sustainability factors that cover the three dimensions of sustainability— environment, society and economy. Aspects that cover the environmental dimension relate to the environmental impacts of company and product. The societal dimension is reflected by consideration of stakeholders, and the dimension of economy emerges in themes of resource and energy efficiency. Yet how can B2B firms use this information in their own marketing strategy? This research next seeks to answer how B2B marketers can more clearly assess and articulate their own sustainability positioning. The goal of the next studies is to develop a tool to allow B2B marketers to assess their sustainability positioning and evaluate changes needed to alter perceptions of their sustainability position.

7. Studies 2a & 2b: scale development

Based on the literature on sustainability, marketing management, and B2B advertising and branding, as well as the results of study 1, five dimensions of the higher-order construct of B2B sustainability positioning were identified as being key to understanding a firm's sustainable positioning in the marketplace. The goal of the next two studies is to operationalize these factors to craft a scale measure that B2B brands can adopt to determine their sustainability positioning and strategic level of competitive advantage, as in Fig. 1.

We hypothesize a one-factor model of perceptions of B2B sustainability positioning. Study 2a and study 2b seek to explore and confirm the factor structure of this scale measure. This research first explores the factors that emerge from a larger number of items with a sample of B2B managers. It then draws from a second sample in study 2b to perform confirmatory factor analysis on the smaller subset of questions that emerge from study 2a, as shown in Fig. 5. Such a process allows this work to reach the best practices for scale development (Devellis,

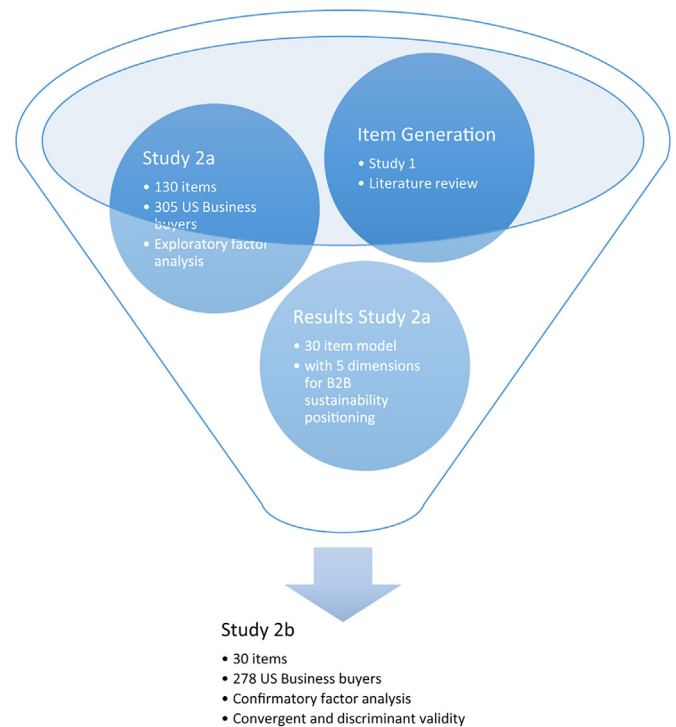


Fig. 5. Overview of Study 2a and 2b.

2011). We further seek to uncover the scale's convergent and discriminant validity by testing for correlations between related constructs in the literature, which include general brand positioning strategies (Blankson & Kalafatis, 2004) and sustainability based brand equity perception (Chen, 2010).

7.1. Scale item generation

To ensure content validity (Hinkin, 1995, 1998), scale construction emerged via two paths: (1) from a thorough review of the literature on sustainability, sustainability marketing, greenwashing, marketing communications, marketing strategy, sustainable branding, and marketing management, and (2) from the text of transcripts generated in study 1's semi-structured interviews. Scale item generation also emerged in brainstorming between the first two authors, and in informal conversations with academic experts in sustainability and marketing. Scale item generation focused on the five overarching dimensions as identified via the literature and study 1. It resulted in an initial list of 130 items to tap the constructs of B2B sustainability positioning.

Study 2a and study 2b next document and test the generated items to create a validated scale measure of B2B sustainability positioning. First, exploratory factor analysis was used with a sample of 305 U.S. B2B buyers in study 2a to both purify the items and generate a more succinct scale with fewer items. It also determined the factor structure of the B2B sustainability positioning construct. A 30-item model with 5 dimensions tapping the overall construct of B2B sustainability positioning resulted from the exploratory analysis and data reduction techniques. To follow up on and confirm the developed scale, additional data was collected from a second sample of B2B marketing managers (Devellis, 2011). In study 2b, confirmatory factor analysis with a second sample of 278 additional American B2B buyers is used to confirm that the structure with 30 items, as identified in study 2a, fits with the data from a new sample drawn from a population of experienced U.S. B2B managers. Study 2b further allows for tests of convergent and discriminant validity of the B2B sustainability positioning construct via correlations with related marketing and branding constructs in the nomological network. Importantly, the construct, as informed by a

literature review of international perceptions on sustainability and B2B brand positioning as well as study 1's interviews with New Zealand-based B2B marketing managers, was tested with two independent samples of American B2B managers to create a highly relevant and generalizable scale for use among international B2B marketers.

7.2. Study 2A: scale purification

The goal of study 2a is to produce a short and reliable version of the B2B sustainability positioning scale and to verify the construct's structure, via exploratory factor analysis.

7.2.1. Participants and method

A sample of 305 U.S. adult participants recruited from an online panel (49% female, mean age = 41.01) completed the study in exchange for small monetary payment. Only respondents who at the time of response were employed as buyers or managers in a B2B industry (85.3%), or had in the past worked as buyers or managers in B2B (14.7%), were invited to participate in this study.

Participants were recruited to respond to an online survey via Cint panel management. Each was asked to spend 15–20 min responding to the 130 items and a demographic questionnaire which included the shortened measure of social desirable responding (Paulhus, 1998).

In order to operationalize B2B sustainability positioning, each respondent was asked to provide the name of the B2B firm they work for (or had worked for most recently). Using simple coding in the survey software Qualtrics, the firm name provided by each participant was then placed in each of the 130 items in lieu of the placeholder “target firm.” Thus, items that appear as “Target firm uses green words to describe its practices,” will reflect a different firm name for each participant, i.e., “FutureMatrix uses green words to describe its practices.” This allowed for an examination of how well the B2B sustainability positioning items tapped the sustainability based marketing and/or sustainability practices of a firm respondents are highly familiar with. For each item, participants responded on a “1” = “strongly disagree” to “7” = “strongly agree” Likert-type scale.

7.2.2. Results

Bartlett's test of sphericity ($\chi^2(435) = 6494.94, p < .05$) and the Kaiser-Meyer-Olkin measure of sampling adequacy (0.94) indicate that the data are appropriate for factor analysis. The cleanest solution emerged using principal axis factoring. The common factor model is best applied “in well-specified theoretical applications” (Hair, Black, Babin, & Andersen, 2014, pg. 109). An initial exploratory factor analysis revealed that there was one primary factor that emerged from the set of 130 items, which explains 74.6% of the variance with an Eigenvalue of 22.37 versus a second factor, with an Eigenvalue of 13.04 that explains only 4.8% of the variance.

Following key decision rules of thumb for how to reduce the data (Hair et al., 2014), the scree test shows one factor before the inflection point, which indicates that only the first factor demonstrates substantial amounts of common variance. Further, only the first factor meets the general guideline of explaining 60% or higher of the variance (Hair et al., 2014). Thus, only items that load on factor 1 were retained for further analysis. This also aligns with the literature and study 1 findings, as a single higher order observed variable of B2B sustainability position is hypothesized. From that single factor, only the items that load the highest on the higher order factor (at 0.7 and above) were retained. A closer inspection of the loadings for the second and following factors further revealed that loadings were much smaller than on the first factor identified. Cronbach's alpha for the remaining 44 items that loaded on this factor was high, at $\alpha = 0.98$, indicating that some of the items were redundant (Nunnally, 1978; Tavakol & Dennick, 2011). The items were thus sorted into the five dimensions hypothesized from the literature and study 1 informants (Hair et al., 2014) as a final stopping criteria to determine the number of items to retain.

Table 2

Factor loadings for the 30-item B2B sustainability positioning scale.

Item	Study 2A	Study 2B
Dimension 1: credibility		
Target firm uses green words to describe its practices.	0.82	0.71
Target firm uses sustainable actions in its practices.	0.86	0.80
Target firm has established processes that demonstrate sustainability.	0.86	0.76
Target firm has established business initiatives that demonstrate a focus on the environment.	0.84	0.83
Cronbach's alpha	0.82	0.87
Dimension 2: environmental impact		
Target firm clearly takes care of its carbon footprint.	0.86	0.82
Environmental concerns are high on target firm's priorities.	0.87	0.80
Target firm is actively trying to produce less waste.	0.84	0.78
Target firm is leading initiatives to offset energy use.	0.87	0.83
Target firm is actively trying to lower emissions caused by the company.	0.88	0.85
Target firm is leading initiatives to lower emissions.	0.88	0.81
I believe target firm considers environmental impacts as part of their mission.	0.87	0.76
Target firm is concerned with the environmental impact of their products from cradle to grave.	0.86	0.85
Target firm is concerned with the environmental impact of the production process, usage, and disposal of their products.	0.89	0.74
Cronbach's alpha	0.90	0.86
Dimension 3: stakeholder consideration		
Target firm is in step with sustainable business practices.	0.86	0.85
Target firm leads sustainable practices in its supply chain.	0.87	0.74
Target firm leads sustainable practices in its community.	0.86	0.87
Target firm is known for encouraging sustainability in its supply chain.	0.88	0.87
I view target firm as being a site of sustainability knowledge for the community.	0.87	0.78
Target firm takes the needs of a sustainable buyer into consideration.	0.86	0.84
Cronbach's alpha	0.87	0.85
Dimension 4: resource efficiency		
Target firm values resource efficiency.	0.81	0.75
I believe target firm aims to achieve energy efficiency.	0.84	0.79
The offerings target firm provides are produced as efficiently as possible.	0.82	0.81
Cronbach's alpha	0.92	0.91
Dimension 5: holistic philosophy		
Target firm considers the environment, society, and economics in its decisions.	0.85	0.85
Target firm clearly positions itself as being sustainable.	0.87	0.89
Target firm's marketing materials do a good job of emphasizing its sustainable practices.	0.84	0.87
Target firm's marketing materials showcase environmentally conscious practices.	0.84	0.87
Target firm is clearly a sustainable firm.	0.87	0.90
Because I use target firm in my supply chain, I feel green.	0.89	0.87
Target firm is known for being environmentally responsible.	0.86	0.89
I would cite the target firm as a good example of green behavior.	0.97	0.91
Cronbach's alpha	0.84	0.89
Overall B2B sustainability positioning scale alpha	0.91	0.94

Careful examination of these items to ensure there was no use of redundant wording was used, in combination with subscale reliability tests, to further reduce the data to yield acceptable and reliable Cronbach's alphas of 0.70 to 0.90 (Nunnally, 1978), with reliability for the dimensions (sustainability credibility, environmental impact, stakeholder consideration, resource efficiency, and holistic philosophy) ranging from $\alpha = 0.82$ to $\alpha = 0.92$.

The resulting 30 items emerge from the exploratory factor analysis are shown in Table 2, alongside factor loadings and reliability tests.

Finally, to assess the degree to which respondents might potentially respond in a socially desirable manner, correlations between the brand

sustainability positioning scale dimensions and both the self-deceptive enhancement and impression management subscales of the Balanced Inventory of Desirable Responding (Paulhus, 1998) scale were examined. Brand sustainability positioning was not related to either self-deceptive enhancement ($r = 0.11, p = .06$) or impression management ($r = 0.09, p = .12$).

The next goal is to further test the reliability and validity of this measure. Study 2b seeks to confirm and generalize the factor structure with a new sample of U.S. B2B buyers and managers, using confirmatory factor analysis. This is an important process for verifying the validity and generalizability of the scale development, as recommended in social research methodology (Devellis, 2011).

7.3. Study 2b: confirming the scale structure

Study 2b is designed to provide further evidence of the reliability and validity of the B2B sustainability positioning measure. It does this by confirming the factor structure with a new sample of B2B respondents, and providing support for the convergent and discriminant validity of the construct. In particular, this study will examine how B2B sustainability positioning fits in the nomological network with other key positioning strategies for brands and products. Confirming the factor structure with a second sample is an important and necessary step in scale development methodology (i.e., Devellis, 2011).

7.3.1. Participants and method

A sample of 278 U.S. adult participants from an online Cint panel (46.7% female, mean age = 41.27) completed the study in exchange for small monetary reward. Data for study 2b was collected from an independent sample of participants, two months after data for study 2a was collected. Only respondents who at the time of response were employed as buyers or managers in B2B (87.1%) or had in the past worked as buyers or managers in B2B serving clients (12.9%) were invited to participate in this study.

As in study 2a, participants were tasked with first listing the name of the B2B firm they currently worked for or most recently worked for before answering B2B sustainability positioning items. Responses were gathered on a “1” = “strongly disagree” to “7” = “strongly agree” scale. In study 2b, participants responded to the short form of the scale, with 30 items, as found in study 2a. Additionally, participants responded to demographic questions and to scale items that tapped constructs anticipated to provide convergent and divergent validity for B2B sustainability positioning; namely, general brand positioning strategies (Blankson & Kalafatis, 2004) and sustainability based brand equity perceptions (Chen, 2010).

7.3.2. Results

This sample of American B2B managers confirmed the reliability of the 30-item B2B sustainability positioning scale, with an alpha of 0.94. Table 2 further reports the reliabilities of the five dimensions in study 2b. To confirm the factor structure, confirmatory factor analysis via structural equation modelling showed the one-factor model fit the data well (see Table 3). Importantly, a non-significant chi square of 516.22 ($p = .19, df = 435$) for the one-factor model indicates that the data collected fits. However, because chi-square is less sensitive with larger sample sizes, other fit indices were consulted to verify this preliminary

conclusion (Schumacker & Lomax, 2004). In particular, the normed fit index (NFI) and Tucker-Lewis index (TLI), along with an RMSEA below 0.08, allows us to determine the one-factor model fits the data.

7.3.2.1. Convergent & divergent validity. Correlation analyses indicated that demographic variables such as age, gender, and ethnicity, were not significantly correlated with the B2B sustainability positioning construct. This indicates that employees in B2B firms can evaluate their firms' sustainability positioning without effects from demographic differences.

As a new construct, B2B sustainability positioning should be grounded with similar scales in the marketing literature to establish its place among pre-existing measures. To verify convergent validity, correlations were analyzed to test predictions that firm sustainability positioning would be related to (a) general brand positioning, and (b) sustainability based brand equity perceptions. Convergent validity is a key indicator of construct validity, and in psychometric testing showing that measures that should theoretically be related are in fact statistically and significantly related is an important step in verifying that a new construct measures what it intended to measure (Shadish, Cook, & Campbell, 2002).

As Table 4 shows, each of the 5 dimensions of firm sustainability are significantly correlated with Blankson and Kalafatis' (2004) general brand positioning factors; i.e., the sustainability credibility dimension is correlated (all p 's < 0.01) with top range positioning ($r = 0.54$), service ($r = 0.53$), reliability ($r = 0.52$), attractive positioning ($r = 0.63$), value for money ($r = 0.46$), country of origin ($r = 0.48$), brand name ($r = 0.56$), and selectivity positioning ($r = 0.39$). Table 4 shows further significant correlations between the two scale measures. This confirms that B2B sustainability is, as a positioning strategy, highly related to relevant positioning strategies of being top range, having good service, being reliable, providing attractive offerings, country of origin positioning, branding and selectivity. These findings provide evidence that positioning around a B2B brand's sustainability can be an important source of brand equity for firms, much as positioning around general strategies such as brand name, service, and attractiveness.

As might be anticipated, significant correlations also emerge between B2B sustainability positioning dimensions and scale measures of generalized sustainability based brand image, satisfaction, and trust for sustainable consumer products (Chen, 2010). The way respondents who work in B2B industries see their brand's own sustainability position here correlates (significantly, though not highly) with perceptions of sustainability based consumer brands. See Table 4 for the complete correlations. Of note, the highest Pearson's R correlations are at 0.40 (between green brand image and firm environmental impact, $r = 0.40, p < .01$, and between sustainability based brand image and firm consideration of stakeholders, $r = 0.40, p < .01$), which is a moderate correlation. The correlations of $r = 0.39$ and under show a modest overlap in the constructs. This allows the conclusion that the scale of B2B sustainability positioning fits with the literature on a B2C brand's sustainability perceptions. It also offers unique contributions important for the distinct processes in marketing and communications among B2B firms.

Converging evidence thus reveals that B2B sustainability positioning is related to general B2C brand positioning and to B2B green product brand perceptions, helping verify validity of the construct (Devellis, 2011). Key to this research, however, is that perceptions individuals have of consumer brands (i.e., Blankson & Kalafatis, 2004; Chen, 2010) do not translate wholesale to B2B contexts. That is, considerations of how client-facing firms in the supply chain are perceived by their buyer and supplier partners differ. The supply chain involves more touchpoints, more interactions, and the exchange of more money, resources, and marketing communications than a typical consumer purchase. This results in more involved, long-term trusting relationships in B2B supply chains. The B2B sustainability positioning scale offers industrial marketers a tool specifically for examining how well

Table 3
Fit indices for confirmatory factor analysis.

GFI	0.79
NFI	0.91
TLI	0.93
CFI	0.93
RMSEA	0.06
CMIN	516.22
	($p = .19, df = 435$)

Table 4
Correlations with positioning scales in the literature.

B2B sustainability positioning dimensions		Sustainability credibility	Environmental impact	Stakeholder consideration	Resource efficiency	Holistic philosophy
Cronbach's alpha						
<i>Blankson and Kalafatis (2004)</i> general brand positioning						
Top range	0.92	0.54 ^a	0.58 ^a	0.59 ^a	0.52 ^a	0.61 ^a
Service	0.90	0.53 ^a	0.58 ^a	0.61 ^a	0.67 ^a	0.59 ^a
Value money	0.92	0.46 ^a	0.51 ^a	0.52 ^a	0.57 ^a	0.52 ^a
Reliability	0.89	0.52 ^a	0.60 ^a	0.58 ^a	0.63 ^a	0.60 ^a
Attractive	0.92	0.63 ^a	0.67 ^a	0.68 ^a	0.65 ^a	0.71 ^a
Country of origin	0.79	0.48 ^a	0.55 ^a	0.51 ^a	0.56 ^a	0.53 ^a
Brand name	0.89	0.56 ^a	0.63 ^a	0.61 ^a	0.62 ^a	0.65 ^a
Selectivity	0.68	0.39 ^a	0.46 ^a	0.44 ^a	0.38 ^a	0.45 ^a
<i>Chen (2010)</i> green product brand equity scales						
Brand image	0.93	0.34 ^a	0.40 ^{aa}	0.40	0.30	0.39 ^a
Brand satisfaction	0.92	0.32 ^a	0.39 ^a	0.36 ^a	0.27 ^a	0.37 ^a
Trust	0.92	0.32 ^a	0.38 ^a	0.39 ^a	0.29 ^a	0.37 ^a
Brand equity	0.83	0.21 ^a	0.25 ^a	0.29 ^a	0.25 ^a	0.26 ^a

^a Correlation is significant at the $p = .01$ level (2-tailed).

their own repeated, long-term, client-relationship-based touchpoints are functioning when it comes to presenting an image of sustainability.

7.4. Discussion

The goal of study 2a and study 2b was to operationalize the literature and the thematic results of study 1 to test and validate a scale of B2B sustainability positioning. To explore the factor structure of the original 130 items generated for testing, study 2a relied on exploratory factor analysis with a sample of U.S. B2B buyers and managers. Study 2b used a distinct sample of U.S. B2B workers and structural equation modelling to confirm the factor structure, following recommended, rigorous scale development methodology expectations (Devellis, 2011). The result is a 30-item scale measure of B2B sustainability positioning. The scale emerged as reliable and valid in showing predicted relationships to similar B2C positioning constructs, such as general brand positioning and sustainable product brand equity.

Importantly, working with three independent samples from two countries allows this research to better assess the external validity of the B2B sustainability positioning scale (i.e., Shadish et al., 2002). When contemplating how generalizable the construct of B2B sustainability positioning is, external validity questions allow researchers to draw “inferences about the extent to which a causal relationship holds over variations in persons, settings, treatments and outcomes,” (Shadish et al., 2002, p. 83). External validity emerges when relationships can be shown to encapsulate variations in samples in the research. For instance, from a narrow sample (as in study 1) to a broader sample (as in studies 2a and 2b), or through different population samples, such as in one country in study 1 to another country as in studies 2a and 2b. Hence, two large samples of U.S. B2B workers and one small sample of in-depth interviews with New Zealand B2B marketing managers present converging evidence that B2B sustainability positioning is a consistently reliable, valid, and distinct construct for international firms pursuing sustainability positioning.

The construct of B2B sustainability positioning also emerges as embedded in related scale measures of brand strategic positioning, from general strategies such as selectivity and service, to more specific sustainability related product branding perceptions. This is key to verifying that the construct itself is well situated in the field. Yet this scale offers a way to measure details and perceptions that are distinct from those found in the consumer marketplace. For instance, lower correlations with B2C sustainable brand equity (Chen, 2010) show that B2B brand sustainability offers a distinct way to measure perceptions for B2B firms. We view this scale as a tool that allows B2B marketers and firms to test how well their practices and communications align to create a clearly articulated and authentic sustainability positioning

among stakeholders.

7.5. Theoretical implications

Sustainable positioning obligates companies to incorporate the three dimensions of sustainability – economic, environmental and societal— into their business activities (World Commission on Environment and Development, 1987). Sustainability marketing is strongly linked to sustainability because it generates and delivers sustainable solutions while continuously satisfying customers' and stakeholders' needs (Charter, Peattie, Ottman, & Polonsky, 2002). B2B organizations can thus achieve sustainable superiority (see Fig. 1) while satisfying business buyers' and stakeholders' needs. This can be done by combining both concepts effectively, and embracing sustainable practice (i.e., reduced carbon emissions), hand-in-hand with sustainability marketing (i.e., ensuring clients have a clear perception of the firm's emissions standards and regulatory certifications).

This research shows that for a firm to position itself as being sustainably superior, it must address five key factors: (1) sustainability credibility, (2) concern for environmental impact, (3) a careful consideration of stakeholders, (4) resource efficiency, and (5) a holistic philosophy. These address environment, economy, and social needs. Interviews with marketing managers and business buyers in New Zealand manufacturing highlight the role that clear, transparent, and effective marketing communications efforts have on views of sustainability efforts of supply chain partners. The results of study 1, in combination with a thorough review of the literature, provide for the operationalization of different sustainability based brand images that may be revealed through positioning (see Fig. 6). Follow-up studies in study 2a and 2b with U.S. B2B managers and buyers confirm the structure of this instrument. They also reveal that the construct of B2B brand sustainability is internationally understood and valued in the supply chain.

A sales-only philosophy can lead to criticism and pressure from public, business buyers and governments. This is because the B2B organization adopting this philosophy does not authentically implement sustainability as a concept (Kennedy, Kapitan, & Soo, 2016) while promoting sustainability. This is especially difficult for large conglomerates who own multiple brands with some “green” and others not. In the consumer arena, this has occurred with L'oreal and their purchase of The Body Shop. The Body Shop advocates against testing on animals, while other brands under the L'oreal umbrella conduct testing on animals. DuPont was also called to task as a greenwasher in the B2B industry in the 1980s. While it introduced new oil tankers to look after marine animals, it was also found to be the largest U.S. polluter (Watson, 2016). Greenwashing marketing strategies are most likely to fail in the long term as governments, pressure groups and buyers

BUSINESS BUYER Perception of manufacturer's sustainability	high	Green Washer - Actual sustainable credibility low but perceived as high - Actual environmental impact of company and product high but perceived as low - Actual resource and energy efficiency low but perceived as high - Actual consideration of stakeholders low but perceived as high - Philosophy: Environmental marketing strategy based on sales	Sustainable Superiority - High sustainable credibility - Low environmental impact of company and product - High resource and energy efficiency - High consideration of stakeholders - Philosophy: Environmental marketing strategy based on sustainability
	low	Honest, Non-Sustainable - Low sustainable credibility - High environmental impact of company and product - Low resource and energy efficiency - Low consideration of stakeholders - Philosophy: Sales focus and price focus	Missed Opportunity/Strategic Choice - Actual sustainable credibility high but perceived as low - Actual environmental impact of company and product low but perceived as high - Actual resource and energy efficiency high but perceived as low - Actual consideration of stakeholders high but perceived as low - Philosophy: Based on sustainability but perceived as based on price
		low	high
MANUFACTURER Actual sustainability			

Fig. 6. B2B Sustainability Positioning.

discover the deception, which can result in lost sales and reputation damage.

A sustainably superior organization, however, is perceived as being highly sustainable and credible, with low environmental impact of company and product. Stakeholders are strongly considered within this organization's activities while resource and energy efficiency is achieved. The holistic philosophy captures the concept of sustainability, which is implemented into the organization's processes. Competitive advantage can be gained through differentiation of the product with its sustainable performance, or through cost savings which result from high resource and energy efficiency (Porter & Van der Linde, 1995). While the classic example of this in B2C markets is outdoor apparel company Patagonia, B2B market pioneers in sustainability include such companies as robotics, technology and automation multinational ABB. ABB continues to win sustainability awards, and to feature in the FTSE4 Good Global Index, gain EcoVadis gold ratings and Oekom Prime Status (ABB, 2018). Sustainable processes are, further, clearly marketed towards the business buyer with an environmental marketing strategy. For example, not only should the company provide a sustainability report, but also use their awards and processes in their advertising, brochures and websites.

An honest, non-sustainable organization has low sustainability credibility with a high environmental impact of company and products, coupled with low resource and energy efficiency. Stakeholders are not perceived as being considered by the organization. This may be the case for companies that exist in a monopoly and so are not driven to pursue sustainability by their buyers. The business buyer perceives the company as being low in sustainability and both agree that sustainability is non-existent. The organization's philosophy is only focused on the increase of sales and decrease of buying prices, which aligns with their perceptions and practices. This can be seen when a company may consider price only for certain components in their manufacturing process and is accepted by many companies that do not use sustainability in their marketing.

An organization with a missed opportunity has high sustainability credibility with a low environmental impact of company and product,

as shown in Fig. 6. Resource and energy efficiencies and stakeholders are highly considered by the organization. Unfortunately, business buyers might instead perceive the organization's philosophy as one-dimensional based on prices rather than sustainability, even when the organization has implemented the sustainability concept into their strategy and practices. The gap may be due to an ineffective sustainability marketing strategy which fails to fully communicate the sustainability features of the organization and products (Finch et al., 2015; Simula et al., 2009). This is the case where outdoor apparel and equipment retailer Kathmandu sat at the development table with companies such as Patagonia, and have practices as measurably sustainable as the award-winning Patagonia. However where Patagonia communicates their sustainability in their marketing communications efforts, Kathmandu did not, and is thus not perceived by buyers as being highly sustainable.

In essence, a sustainable firm that is not perceived as being sustainable is missing the strategic link between sustainability and sustainability based marketing. Such marketing is strongly linked to sustainability, as it helps to achieve the dimensions of sustainability through generating and delivering sustainable solutions whilst continuously satisfying customers' and stakeholders' needs (Charter et al., 2002). As a result, an ineffective sustainability based marketing strategy cannot satisfy business buyers' needs, as it does not communicate sustainable solutions to business buyers.

The difference between B2B sustainability positioning images can be found in their philosophy (i.e., sales, holistic sustainability, price or environmental marketing strategy focus). Philosophies have a cascading influence on business buyer perception of the other dimensions of B2B sustainability positioning (i.e., sustainability credibility, concern for environmental impact, a careful consideration of stakeholders, and/or resource efficiency). A B2B brand philosophy positively influences the performance of the organization (Posner, Kouzes, & Schmidt, 1985) and has an even greater impact on an organization's performance in B2B than in B2C settings (Avlonitis & Gounaris, 1997). The B2B organization's philosophy thus emerges as a significant factor in driving perceptions of B2B sustainability positioning. This makes choosing the

right philosophy a crucial preliminary requirement for an effective sustainability based marketing strategy and the resultant successful performance of a B2B organization.

7.6. Managerial implications

The emergent construct of B2B sustainability positioning reveals how B2B branding and advertising strategy (i.e., Gilliland & Thomas, 1997; Mudambi, 2002; Mudambi, Doyle, & Wong, 1997) extends to perceptions of value towards a sustainability based supplier brand image. Business buyers with strong attitudes towards sustainable practices, and tasked to enhance their firm's corporate social responsibility strategies, may be particularly drawn to B2B brand sustainability in marketing communications channels.

The B2B sustainability positioning scale and Fig. 6 reveals that a firm must have credibility and an articulated holistic philosophy of sustainability before any sustainability marketing efforts will change public and partner firm perceptions (i.e., Simula et al., 2009). B2B buyers tend to be unsure if an organization is “greenwashing” or using sustainable claims in marketing without supportive sustainable practices. Yet suppliers appearing to care more about sales or low prices than sustainability, damage perceptions of their firm's sustainability credibility.

Firms with well-established sustainable philosophies are leaders in their communities. The B2B sustainability positioning scale shows that the best known B2B sustainability brands are those that clearly position themselves as being sustainable. These firms showcase environmentally conscious practices such as efforts to reduce their carbon footprint, reduce outputs of waste, recycle their shipping materials, and lead initiatives to offset energy use. Sustainable superiority can be seen in supply chain partners that are the site of sustainability knowledge in their communities. Encouraging sustainability among supply chain partners also adds to perceptions of having a sustainability based positioning. Airline carrier Air New Zealand, repeatedly named the New Zealand Sustainable Business Network supreme winner, challenges other firms in their supply chain to follow its example. In an effort to reduce waste from in-flight food consumption, the airliner worked with their catering suppliers to upgrade to reusable cups. Together the supply chain partners worked to retrain flight attendants and catering personnel in the logistics of sorting, sanitizing and reusing meal service items (Air New Zealand, 2017). In one year of 6 million meals served, the process diverted 6 tons from landfills. The catering supplier, which once incinerated 5.2 million tons of waste, now salvages 40 service items for its contracts that, instead of being destroyed, come back sanitized and ready for reuse.

In both interviews and survey responses, B2B marketing managers and buyers indicate that firms which consider sustainable buyer needs demonstrate sustainable superiority. This aligns with work on industrial branding (Mudambi et al., 1997), in which choice of supplier is driven by brand concepts such as innovative aspects of the offered product, expertise, technical leadership, and the ability of a supplier to understand and respond to client needs. Buyers actively seek partner firms known for embracing sustainable practices (i.e., using less material in transport and packaging) to satisfy their end-consumers. Hence, firms that have the most sustainable practices are often likewise more cost effective. At a single airport, Air New Zealand made it a priority to switch to ground power within 5 min of flight landing. This supplied power and air conditioning when the jets arrive at the gate, saving 106 kg of jet fuel on its aircrafts in one month alone (Air New Zealand, 2017). Electrified gates on the ground saved the airliner and its suppliers money and precious CO₂ emissions, a key saving for an aviation industry responsible for between 2 and 4% of global emissions each year.

The chief role of effective B2B sustainability marketing should be centred on creating connected actors who together derive demand for more sustainable outcomes (Finch et al., 2015). As Air New Zealand

shows (Air New Zealand, 2017), perceptions of B2B sustainability positioning and communications around sustainable practices are a conduit for buy-in from supply chain partners. The process helps build interdependence in sustainable development processes and spreads risks to ensure the continuity of the enterprises involved (Callon, 2007; Finch et al., 2015; Hines, 1993). Material and capital supports the development of sustainable supply chains alongside information shared via communications between B2B brands and clients (Suering & Muller, 2008). Especially in the realm of sustainable practices, marketing communications can help firms resist “singular stewardship” (Finch et al., 2015) while articulating their own B2B brand's sustainable competitive advantage.

Governmental regulations and international standards emerged in study 1 as chief determinants of the credibility of a B2B firm's sustainability claims. Standards such as the ISO14000, the United Nations' sustainable development goals 2030, and other third party certifications are being increasingly adopted by firms to signal their sustainability positioning. Supplier sustainability regulations and corporate disclosure requirements have spurred a growth in supply chain stewardship ratings as well. > 150 buyer firms and 30,000 suppliers contract for EcoVadis' supplier sustainability rankings platform (EcoVadis, 2017). Yet this research argues that such standards and rankings alone cannot determine a B2B brand's sustainability positioning. They also fail to provide differentiation from other B2B firms with the same certifications. Shifting political sands can put companies in jeopardy if they rely solely on compliance with international and government-mandated standards for sustainability positioning. As the United States pulled out of the 2015 Paris climate accords, U.S. companies rallied to maintain their sustainability positioning. American global confectionary manufacturer Mars, for instance, announced a \$1 billion sustainability plan targeting a 70% reduction in their greenhouse gases to meet the Paris accords' goals. U.S. auto giant General Motors advertised its purchasing of 200 MW of wind energy for its plants in an effort to achieve use of only renewable energy sources by 2050 (Luscombe, 2017). Such public announcements and marketing communications are clearly necessary—in addition to compliance with international and governmental standards—to secure a perception of sustainability for today's B2B brands. As the B2B sustainability positioning construct in this research shows, compliance and adherence to governmental regulations and standards are only one part of clearly signalling and articulating a B2B brand's sustainability perceptions.

7.7. Limitations, future research and conclusions

Limitations of this research may stem from the interviews being conducted in New Zealand, which might limit its international generalizability. To mitigate this, study 2a and 2b were conducted using U.S. panels and the literature was also reviewed to identify constructs and important elements for B2B sustainability. This is an advantage for assessing external validity of the B2B sustainability positioning construct (i.e., Shadish et al., 2002), in which testing whether a research relationship holds over variations in samples and populations is a key component. However, conducting interviews in other international contexts should be an area for future research. As the field of sustainability and the technology used to produce sustainable outcomes advances, the present scale of B2B sustainability positioning may also need to be updated to reflect the evolution of the construct itself. Thus, this scale measure at present is intended as a baseline measure in a continually evolving business environment.

Future research would benefit from using the B2B sustainability positioning scale to measure firm sustainability positioning and firm performance. Using the scale to measure current firm positioning and re-positioning exercises may provide insight into sustainability re-positioning. Another important arena for future research should explore the possibility of the spread of sustainability practices in the supply chain. This could occur through supply chain contagion effects in which

both micro and macro institutional factors yield influence on buyer and supplier partners (i.e., McFarland, Bloodgood, & Payan, 2008). Downstream influence can lead to unintended imitation via supply chain contagion. This is telling in a setting in which cost drivers and customer drivers differentially impact larger vs. smaller firms' green practices and ultimate environmental performance (Wang, Wang, Zhang, & Zhao, 2018). While green contagion can yield positive results for increasing sustainability practices, one concern is that imitation of a green supply chain can inadvertently influence the amount of green-washing a B2B firm embraces (Carbone & Moatti, 2011). How much influence sustainable B2B firms have on their supply chain partners, as well as how widespread adoption of authentic sustainably superior practices are in addition to sustainable marketing, remains an open question in this research.

Following good integrated marketing communications practices, it is possible that a B2B firm's positioning is strengthened (or weakened) depending on the marketing communication channel used. However, the developed scale presents a good overall view of the positioning based on the totality of channels used. This being said, future research should test the differences in positioning between companies who predominantly use different marketing channels from one another.

As marketplace demand rises for sustainable products and services, businesses can encounter difficulty in procuring acceptable products and services that help them maintain a sustainable brand and sustainable market position in both the business-to-business (B2B) and business-to-consumer (B2C) context. Retailers and service providers are pushing back on their supply chain for offerings produced sustainably, following principles of being “lean and resource efficient” and “local and seasonal” (Brindley & Oxbrow, 2014). However, the potential importance of B2B sustainability positioning among other general positioning strategies— from value positioning to service, reliability, and selectivity positions (Blankson & Kalafatis, 2004)— makes the firm perspective on the pursuit of sustainable superiority highly relevant. This relevance is for both meeting a firm's strategic corporate social responsibility objectives, and for supporting and encouraging sustainable processes throughout the supply chain. Importantly, perceptions of consumer brands by individual consumers, as presented in extant brand positioning tools (i.e., Blankson & Kalafatis, 2004), do not directly translate to a firm's B2B level of sustainability positioning. This is due to the embeddedness of B2B touchpoints and the evolving yet long-term, trusting, solutions-based relationships that emerge in the supply chain.

This B2B sustainability positioning tool is of clear practical use for industrial marketers. Marketers seek to assess their sustainability positioning among internal and external stakeholders with such a tool, but can also use it to guide conversations with clients in the marketing channel to assess their perceptions of the brand's sustainability. B2B marketers can use findings from this tool's sets of questions to assess both physical practices for sustainable superiority (vs. that of green-washing), as well as clarity and integration of sustainability marketing communications strategies. The ultimate goal of B2B sustainability marketing efforts are to influence clients' perceptions of B2B brand sustainability. Ultimately aiming to achieve a trusted position of sustainable superiority that yields further investment in sustainable products and production processes.

References

- ABB (2018). ABB sustainability report. Accessed April 22nd 2018 from: <http://sustainabilityreport2017.e.abb.com/overview/awards-and-achievements.html>.
- Abrams, R. (2017). Walmart is accused of punishing workers for sick days. *The New York Times*, 1, 2017. June. Accessed April 23, 2018 from: <https://www.nytimes.com/2017/06/01/business/walmart-workers-sick-days.html>.
- Air New Zealand 2017 sustainability report. accessed at <https://www.airnewzealand.co.nz/sustainability>.
- Alvarez, M. J., Jimenez, J. B., & Lorente, J. J. C. (2001). An analysis of environmental management, organizational context and performance of Spanish hotels. *Omega*, 29(6), 457–471.
- Ambec, S., & Lanoie, P. (2008). Does it pay to be green? A systematic overview. *Academy of Management Perspectives*, 22, 45–62.
- Arnould, E. J., & Press, M. (2011). Marketing organizations and sustainable marketing. In G. Basile, J. Hershauer, & S. G. McNall (Eds.). *Sustainable business practices: challenges, opportunities, and practices*. Praeger Press.
- Avlonitis, G. J., & Gounaris, S. P. (1997). Marketing Orientation and Company Performance: Industrial vs. Consumer Goods Companies. *Industrial Marketing Management*, 26(5), 385–402.
- Banerjee, S. B. (2001). Corporate environmentalism: The construct and its measurement. *Journal of Business Research*, 55, 177–191.
- Bansal, P., & Roth, K. (2000). Why do companies go green: A model of ecological responsiveness. *Academy of Management Journal*, 43(4), 717–736.
- Berg, B. L. (2009). *Qualitative research methods for the social sciences*. Boston: Allyn & Bacon.
- Blankson, C., & Kalafatis, S. P. (2004). The development and validation of a scale measuring consumer/customer-derived generic typology of positioning strategies. *Journal of Marketing Management*, 20, 5–43.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- Brindley, C., & Oxbrow, L. (2014). Aligning the sustainable supply chain to green marketing needs: A case study. *Industrial Marketing Management*, 43, 45–55.
- Callon, M. (2007). An essay on the growing contribution of economic markets to the proliferation of the social. *Theory, Culture and Society*, 24(7–8), 139–163.
- Carbone, V., & Moatti, V. (2011). Towards greener supply chains: an institutional perspective. *International Journal of Logistics Research and Applications*, 14(3), 179–197.
- Chamorro, A., Rubio, S., & Miranda, F. J. (2009). Characteristics of Research on Green Marketing. *Business Strategy and the Environment*, 18(4), 228–239.
- Chan, H. K., He, H., & Wang, W. Y. (2012). Green marketing and its impact on supply chain management in industrial markets. *Industrial Marketing Management*, 41(4), 557–562.
- Chan, R. Y., He, H., Chan, H. K., & Wang, W. Y. (2012). Environmental orientation and corporate performance: The mediation mechanism of green supply chain management and moderating effect of competitive intensity. *Industrial Marketing Management*, 41(4), 621–630.
- Chan, R. Y. K. (2005). Does the natural-resource-based view of the firm apply in an emerging economy? A survey of foreign invested enterprises in China. *Journal of Management Studies*, 42(3), 625–672.
- Charter, M., Peattie, K., Ottman, J. A., & Polonsky, M. (2002). *Marketing and Sustainability, Association with the Centre for Sustainability Design*. Cardiff: Centre for Business Relationships, Accountability, Sustainability and Society (BRASS).
- Chen, Y. (2010). The drivers of green brand equity: Green brand image, green satisfaction, and green trust. *Journal of Business Ethics*, 93, 307–319.
- Chiou, T., Chan, H. K., Lettice, F., & Chung, S. H. (2011). The influence of greening the suppliers and green innovation on environmental performance and competitive advantage in Taiwan. *Transportation Research Part E: Logistics and Transportation Review*, 47(6), 822–836.
- Devellis, R. F. (2011). *Scale Development: Theory and Applications (Applied Social Research Methods)* (3rd ed.). Sage: Los Angeles.
- Drumwright, M. (1994). Socially responsible organizational buying: Environmental concern as a non-economic buying criterion. *Journal of Marketing*, 58(3), 1–19.
- D'Souza, C., Taghian, M., Sullivan-Mort, G. M., & Gilmore, A. (2015). An evaluation of the role of green marketing and a firm's internal practices for environmental sustainability. *Journal of Strategic Marketing*, 23(7), 600–615.
- Earl, G., & Clift, R. (1999). Environmental performance: What is it worth?, A case study of “business-to-business” consumers. In M. Charter, & M. J. Polonsky (Eds.). *Greener Marketing: a global perspective on greening marketing practice* (pp. 255–274). Sheffield, UK: Greenleaf Publishing.
- EcoVadis (2017). Ecovadis cracks the code for supply chain stewardship. Accessed April 18, 2018 at <http://www.ecovadis.com/library/ecovadis-cracks-code-supply-chain-stewardship/>.
- Elkington, J. (1997). *Cannibals with Forks: The Triple Bottom Line of the 21st Century Business*. Oxford, England: Capstone Publishing.
- Engardio, P., Capell, K., Carey, J., & Hall, K. (2007). Beyond the green corporation; Imagine a world in which eco-friendly and socially responsible practices actually help a company's bottom line. It's closer than you think. *BusinessWeek*, 4019.
- EnviroMedia Social Marketing (2018). Greenwashing index. Accessed April 22, 2018 at <http://www.greenwashingindex.com/about-greenwashing/>.
- Ezzy, D. (2002). *Qualitative Analysis: Practice and Innovation*. London: Routledge.
- Federal Trade Commission (2015). Wet wipe manufacturer agrees to substantiate “flushability” advertising claims under settlement with FTC. *Media Release ay*, 18, 2015. Accessed April 23, 2018 at <https://www.ftc.gov/news-events/press-releases/2015/05/wet-wipe-manufacturer-agrees-substantiate-flushability>.
- Finch, J., Horan, C., & Reid, E. (2015). The performativity of sustainability: Making a conduit a marketing device. *Journal of Marketing Management*, 31(1–2), 167–192.
- Fraj, E., Martinez, E., & Matute, J. (2013). Green marketing in B2B organizations: An empirical analysis from the natural-resource-based view of the firm. *Journal of Business & Industrial Marketing*, 28(5), 396–410.
- Fried, R. (2013). Walmart greenwashes its way to sustainability. Sustainable business network. Accessed April 23, 2018 at <http://www.sustainablebusiness.com/walmart-greenwashes-its-way-to-sustainability-52004/>.
- Gilliland, D. I., & Thomas, W. J. (1997). Toward a model of business-to-business marketing communications effects. *Industrial Marketing Management*, 26, 15–29.
- Glaser, B. G., & Strauss, A. (1967). *The discovery of grounded theory*. New York, US: Aldine.
- Hair, J. F., Black, W. C., Babin, B. J., & Andersen, R. E. (2014). *Multivariate Data Analysis* (7th ed.). London: Pearson.
- Hall, C. M. (2000). Tourism and the environment: Problems, institutional arrangements and approaches. In C. Michael Hall, & S. Page (Eds.). *Tourism in South and Southeast*

- Asia: *Issues and cases* (pp. 94–103). Oxford: Butterworth Heinemann.
- Hart, S. L. (1995). A natural resource-based view of the firm. *The Academy of Management Review*, 20(4), 986–1014.
- Hartman, P., Ibáñez, V. A., & Sainz, J. F. (2005). Green branding effects on attitude: Functional versus emotional positioning strategies. *Marketing Intelligence & Planning*, 23(1), 9–29.
- Hines, P. (1993). Integrated materials management: The value chain redefined. *The International Journal of Logistics Management*, 4(1), 13–22.
- Hinkin, T. R. (1995). A review of scale development practices in the study of organizations. *Journal of Management*, 21(5), 967–988.
- Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods*, 21(1), 104–121.
- Iles, A. (2006). Shifting to green chemistry: The need for innovations in sustainability marketing. *Business Strategy and the Environment*, 17(8), 524–530.
- Judge, W. Q., & Douglas, T. J. (1998). Performance implications of incorporating natural environmental issues into the strategic planning process: An empirical assessment. *Journal of Management Studies*, 35(2), 241–262.
- Kärnä, A., & Heiskanen, E. (1998). The challenge of 'product chain' thinking for product development and design: The example of electrical and electronic products. *Journal of Sustainable Product Design*, 4.
- Kennedy, A., Kapitan, S., & Soo, S. (2016). Eco-Warriors: Shifting sustainable retail strategy via authentic retail brand image. *Australasian Marketing Journal*, 24(2), 125–134.
- Kumar, V., & Christodouloupoulou, A. (2014). Sustainability and branding: An integrated perspective. *Industrial Marketing Management*, 43, 6–15.
- Luscombe, R. (2017). Top US firms including Walmart and Ford oppose Trump on climate change. *The Guardian*. Dec. 1, 2017. Accessed on April 18, 2018 at <https://www.theguardian.com/environment/2017/dec/01/trump-climate-change-paris-withdrawal-ford-walmart>.
- McFarland, R. G., Bloodgood, J. M., & Payan, J. M. (2008). Supply chain contagion. *Journal of Marketing*, 72(March), 63–79.
- Menon, A., & Menon, A. (1997). Enviropreneurial marketing strategy: The emergence of corporate environmentalism as market strategy. *Journal of Marketing*, 61(1), 51–67.
- Min, H., & Galle, W. P. (1997). Green Purchasing Strategies: Trends and Implications. *International Journal of Purchasing and Materials Management*, 21(9), 1222–1238.
- Mitchell, S. (2013). Walmart's assault on the climate. *Institute for Local Self-Reliance*. Accessed April 23, 2018 at <https://ilsr.org/walmart-climate/>.
- Morton, B. (1996). The Role of Purchasing and Supply Management in Environmental Improvement. *Proceedings of the 1996 business strategy and the environment conference* (pp. 136–141). Leeds: ERP Environment.
- Mudambi, S. (2002). Branding importance in business-to-business markets: Three buyer clusters. *Industrial Marketing Management*, 31, 525–533.
- Mudambi, S., Doyle, P., & Wong, V. (1997). An exploration of branding in industrial markets. *Industrial Marketing Management*, 26, 433–446.
- Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.
- Nyilasy, G., Gangadharbatla, H., & Paladino, A. (2014). Perceived greenwashing: The interactive effects of green advertising and corporate environmental performance on consumer reactions. *Journal of Business Ethics*, 125(4), 693–707.
- Oruezabal, G., & Rico, J. (2012). The impact of sustainable public procurement on supplier management – the case of French public hospitals. *Industrial Marketing Management*, 41(4), 573–580.
- Paulhus, D. L. (1998). *Manual for the Paulhus deception scales: BIDR Version 7*. Toronto: Multi-Health Systems.
- Peattie, K. (1992). *Green marketing*. London, UK: Pitman Publishing.
- Peattie, K., & Charter, M. (2003). Green marketing. In M. J. Baker (Ed.), *The marketing book* (pp. 726–756). (5th ed.). Butterworth-Heinemann.
- Peattie, K., & Ratnayaka, M. (1992). Responding to the Green Movement. *Industrial Marketing Management*, 21(2), 103–110.
- Penn, I. (2016). California to investigate whether Exxon Mobil lied about climate-change risks. *Los Angeles Times*, Jan, 20, 2016. Accessed April 16, 2018 at <http://www.latimes.com/business/la-fi-exxon-global-warming-20160120-story.html>.
- Pierre, K. (2008). Green suppliers network. OECD-UNEP conference on resource efficiency, April 23, 2008, Paris. Accessed on April 22, 2018 at <https://www.oecd.org/env/indicators-modelling-outlooks/Pierre.pdf>.
- Polonsky, M. J., Brooks, H., & Henry, P. (1998). An explanatory examination of environmentally responsible straight rebuy purchases in large Australian organizations. *Journal of Business & Industrial Marketing*, 13(1), 54–69.
- Porter, M. E., & Van der Linde, C. (1995). Green and competitive: Ending the stalemate. *Harvard Business Review*, 73(5), 120–133.
- Posner, B. Z., Kouzes, J. M., & Schmidt, W. H. (1985). Shared values make a difference: An empirical test of corporate culture. *Human Resource Management*, 24(3), 293–309.
- Pujari, D., Peattie, K., & Wright, G. (2004). Organizational antecedents of environmental responsiveness in industrial new product development. *Industrial Marketing Management*, 33(5), 381–391.
- Ritchie, J., & Lewis, J. (Eds.). (2003). *Qualitative research practice: A guide for social science students and researchers*. London: Sage Publications.
- Russo, M. V., & Fouts, P. A. (1997). A resource-based perspective on corporate environmental performance and profitability. *Academy of Management Journal*, 40(3), 534–559.
- Schumacker, R. E., & Lomax, R. G. (2004). *A beginner's guide to structural equation modeling* (2nd ed.). Mahwah, New Jersey: Erlbaum.
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*. Boston: Houghton Mifflin.
- Sharma, A., Gopalkrishnan Iyer, G. R., Mehrotra, A., & Krishnan, R. (2010). Sustainability and business-to-business marketing: A framework and implications. *Industrial Marketing Management*, 39(2), 330–341.
- Sharma, S., & Vredenburg, H. (1998). Proactive corporate environmental strategy and the development of competitively valuable organizational capabilities. *Strategic Management Journal*, 19(8), 729–753.
- Simula, H., Lehtimäki, T., & Salo, J. (2009). Managing greenness in technology marketing. *Journal of Systems and Information Technology*, 11(4), 331–346.
- Sorger, S. (2012). *Marketing Planning: Where Strategy Meets Action*. Upper Saddle River, New Jersey: Pearson.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: grounded theory procedures and techniques*. Newbury Park: Sage.
- Suering, S., & Müller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. *Journal of Cleaner Production*, 16, 1699–1710.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53–55.
- Taylor, S., & Bogdan, R. (1998). In-depth interviewing. *Introduction to Qualitative Methods: A Guidebook and Resource* (pp. 87–116). New York, US: John Wiley and Sons Inc.
- United Nations (1987). *Report of the world commission on environment and development – our common future*. Brundtland Report, United Nations General Assembly. available at: www.worldinbalance.net/agreements/1987-brundtland.php.
- Vachon, S., & Klassen, R. D. (2008). Environmental management and manufacturing performance: The role of collaboration in the supply chain. *International Journal of Production Economics*, 111, 299–315.
- Wang, Z., Wang, Q., Zhang, S., & Zhao, X. (2018). Effects of customer and cost drivers on green supply chain management practices and environmental performance. *Journal of Cleaner Production*. <https://doi.org/10.1016/j.jclepro.2018.04.071>.
- Watson, B. (2016). The troubling evolution of corporate greenwashing. *The Guardian*. (Saturday 20th August) retrieved April 22nd 2018 from <https://www.theguardian.com/sustainable-business/2016/aug/20/greenwashing-environmentalism-lies-companies>.
- Zauskova, A., Bezakova, Z., & Grib, L. (2015). Marketing communication in eco-innovation process. *Procedia Economics and Finance*, 34, 670–675.