



Economic, organizational, and environmental capabilities for business sustainability competence: Findings from case studies in the fashion business

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ABSTRACT

Business sustainability has received considerable attention in academia and industry. Accordingly, we use a multiple-case design to study the outcomes of business sustainability capability implementation. Using a two-phase data collection approach and resource-based view, we developed a conceptual model to illustrate the importance of business sustainability capability and business sustainability competence and their influence on firm performance. On the bases of the results from a case analysis of three Fortune 500 corporations in the fashion and textile industries, we show how three business sustainability capabilities (i.e., organizational, environmental, and economic competencies) affect business sustainability competence and consequently firm performance. Using in-depth case studies, we develop a set of propositions on how business sustainability competence associates with firm performance. This study was conducted over three years and demonstrates the importance of business sustainability capabilities by confirming the impact of economic competence in the context of market-driven competence and innovation, organizational competence in the context of managerial competence and social well-being, and environmental competence in the context of application of the five Rs (i.e., re-imagine, redesign, reuse, recycle, and reduce). This study thus provides valuable insights into how business sustainability capability and business sustainability competence enhance firm performance in the global fashion business.

1. Introduction

Although the fashion and textile industry (except for the luxury and high-end market) has been considered a low-value manufacturing industry in recent years (Choi, Lo, Wong, Yee, & Ho, 2012), global trends indicate that consumers have become increasingly value-conscious at the same time, thereby highlighting the role of customers as the key to success (Tam, Chan, Chu, Lai, & Wang, 2005). Adapting successfully to these changes requires industry players to enhance their product competitiveness by considering price, quality, and product variety, among other factors. Caniato, Caridi, Crippa, and Moretto (2012) revealed that business sustainability initiatives are vital to company strategies, especially in the fashion industry. These strategies include effective use of internal and natural resources and collaboration, which is increasingly relevant in an industry characterized by a short lifecycle and high competition. Public attention to the apparel and fashion industry has increased because of the trend toward faster, more complex

apparel and fashion supply chains, as it increased the industry's environmental and ecological footprint and generated sustainability concerns (Seuring & Muller, 2008). Several notable industry scandals have occurred, such as the revelation that Wal-Mart and GAP sell apparel made in factories associated with pollution and unhealthy working conditions. Such occurrences have increased companies' interest in strengthening their business sustainability capabilities.

According to Dyllick and Hockerts (2002), the business environment is characterized by stiff competition, high market uncertainty, economic uncertainty, constant change, and environmental concerns. All these challenges point toward business sustainability competence. Firms must respond promptly to market changes and challenges to sustain their competitive advantage and to grow. Sustainability competence is valuable and path-dependent when firms are under external stakeholder pressure (Paulraj, Chen, & Blome, 2017). Indeed, it is critical to the survival of a firm in a changing environment (Naude, 2012). However, a serious lack of case analysis exists on how business sustainability

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supports firm performance. Thus, our study sought to address this research problem.

Management research (refer to Appendix A) has focused on the importance of business sustainability competence in dealing with such uncertainties and challenges. Numerous articles have focused on the antecedents or enablers of business sustainability competence, which consists of organizational competence (Cheng, Wei, & Lin, 2019; Edinger-Schons, Lengler-Graiff, Scheidler, & Wieseke, 2019), economic competence (Pan & Nguyen, 2015), and environmental competence (Beh, Ghobadian, He, Gallear, & O'Regan, 2016). Several studies have focused on the relationships of these factors, such as organizational competence and economic competence (Sivarajah, Irani, Gupta, & Mahroof, 2020), economic competence and environmental competence (Hsu, Tan, & Mohamad Zailani, 2016; Jin, Shi, & Park, 2018), and organizational competence and environmental competence (Rezaee & Tuo, 2019; Khojastehpour & Shams, 2019). However, from the stakeholder's perspective, the effectiveness of business sustainability competence is determined by all these components. Few studies have been conducted that linked business sustainability capabilities to business sustainability competence. We believe that business sustainability competence has a mediating effect on business sustainability capabilities to firm performance in view of the fact that all firms with business sustainability capabilities have excellent performance. Thus, we are interested in investigating the relationship between business sustainability capability and business sustainability competence.

This study addresses four research questions:

RQ1. How does business sustainability competence enhance firm performance in the fashion industry?

RQ2. What entities encompass business sustainability capability and support business sustainability competence?

RQ3. How do organizational, environmental, and economic capabilities enable business sustainability competence?

RQ4. What can companies do to achieve business sustainability competence?

On the bases of the stakeholder theory, resource-based view, dynamic capabilities view, and a literature review, we develop a new research model to determine the relationship between business sustainability capabilities and business sustainability competence. Strategic implications are derived showing how capabilities may be used strategically to manage business sustainability competence. Business sustainability capability is conceptualized to have three components: organizational competence in terms of social well-being and managerial competence (Lamb et al., 1984; Lado, Boyd, & Wright, 1992; Lado et al., 1994; Harvey, McIntyre, Moeller, & Sloan, 2012); environmental competence in terms of the application of the five Rs (re-imagine, redesign, recycle, reuse, and reduce) (Hoffman, 2000; Choi et al., 2012); and economic competence, in terms of market-driven competence and innovation (Lado et al., 1992; Johnnessen et al., 2001b; Cagnin, Lovridge, & Butler, 2005; Yolles, 2009). In this study, we first develop a conceptual framework for the causal relationships among business sustainability capability, business sustainability competence, and firm performance. We then validate the model through three case studies of the fashion business. This study provides a theoretical foundation to assess the individual causal relationships among the constructs discussed.

2. Theory, literature review, and research framework

2.1. Business sustainability capability/business sustainability competence

Aspects of business sustainability have been around for a long time (e.g., Carson, 1962). Appendix A summarizes the major studies of business sustainability in the past ten years. It classifies the works reviewed in terms of year, author, and types of study. It involves the findings from this research and the identification of pillars of business sustainability competence in these studies. In selecting published

articles for our literature review, we use the framework for the selection and evaluation of articles developed by Ngai, Xiu, and Chau (2009) to select and evaluate the potential articles for review. As illustrated in Fig. 1, this framework has three different phases: (1) online database search, (2) initial classification by the first researcher, and (3) independent verification of the classification results by the second researcher.

Initially, five dominant online databases (i.e., ABI/INFORM, Academic Search Premier [EBSCO], Emerald Journals [Emerald], JSTOR Business SAGE Journals, Science Direct) were selected. Conference papers, dissertations, newspapers, textbooks, theses, and unpublished papers are excluded, and this action confined the review to the literature only found in articles referenced by these databases. The review focused on the core of academic research activity. By using keywords to direct the search, we selected those articles only related to business sustainability and corporate sustainability; we filtered the articles by using the keywords “organizational competence,” “environmental competence,” and “social competence.” The key factors included in the search were “managerial competence,” “social well-being,” “Five-R applications,” “market-driven competence,” and “innovation.” The sample was limited to 9 years, spanning from 2011 to 2020. Overall, 38 articles were obtained from 14 journals. To develop a classification framework, each article was thoroughly reviewed and analyzed by two independent researchers to reduce bias. Each reviewer provided his/her views on (1) the study specified in each paper; (2) the data source; (3) sample size; (4) dependent variable; (5) independent variable; (6) pillars of business sustainability competence; and (7) major findings of each paper. Furthermore, each article was classified according to the year of publication and authors.

Business sustainability can be defined as the capacity to meet the requirements of indirect and direct corporate stakeholders, such as suppliers, customers, employees, and society (Van Kleef & Roome, 2007; De Brito, Carbone, & Blanquart, 2008). Brindley and Oxborrow (2014) further elaborated that capability, defined as an organization's managerial capacity to utilize its competencies (or combined resources), is crucial for integrating supply chain members and buyer-supplier relationships and ensuring the adaptability required for responsive supply: such a combination of capacities and capabilities is necessary to meet customer requirements. Sustainability capability in manufacturing can be defined as the ability to combine manufacturing practice with operational practices in design, distribution, use, product service, and governance for innovative and marketable combinations of services and products that contribute to sustainability (Holmstrom, Liotta, & Chaudhuri, 2017). Kumar and Christodouloupoulou (2014) developed a typology of sustainability capabilities that categorizes them according to intent (legal, discretionary, or ethical), focus (external vs. internal), and emphasis (environmental vs. social); they suggested that marketing assets should be influenced by sustainability initiatives. Laverdure and Conn (2012) further pointed out that business sustainability capability is the information required by an enterprise to integrate essential capabilities and flexibility into future architecture; meanwhile, a firm's sustainable business management must meet the requirements of stakeholders in different economic, environmental, and organizational positions within the network (Van Kleef & Roome, 2007). As explained by the resource-based view, firms are bundles of resources including rent-generating and sustainable organizational capabilities (Pan, Pan, Chen, & Hsieh, 2007). Firms turn asymmetries (e.g., skills and processes) into sustainable capabilities (Miller et al., 2003). However, some firms under-invest in sustainability capabilities in response to supply chain disruptions (Speier, Whipple, Closs, & Voss, 2011). Strauss, Lepoutre, and Wood (2017) also found that reducing pollution requires changes to the production operations and work practices of an organization, indicating that sustainability capabilities in this context require individual compliance with and support of behavioral change.

According to stakeholder theory, firms have responsibilities to their stakeholders and interest groups (Freeman, 2010). Stakeholders are

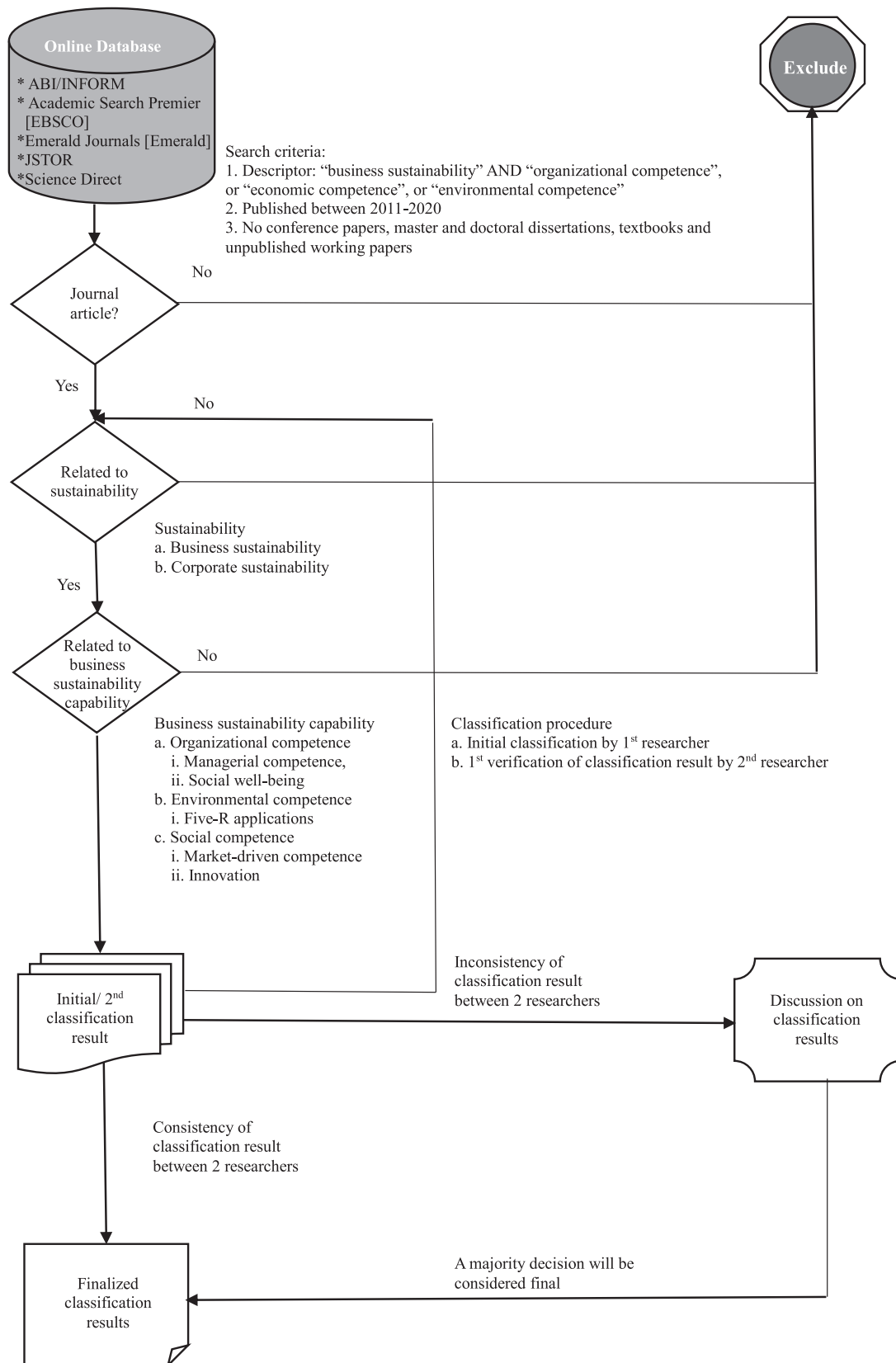


Fig. 1. Framework of selection criteria and evaluation process – Adapted from Ngai et al. (2009).

sources of information which is significant to the firm to achieve business sustainability (Ayuso, Ángel Rodríguez, García-Castro, & Ángel Ariño, 2011; Svensson, 2018). Previous studies on business sustainability attempt to explain the relationship among environmental, social, and environmental performance (Law & Gunasekaran, 2012). In fact, stakeholder theory is a major conceptual approach which emphasizes on the linkages between society and business (Brammer, Pavelin, & Porter, 2006; Khojastehpour & Shams, 2019), and it aims to maximize the value for all stakeholders that interact with the firm (Moeller, Harvey, Griffith, & Richey, 2012). By building sustainable relationships to stakeholders outside and inside the firm and then coordinating them for common objectives (e.g., triple bottom-line goals), business sustainability eventually helps firms achieve a shared and good business vision (Gibson, 2012).

Mixing and matching resources and conceptualizing the dynamics of managing and implementing organizational routines in a competitive market are vital for organizations to meet unique customer needs (Pan et al., 2007). Wals et al. (2014) defined sustainability competence as the competence to deal with future plans, predictions, and expectations, with a forward-looking perspective to deal with uncertainty. Organizations develop sustainable competencies in hopes of a future payoff in terms of innovation and repositioning (Dhanda et al., 2013). Das and Handfield (1997) also revealed that procurement plays an important role in developing sustainable competencies in enterprises by importing value in the form of supplier capabilities into the organization.

From an analysis of the academic literature, we found that organizational, environmental, and economic dimensions are essential to the construction of business sustainability capability, because each dimension reflects the capacity of a firm to develop its business sustainability competence. Fig. 2 presents a Venn diagram of their relationships. Business sustainability competence is conceptualized as a component of firm's competitive capability enabled by business sustainability capability, which comprises organizational, environmental, and economic competencies. For example, with regard to the economic dimension, the shift of production to the Asia-Pacific region in recent years has decreased the growth of the apparel industry in the U.S. and Europe (Mayer & Pickles, 2011). With regard to the organizational dimension in social aspects, brands such as GAP and Wal-Mart have been affected by sweatshop scandals, which have increased consumer awareness of corporate social responsibility (CSR) and ethics in clothing production

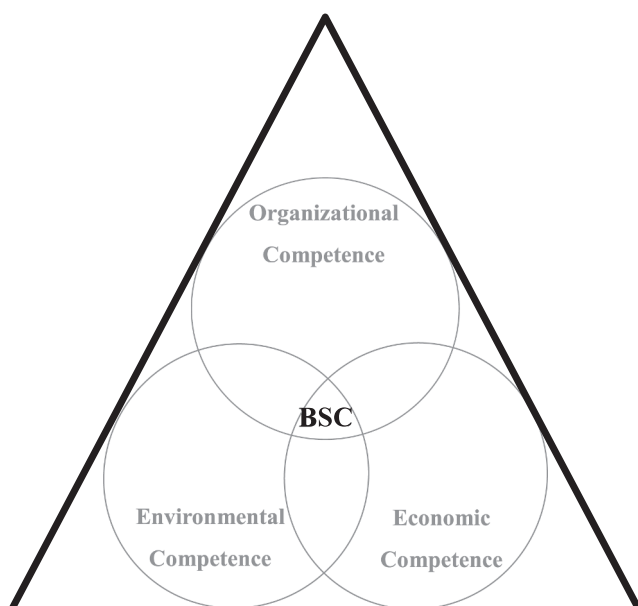
(De Brito et al., 2008). With regard to the environmental dimension, garment factories and their suppliers make intensive use of chemicals (i.e., for dyeing and finishing apparel), which then increases the demand for water. The three antecedent conditions (i.e., organizational, environmental, and economic competencies) in the Venn diagram represent all combinations of the presence and absence of each antecedent. For example, the combination of high organizational, high environmental, and high economic competencies likely associate with high sustainability, but few firms tend to be high on all three antecedents. Fig. 2 shows the net effects of these three antecedents.

Our study uses stakeholder perspective, resource-based view, and dynamic capabilities view to explain underlying causal arguments. Drawing from stakeholder theory, an organization's commitment to environmental and social responsibility develops strong stakeholder relationships, which produce vital and intangible capabilities and resources for the organization (Surroca, Tribó, & Waddock, 2010). According to resource-based view and dynamic capabilities view, capabilities and resources reduce stakeholder conflicts (Hillman & Keim, 2001), strengthen customer loyalty (Gao & Bansal, 2013), improve (Backhaus, Stone, & Heiner, 2002), and build (Surroca et al., 2010) the attractiveness of a firm. Meanwhile, environmental and social investments may also enhance innovation and operational efficiencies (Gao & Bansal, 2013). The succeeding sections explain the effects of a firm's business sustainability capability on its business sustainability competence, and Fig. 3 presents the research model. Table 1 defines the major constructs of our proposed framework and research model.

2.2. Organizational competence

Organizational competence concerns the ability to develop, select, and implement value-enhancing strategies to improve the competitive advantages of an organization (Lado et al., 1994). Hendriks (1999) described organizational competence as pooled competence and therefore distinct from but linked to the competencies of individuals. Capabilities include the concept of organizational competencies in business processes and routines, while organizational competence refers to firm-specific knowledge, skills, assets, and capabilities relative to the firm's technology, processes, interpersonal relationships, and structure (Bharadwaj et al., 2000). Simola (2007) defined organizational competence as "native capability" in sustainable global enterprises. In view of the differences in the competitive position and size of firms, organizational competencies are heterogeneous and are distributed unevenly across firms (Conner, 1991; Lamb, 1984). Lorenzoni and Lipparini (1999) defined distinctive organizational competence as the ability of firms to share knowledge and interact with other companies. However, the increasing difficulty of learning from external sources for older firms was noted, especially when the environment is turbulent (Gopalakrishnan & Bierly, 2006). Top management is also a critical factor in the learning processes (Lowendahl & Revang, 1998). The resource-based view suggests that firms possess unique resources, which give rise to competitive advantages and organizational competencies (Lin & Darnall, 2015), and these sustainable competitive advantages are imperfectly imitable by competing firms (Ogbonna & Harris, 2002).

The resource-based theory has been widely advocated (Barney, 1991; 2001), and firms with scarce, valuable, and non-substitutable resources can help scholars gain a sustainable competitive advantage. A particularly important competence is managerial competence or capability, which can affect employees' sense of fulfillment and job outcomes (Granstrand, 1998; Du, Bhattacharya, & Sen, 2015). Another important competence is social well-being, which refers to firms' commitment to work in an economically and sustainable environment by identifying their shareholder's interests (Amaeshi, Osuji, & Nnodim, 2008). Organizational competencies include structural, cross-functional coordination, and culture, which play a vital role in entrepreneurial market orientation (Berghman, Matthyssens, & Vandenbempt, 2006; Vesalainen & Hakala, 2014). Scholars have also pointed out that



Note: BSC = Business Sustainability Competence

Fig. 2. Conceptual Framework of Business Sustainability Competences.

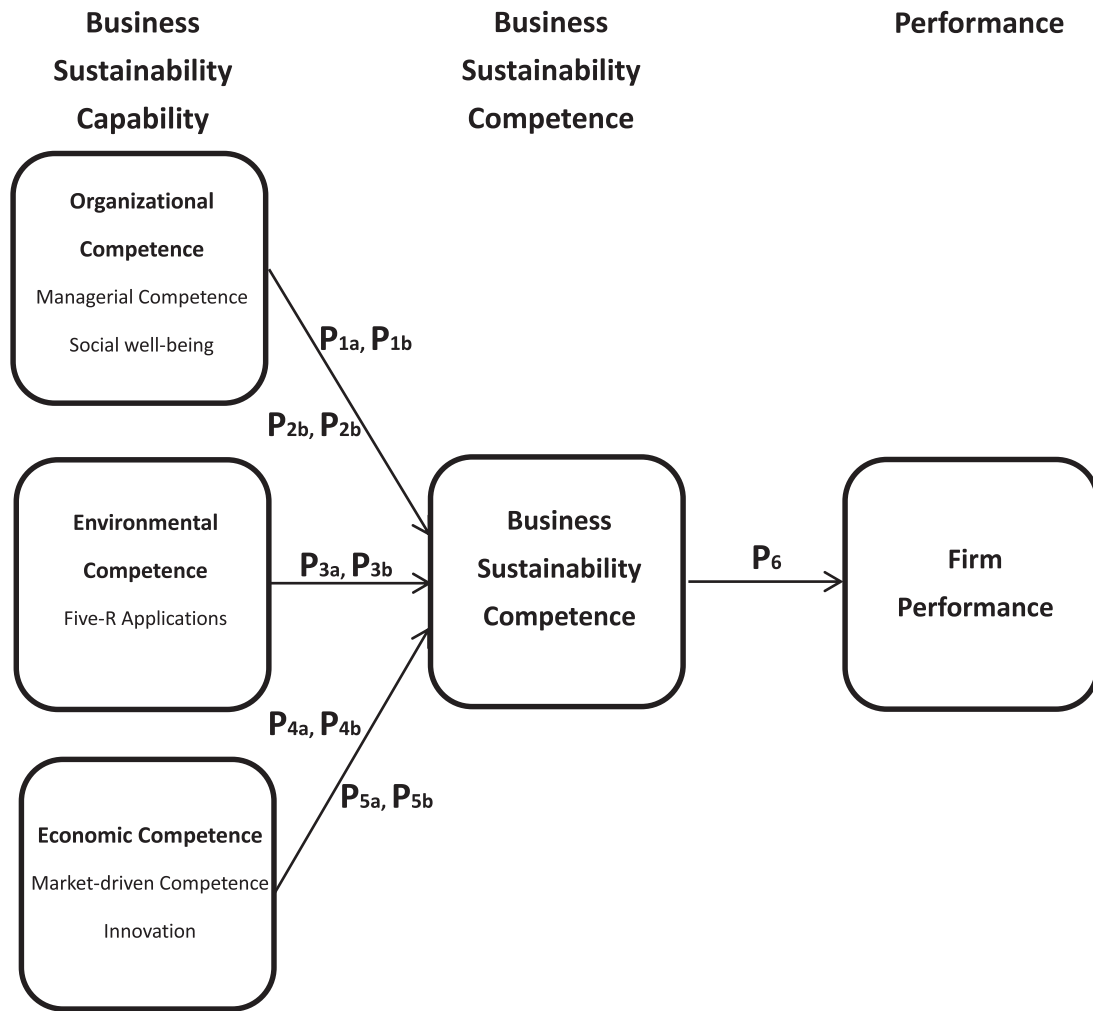


Fig. 3. Research Model.

organizational competence includes transactional competence (i.e., deciding whether to buy or manufacture an item), administrative competence (i.e., designing organizational policies and structures for efficient performance), and allocative competence (i.e., deciding what and how to produce) (Omamo & Lynam, 2003). Product R&D, basic internal engineering, and market research are important to CEOs when maintaining and developing organizational competencies in key technologies through innovation (Garg, Walters, & Priem, 2003). Investments in organizational competencies can be measured through involvement in functional areas such as accounting and financing, production, purchasing, transportation, storage, product design and R&D, marketing and sales, human resources, and environment management (Buysse & Verbeke, 2003). Managerial competence and social well-being are the key components of organizational competence and are the cornerstones of excellence.

2.2.1. Managerial competence

Managerial competence includes the unique capabilities of leaders to (a) develop a beneficial firm-environment relationship and (b) communicate and articulate their vision throughout the organization (Lado et al., 1992; Spence, Gherib, & Biwolé, 2011; Wittmann, Hunt, & Arnett, 2009). Previous studies have pointed out that managerial competence can be developed by learning from experience, framing problems, gathering information, and reaching conclusions; it can also be generated via behavioral and cognitive characteristics that are unique to a firm's top management team or decision makers (Kefalas, 1998). The managerial competencies defined by Lado and Wilson

(1994) are regarded as attributes because they determine the deployment, development, and acquisition of organizational resources. These attributes sustain competitive advantage throughout the transformation of these resources into potent sources of valuable products and managerial rents. Harvey et al. (2012) shared the same viewpoint. Managerial competence also reflects the leader's capability to develop and communicate a vision of inter-firm relationships (Lado, Boyd, & Hanlon, 1997). Market competition indirectly enhances managerial competencies through the efficient utilization of resources (Attig & Cleary, 2015), and improving managerial competence yields large profits (Makadok et al., 2003). Extra managerial competencies are required in international joint ventures (IJV) as illustrated by Child and Yan (2003).

Top management exercises their managerial competencies primarily in maximizing profits or reducing costs (Soltani, Syed, Liao, & Iqbal, 2015), and managerial competencies can be improved by increasing managers' awareness of labor standards (Arevalo & Aravind, 2017; Frostenson, 2016; Lin-Hi & Blumberg, 2017). A firm's organizational identity is built on managerial competencies (Agarwal, Osiyevskyy, & Feldman, 2015), and the latter establishes sustainable competitive advantage (Wittmann et al., 2009). Firms that are growing rapidly must proactively add new capabilities and managerial competencies; otherwise, their capabilities and skills will soon become obsolete (Boeker & Karichalil, 2002).

2.2.2. Social well-being

The other factor that drives organizational competence is social well-being. Social well-being refers to an organization's ability to enhance

Table 1
Definition of the major constructs of the proposed conceptual framework.

Construct	Definition	References
Business Sustainability Capability	The ability to combine manufacturing practice with operational practices in design, distribution, use, product service, and governance for innovative and marketable combinations of services and products that contribute to sustainability.	Holmstrom et al. (2017)
Business Sustainability Competence	The competence to deal with uncertainty and think in forward-looking manner, with plans, expectations, and predictions for the future.	Wals et al. (2014)
Organizational Competence	The ability of an organization to implement, choose, and develop value-enhancing strategies to enhance the firm's competitive advantages; it includes all capabilities, skills, knowledge, and firm-specific assets embedded in the organization's processes, interpersonal (and intergroup) relationships, technology, and structure.	Lado et al. (1994)
Economic Competence	The ability of an organization to increase profits and deliver both social and environmental sustainability, which translates to the business sustainability; it includes tangibles such as manufacturing and financial capital.	Cagnin et al. (2005)
Environmental Competence	The organization's ability to use its corporate environmental practice to facilitate business sustainability.	Hoffman (2000)
Managerial Competence	The ability of firm management to plan for a beneficial firm-environmental relationship, to empower organizational members to realize this strategic vision, and communicate the strategic vision throughout the organization.	Lado et al. (1992)
Social well-being	The ability of an organization to deliver socially responsible services and products, improve labor conditions and standards, and enhance communities.	Lado et al. (1994)
Market-Driven Competence	The ability of an organization to satisfy and understand customers' future and current needs through development of new services and products to enhance its competitive advantage.	Fowler et al. (2000)
Innovation	A critical activity that is vitally important for most firms to embrace in order to create and sustain competitive advantages	Johannessen et al. (2001a)
Five-R Applications	An organization's ability to develop new knowledge or insights in the form of re-imagine, redesign, recycle, reduce, and reuse to influence business sustainability and enhance competitive advantage.	Choi et al. (2012)

communities, deliver socially responsible services and products, and improve labor conditions and standards (Lado et al., 1994). Social well-being is an input-based competence that encompasses knowledge, human resources, skills, physical resources, capabilities, and organizational capital, which enable a firm to provide services and products that are valued by customers (Lado et al., 1994). Social well-being is defined as the firm's ability to improve labor conditions and standards and encourage communities to provide socially responsible services and products (Mahler, 2007). Social well-being involves social integration, coherence, contribution, acceptance, and actualization (Mitchell,

Weaver, Agle, Bailey, & Carlson, 2016). Jackson and Young (2016) also pointed out that the literature on social capital (management), social network, complexity theory, and social psychology should be integrated to consider the interrelationship between social and other aspects of well-being; this area has been insufficiently considered in a business context rather than in sustainability and environmental research. Aside from the need to contribute to social well-being (Prahalad & Bettis, 1986; Prahalad & Hamel, 1990), growing environmental concerns in mass media and society have prompted consumers and government organizations to focus on CSR and business ethics (Konrad, Steurer, Langer, & Martinuzzi, 2006; Pajo & Lee, 2011). In this study, CSR is referred to an organization's activities and status concerned with its perceived societal interests and obligations (Brown & Dacin, 1997). Thus, companies, stakeholders, and consumers have become aware of the need for legitimate, verifiable data on the greening progress of a company. At the same time, requests for additional programs to enhance their awareness of such matters have increased. Thus, CSR is a method for reshaping corporate strategies to manage stakeholder uncertainty regarding products and firm behavior (Brenkert, 2002). CSR can also win the trust of stakeholders (Choi, Eldomiatiy, & Kim, 2007). Therefore, in promoting greener consumption, business planners and managers should focus more on customers than on their shop floors. Furthermore, De Brito et al. (2008) held that eco-labeling is a communication strategy in the B2C (business-to-consumer) context related to quality, environmental friendliness, and consumer safety, as exemplified by color stability in response to light exposure, color preservation during friction and washing, resistance to shrinkage during drying and washing, avoidance of substances dangerous to consumer health and the environment, and reduction of air and water pollution during fiber production. Gallastegui (2002) shared similar viewpoints on eco-labeling. Beske, Koplin, and Seuring (2008) similarly contended that firms must be held responsible for their products, and suppliers should be evaluated under a wider set of rules and requirements; hence, these firms should be pressured to supervise their suppliers to use processes and procedures that do not harm the environment and society. Pesticide Action Network¹ and Clean Clothes Campaign² are examples of campaigns against companies in the textile and clothing industries. If the public has environmental and social concerns about a company, it may boycott its products as was the case with Nike. Global players find themselves the target of severe criticism from non-governmental organizations and the public; they are placed in an increasingly exposed position, particularly in relation to their international brands (Seuring et al., 2006). Moreover, companies are expected to be accountable for the actions of their suppliers (Zhu, Sarkis, & Geng, 2005). The collective conduct of firms determines their overall performance in the industry (Porter et al., 1995).

The social dimension of sustainability is now apparent as shown in the increasing public expectations of firms to do more for social well-being (Choi & Ng, 2011; Hellsten & Mallin, 2006). Many challenges to social well-being require close collaboration between civil-society actors, businesses, and government (Panwar, Paul, Nybakk, Hansen, & Thompson, 2014; Stadler et al., 2017). In addition, social well-being contributes to stakeholders through meaningful relationships (Spiller, Pio, Erakovic, & Henare, 2011); for example, economic development is related to the concept of environmental benevolence in organizational research and is an indicator of social well-being (Chen et al., 2014). Economic value generated through such activities provides tax revenues for local governments and reliable income for employees, business owners, and their families; it consequently improves overall social well-being (Jung & Lee, 2016).

¹ <http://www.panna.org/>.

² <https://cleanclothes.org/>.

2.3. Environmental competence

Environmental competence is defined as a firm's ability to use corporate environmental practices to facilitate business sustainability, in a situation where economic competitiveness and environmental protection are increasingly intertwined (Hoffman, 2000). Marcus and Geffen (1998) described it as a distinctive competence and argued that organizations must acquire process-based or socially complex resources to attain high environmental competency, such as adopting an environmental management system (EMS) (Darnall & Edwards, 2006). Dibrell, Craig, Kim, and Johnson (2015) argued that a firm's overall capacity will increase by implementing natural environmental competency, such as improving environmental practices, performing tasks to benefit the environment, and suggesting ways to solve environmental problems (Dibrell et al., 2015). Darnall and Edwards (2006) also stated that when privately owned operations develop environmental competencies, such decisions are more often a response to supply chain requirements in networks of similar companies or to the requirements of manufacturers' associations rather than as initiatives of proactive managers within the firm.

Choi et al. (2012) pointed out that real-world pressures such as climate change and water shortages demand that firms consider ethical and environmental issues; and argued that extending the traditional supply chain can help (Ip et al., 2001). For example, environmental stewardship by firms can include increasing recycling, conserving resources and energy, minimizing harmful packaging, reducing the firm's carbon footprint, and consuming cleaner, renewable energy (Mahler, 2007). Porter and Van der Linde (1995) showed that innovative solutions to external pressures (including ecological pressures) can improve the value of products and processes. Shin, Ellinger, Nolan, DeCoster, and Lane (2016) used the natural resource-based view to link natural environmental competency, innovativeness, and organizational social consciousness. Environmental competencies include clean technology implementation, use of environmentally friendly materials, and reduction of pollution (Humphreys, McIvor, & Chan, 2003). Lopez-Gamero, Claver-Cortés, and Molina-Azorín (2008) further elaborated that pollution prevention is a strategic planning process involving multiple domains: investment in formal (routine-based) procedures and management systems, in organizational competencies, in participation and employee skills, and in manufacturing technologies and green products. Pollution (e.g., waste in energy and packaging, incomplete utilization of materials) can be reduced by enhanced resource productivity (Preuss, 2001). The preceding ideas suggest that a strong environmental competence improves business sustainability competence. Organizations have different strategic options in environmental competence, and five-R applications are deemed one dominant option for most interested researchers (Hvass, 2014; Khojastehpour & Shams, 2019; Nayak et al., 2020; Strahle & Muller, 2017) versus other options, such as four-R applications (Koszevska, 2016) or three-R applications (Chow & Li, 2018).

2.3.1. Five-R applications

Five-R applications refer to a firm's ability to develop insights or knowledge in the form of the recycle/reuse/reduce/re-design/re-imagine strategy, which influences business sustainability and enhances competitive advantage (Choi et al., 2012). Recycling is the process of collecting materials and turning them into raw materials for new products, such as the recycling of denim waste into its original fiber form; recycling is thus important for business sustainability (Shedroff, 2009). Reuse denotes the repeated use of materials in their original format, such as garment packaging, dress pins, and sewing needles. Reduction refers to source reduction or waste prevention when procuring fabric and trim material. Re-designing denotes the continual fine-tuning of the process to increase sustainability. Examples include re-designing products using ecologically friendly materials and re-designing a process using a mini-maker or advanced pattern maker to

reduce wastage. A similar approach was proposed by Esty and Winston (2009). Re-imagining connects to the process of production, and implementing new innovative techniques could enhance the supply chain (Henninger, Alevizou, Oates, & Cheng, 2015).

Corporations are introducing strategies related to the many "Rs" of environmental issues. These schemes include reclamation, reduction, recycling, remanufacturing, reuse, and recovery (Jayaraman, Patterson, & Rolland, 2003). Clean Retail refers to the three Rs (i.e., recycle, reduce, and reuse) of environmental policy and includes practices such as reduction of water use, waste, and energy; retailers are encouraged to carry out environmental audits, monitor procedures on a regular basis, set achievable goals, recycle all waste, and use less packaging (Spiller, 2000). Firms are also increasingly aware of the need for recycling, waste disposal, and reuse (Maloni & Benton, 1997). For example, Autry (2005) showed that alternative disposition (i.e., materials flowing backward from customer to supplier) in reverse logistics can ensure proper disposal and maximize the returned item's value, through source reduction, material substitution, waste disposal, repair, remanufacturing, refurbishing, reuse of materials, recycling, and product returns. In addition, a product's value can be upgraded in the remanufacturing process by restoring a used product to given aesthetic and operating standards (Souza, 2013; Shi, Gu, Chhajed, & Petrucci, 2016).

According to Powell et al. (2010), designers can "design for the environment" by focusing on environmentally friendly attributes of products, such as reusability, maintainability, recyclability, refurbishability, and disassembly as design objectives (Pujari, Peattie, & Wright, 2004). In fact, both the environmental and economic aspects of product recovery add attractiveness for many companies (Aras, Aksen, & Tanuğur, 2008; Faccio, Persona, Sgarbossa, & Zanin, 2014) in areas such as construction and demolition (C&D) waste management (Yuan & Wang, 2014). Scholars have argued that efficiently designed and operated supply chains minimize the negative environmental impacts of the entities involved (Cardoso, Barbosa-Póvoa, & Relvas, 2013; Bose & Pal, 2012; Guiltinan, 2009). For example, firms can (a) reduce liability by redesigning existing product systems, (b) achieve lower lifecycle costs in new product development, and (c) exit environmentally hazardous businesses through product stewardship (Hart, 1995). Kannan, de Sousa Jabbour, and Jabbour (2014) provided another example of the implementation of green supply chain management (GSCM) practices, such as product designs that reclaim, reuse, reduce or recycle energy, materials, or components; product designs that reduce or even avoid hazardous or toxic materials; commitment of management teams to GSCM; and compliance with auditing and legal environmental requirements. Based on the preceding arguments, five-R applications in a firm facilitate business sustainability competence throughout the implementation of green practices to satisfy the current demands of a firm without compromising future generations' ability to satisfy their own needs.

2.4. Economic competence

Economic competence refers to an organization's ability to profit while delivering environmental and social sustainability, which will in turn deliver business sustainability (Cagnin et al., 2005). Economic competence includes tangibles in both manufacturing and financial capital and acts as a selective/strategic ability to make innovative choices between organizational structures, technologies, products, and markets; acquire other key resources such as new competencies; engage in entrepreneurial activity; and select key personnel (García & Chavez, 2014). According to Choi et al. (2012) and Mahler (2007), economic prosperity involves fostering long-term competitiveness, managing and anticipating long-term risks, promoting profits, attracting customers, reducing costs, and creating jobs. By contrast, Yolles (2009) pointed out that increasing economic rent and expected returns are a firm's primary objective; in reality, stakeholders emphasize the economic development of supply chains over the long term rather than viewing profitability as valuable in itself (De Brito, 2008). Lado et al. (1992) indicated that firms

presumably allocate scarce resources to alternative ends to maximize profits; subsequently, these profits are partly reinvested to expand productive capacity. Dacin, Dacin, and Tracey (2011) argued that social entrepreneurs must simultaneously demonstrate their economic and social competence. By contrast, research indicates that significant economic influence can only be created by combining managerial, organizational, product, process, and technological innovations, because production processes, products, customers, and firms operate in highly interdependent dynamic systems (Van Kleef & Roome, 2007). Economic competence in an organization is driven by various factors, which include (1) innovation and (2) market-driven competence.

2.4.1. Innovation

Innovation is one of the dynamic capabilities (Schilke, Hu, & Helfat, 2018). The latter is defined as “the firm’s ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments” (Teece, Pisano, & Shuen, 1997, p. 516). Innovation is considered “a critical activity that is vitally important for most firms to embrace in order to create and sustain competitive advantages” (Johannessen et al., 2001a, p. 27). Molina-Castillo, Jimenez-Jimenez, and Munuera-Aleman (2011) illustrated that the introduction of new products depends on an organization’s ability to transform organizational competencies into reliable market input. Operational innovation focuses on searching for experimentation and variance to change associated organizational competencies and technology trajectories (Wu, Melnyk, & Flynn, 2010). According to Fowler, King, Marsh, and Victor (2000), technological competence is an organization’s ability to combine physical world knowledge in unique ways and convert this knowledge into instructions and designs for favorable outcomes throughout the innovation process. Technological competence is the basis of creating competitive advantage in a changing and dynamic environment, because it is essential for developing new services and products.

Dynamic capabilities view refers to a firm’s ability to integrate, build, and reconfigure its knowledge and resources to cope with environmental uncertainty (Teece et al., 2007; O’Reilly & Tushman, 2008). Previous studies have shown that the dynamic capabilities view can be seen as an extension of the resource-based view (Wernerfelt, 1984; Barney, 1991). The dynamic capabilities view fills the gap of the resource-based view by organizing appropriate capabilities and resources to deal with situation-specific changes (Eisenhardt & Martin, 2000) while considering contingency characteristics. Innovation is also a process of coming up with a new idea and applying it to solve a problem, thereby improving competitiveness and economic success with technological support. Productivity and competitiveness can be promoted through organizational and social innovations, while technological and product innovations can be used rather than process innovations to increase efficiency (Van Kleef & Roome, 2007). Four key drivers of innovation have been identified in innovation systems, namely, economic competence, interactive learning, institutions, and knowledge flows (Garcia & Chavez, 2014). Miller and Blais (1993) further elaborated that the actual modes of innovation are influenced by a firm’s specific organizational competencies by the industrial contexts in which they operate and by their formal strategies. Organizations can also decide to create new competencies to develop innovations over the long term or use existing organizational competencies for short-term results (Molina-Castillo et al., 2011). According to Lin (2012), firms with innovative orientation tend to align with heterogeneous partners to combine complementary and unique resources such as tacit knowledge-related resources to develop organizational competencies, which then leads to competitive advantage through strategic alliances.

Embracing innovation is critical for most firms, because it facilitates sustainable competitive advantages apart from being an important parameter for economic competence (Drucker, 1986). Industry players must develop other sophisticated methodologies to enhance product development (Tam et al., 2005). According to De Brito et al. (2008),

innovations also provide numerous opportunities to focus on specific stakeholders and market segments, such as ethnic minorities (whose numbers increase as people emigrate) and ecologically conscious customers. For example, utilizing new resources (e.g., organic cotton) attracts “green customers” and can be an instrument for product innovation. Retailers and major producers worldwide are increasingly engaging in biological textile production. To demonstrate, Wal-Mart has been selling organic cotton (Illge & Preuss, 2012). Similarly, brands such as Next, Target, C&A, H&M, and Reebok are beginning to use biological textile production. Indeed, organically grown fibers can actively promote the sustainability of organizations.

2.4.2. Market-driven competence

The other factor that drives economic competence is market-driven competence. Market orientation involves organizational competencies that are continuously refined and developed in a focal market to maintain competitive advantage (Morgan & Berthon, 2008). Menguc et al. (2006) revealed that market orientation is bundled together with innovativeness. This combination of resources causes difficulty for competitors in identifying the origin of the superior competitive advantage of a firm, which then leads to higher firm performance. Market-driven competence refers to a firm’s customer relations capabilities that help it outperform its rivals (Le Bon & Hughes, 2009). Market-driven firms closely align their product decisions with customers’ operations and prioritize customer-linking capabilities such as value-chain activities, delivery, handling, and service (Lin & Lin, 2006). Song, Droge, Hanvanich, and Calantone (2005) further elaborated that marketing-related capabilities are important resources for market-driven organizations and drivers of superior performance. They not only provide firms with a better understanding of customers’ needs for service improvements but enable firms to analyze the competition (Protogerou, Caloghirou, & Lioukas, 2011). Kohli et al. (1990) agreed that satisfying the articulated and unarticulated needs of customers requires companies to understand the present and past relationships, motivations, and structure of their customers.

In view of the different resources and capabilities required in market-driven economies, transformation is necessary for most companies, while resources and capabilities may become core competencies if properly analyzed, supported, and exploited (Newman, 2000). Market-driven competence pertains to an organization’s ability to satisfy the current and future needs of customers by developing new products and services, which similarly enhance competitive advantages (Fowler et al., 2000). Competencies can also be gained through partnerships (Elg, Deligonul, Ghauri, Danis, & Tarnovskaya, 2012). According to Lado et al. (1992), firms must deliver value via reliability, service, and quality to achieve a sustainable competitive advantage. This premise is supported by Day (1994), who elaborated that market-driven competence is based on recognizing customers’ future and current needs and their influences. Fowler et al. (2000) identified several measures of market-driven competence, including (a) the profile of the market competencies of competitors, (b) the number of competitors who serve customers, (c) on-time delivery, (d) response to customer requests, (e) customer complaints, (f) referred customers, (g) number and percentage of repeat customers, and (h) spending per customer.

Market-driven organizations thus affect changes in demand (Dickson, 1996; Slater & Narver, 1998), whereas companies must understand their customers and commit themselves to building on the market-driven competencies that are essential to serving and shaping customer needs in a changing environment. Effective resource allocation is market-driven and drives innovations in the existing market demanded by current customers (Christensen & Bower, 1996). A firm’s sustainable competitive advantage can serve as the foundation for developing new products and services.

2.5. Firm performance

Firm performance can be defined as the extent to which a firm performs well compared with its competitors (Rai, Patnayakuni, & Seth, 2006). Lavie (2006) further explained that a firm's competitive advantage depends on the scarcity of its resources, interactions, and combined values. For example, firms with high technological capabilities tend to perform well because they can innovate their processes to easily obtain competitive advantages by using technologies. These firms are highly innovative and can thus innovate and differentiate their products to respond to the dynamic market environment (Tzokas, Kim, Akbar, & Al-Dajani, 2015). Firm performance can be enhanced by forming strategic alliances or co-developer engagements in firm technology platforms for value co-creation. Firms can also achieve good performance by undertaking complex action repertoires (Gnyawali, Fan, & Penner, 2010). Rezaee (2016) explained that business sustainability improves firm performance by reporting an association between economic, environmental, and organizational performances. For example, economic performance can be measured by product variety (Bhagwat & Sharma, 2007), environmental performance can be measured by prevention of pollution (Hsu & Liu, 2010; Hart & Milstein, 2003), and organization performance can be measured by human rights (Lee & Saen, 2012). Table 2 shows the key performance indicators for measuring firm performance.

3. Methodology

A case study design is considered the most suitable methodology in view of the explanatory nature of our research (Yin, 2003). A qualitative case study groups the facts of a particular situation according to their details and is valuable for studies that focus on contemporary events or a natural setting (Yi, Ngai, & Moon, 2011). Our investigation has focused on how organizational, environmental, and economic competencies enable business sustainability competence and their relationships in enhancing firm performance, given that the literature review has not identified these relationships. In view of the high heterogeneity and complexity of the apparel industry, this study focuses on a narrow segment. Business sustainability competence is increasingly vital in the

Table 2
KPIs for measuring firm performance.

Domains	Indicator	References
Economic performance	Corporate accountability and transparency; Corporate governance	Lee and Saen (2012)
	Cost of delivery	Park, Lee, and Yoo (2005)
	Hazardous materials	Epstein and Wisner (2001)
	Sustainability design' investment	Hsu and Liu (2010)
	Rejection rate of supplier	Sharma and Bhagwat (2007)
Environmental performance	Time of delivery; Product variety and flexibility	Bhagwat and Sharma (2007)
	Environmental innovation and management	Lee and Saen (2012)
	Green products' number	Epstein and Wisner (2001)
	Prevention of pollution	Hsu and Liu (2010); Hart and Milstein (2003)
Organizational performance	Self-assessment, ISO 14,001	Epstein and Wisner (2001); Epstein and Roy (1997)
	Human rights, Social contributions	Lee and Saen (2012)
	Quality of service	Epstein and Wisner (2001)
	Safety & health Staff	Figge, Hahn, Schaltegger, and Wagner (2002)

industry, both for small- and medium-scale firms attempting to find new market opportunities and niches and for well-established international brands seeking to make value claims. Hence, three different sizes of firms have been selected for our case studies.

All of the firms are international brands, and they position themselves in the “green” segment of the market, with gradual changes in their supply chain structure and traditional business model. Small- and medium-scale companies that have disruptively changed their supply chain structure and business model rely on business sustainability competencies such as environmental sustainability, to establish their own brand and compete in new market niches (De Brito et al., 2008). We collected data from three established Fortune 500 corporations, each with more than 25,000 employees engaged in selling, sourcing, marketing, and other activities typical of a vertically integrated company in the apparel industry. Our study specially focused on the business of their fashion business divisions. The nature of this research is exploratory. All of the cases match the objective of exploring the role of social, environmental, and economic competencies in increasing a firm's business sustainability competence and performance. Using the multiple-case study approach allows us to answer the “why” and “how” questions (Slaughter, Levine, Ramesh, Pries-Heje, & Baskerville, 2006; Yin, 2003). Hence, it is ideal for this exploratory study. In addition, the external validity of this research is increased by the multiple-case study approach.

Business sustainability competence is critical to firm performance in the fashion retailing business. The current study selected the fashion apparel sellers as respondents owing to the following characteristics of the apparel industry: impulse purchases, low predictability, short-term product lifecycles, and fluctuating demand patterns. The sampling strategy was used to secure the result's generalizability (Lyytinen & Rose, 2003), and it reflects the “literal replication” strategy of Yin (2017). Moreover, a multiple-case study approach and logical replication have been applied to validate the propositions and strengthen replicability. Although no guidelines are set on the number of cases to examine this type of study, the accepted range has a maximum of ten to fifteen and a minimum of two to four (Perry, 1998; Yi et al., 2011). We have chosen three, which fall into the recommended range. Large-, medium-, and small-scale firms were selected, and the use of the term “scale” is relative to one another but not to the market as a whole. A semi-structured interview protocol was prepared (see Appendixes B.I and B.II). To ensure the validity of the content, format, appearance, and organization of the interview protocol, we consulted three academic professionals from Hong Kong Polytechnic University. We also consulted two production managers, one shipping manager, three sales managers, and one Chief Executive Officer (CEO) from a manufacturing company. We clarified the format, instructions, and terminology of the protocol according to their feedback. Interviews were made individually and face-to-face. To ensure the rigorous collection of information, repeat interviews were conducted across firms. Although the interviewer adhered to a set of prearranged questions, the interviewees were still allowed to convey their insights into and opinions on issues of their choice throughout the interviews. We made hand-written notes with the participants' permission. Follow-up telephone interviews were undertaken for clarification when satisfactory answers were not obtained. Organized minutes of the interview were electronically sent to all interviewees via e-mail for them to validate our description and interpretation and check for errors. Any errors were duly corrected. Before we used their reported data, the examples were cross-checked with recent annual reports, company newsletters, and internal minutes. Secondary data were also gathered from company websites, company documents, and published materials to provide context and background for the primary research data obtained from the interviews.

3.1. Case selection

The research involved a series of three interview-based company

case studies; the companies studied were considered industry leaders in business sustainability but also represented the diversity of company size and structure in the fashion business industry (Holton, Glass, & Price, 2010). The companies range in size from 25,000 to over 2,000,000 employees in 2018. Total revenue in the respective years ranges from 6.3 billion US dollars to over 500 billion (see Table 3). This wide diversity in the sample raises the probability of exploring patterns and generalizing the results within the industry (Yi et al., 2011). Management representatives of the firms were interviewed using the semi-structured interview protocol. We targeted representatives with extensive experience in firm strategy, unique textile and clothing techniques, and human resources management, and those familiar with the fashion business environment. Two waves of data collection took place. In the first wave, we interviewed senior vice presidents, vice presidents, senior directors, directors, vice general managers, a deputy general manager, associate general managers, an assistant general manager, a divisional manager, senior managers, and managers at Companies 1, 2, and 3. The

interview questions concerned their experiences and perceptions of how different competencies help firms achieve business sustainability competence and how the competencies enhance firm performance. In the second wave, we interviewed them with regard to their practices and requested that they confirm the association between business sustainability capability and business sustainability competence. Interviews were conducted individually and face-to-face, given the tendency of subjects to otherwise edit their thinking in the presence of others. Interviewing individuals helps reduce posturing, image management, and self-editing. The first- and second-wave interviews lasted for two hours and two-and-a-half hours, respectively. This project took place over more than three years, and the case studies included three multinational corporations and 24 managerial executives/professionals; more than 527 pages of transcripts and encrypted data resulted from the interviews and analysis.

3.2. Case problem

This section summarizes the backgrounds of the selected firms. Company 1 is a mass merchant and the largest fashion apparel retailer in the world; it has approximately 2,000,000 employees and 4,253 stores worldwide. Company 1 is a Fortune 500 company with a sound financial background. The firm invests in Oracle system and several projects to address the competitive pressure within the industry. Company 2 is a global specialty retailer with approximately 135,000 employees worldwide and 3,000 stores. Company 2 is headquartered in the U.S. and operates in Asia-Pacific and European regions. As a Fortune 500 company, Company 2 has a strong financial background because of its investment in technologies, such as Enterprise Resource Planning system in Data Processing. The company also conducts value-added training programs for its staff members and offers compliance and supply chain programs to its vendors. For example, the company has implemented a vendor-managed inventory and capability requirements planning program. Company 3 is a comparatively small-scale apparel wholesaler and retailer with approximately 25,000 employees and 380 stores worldwide, including the U.S., Korea, China, Japan, and Europe. Unlike Companies 1 and 2, Company 3 strategically cooperates with department stores such as Dillard’s and Macy’s to acquire additional business. However, Company 3 does not invest in technology, such as Enterprise Resource Planning system or other staff training programs. Despite its status as a Fortune 500 company, Company 3 is a family-owned business. Table 3 summarizes the profiles of these three firms.

3.3. Case analysis

The case analysis of each firm comprises two major phases: (1) data preparation and transcription; (2) interview report verification. To assure quality and integrity, (a) interviews were conducted and field keyword notes taken during the interviews; (b) the interviews were transcribed, and (c) the transcripts were analyzed and the keywords identified.

We coded the capabilities of each firm and independently identified their relationships as follows. (1) First, we followed Detert and Treviño (2010), who argued that standard coding procedures determine the relationships and constructs within each case and allow comparison of these factors. Hence, we coded and identified all analytic units in the interviews. (2) We used software and formalized procedures because the analysis of qualitative data is often tacit (Sinkovics, Penz, & Ghauri, 2008). After an iterative training process, we coded the interviews by applying an independent coding approach, until a 1.0 inter-coder reliability was obtained. (3) All of the coding data were entered into NVivo, a qualitative software package that facilitates aggregation and pattern searching.

Our procedure for analyzing the collected qualitative data was as follows. First, we transcribed the interviews and made an entry in our case study journal after each interview. We kept track of our first

Table 3
Summary of company profiles.

Company	Company 1	Company 2	Company 3
Core business	Retailing	Retailing	Retailing, wholesaling, licensing
Major market	United States, Canada, Puerto Rico, Europe, United Kingdom, Mexico, Japan, India, China, Chile, Central America, Brazil, Argentina, Africa	United States, Canada, Italy, China, Japan, Ireland, France, United Kingdom	United States, Canada, Europe, Japan, South Korea, China
Year of establishment	68	44	46
Total revenue in 2018 fiscal year (Millions of US\$)	514.4	16.6	6.3
Number of stores	4,253	3,076	380
Employees	2,000,000	135,000	25,000
Interviewees	1) Senior vice president of global sourcing (soft lines), 2) Vice president of global sourcing (soft lines), 3) Senior director of global sourcing (soft lines), 4) Director of global sourcing (soft lines), 5) Vice general manager of global sourcing (soft lines), 6) Assistant general manager of global sourcing (soft lines), 7) Senior manager of global sourcing (soft lines), 8) Manager of global sourcing (soft lines)	1) Senior vice president of merchandising (apparel), 2) Vice president of merchandising (apparel), 3) Senior director of merchandising (apparel), 4) Director of merchandising (apparel), 5) Deputy general manager of merchandising (apparel), 6) Associate general manager of merchandising (apparel), 7) Senior manager of merchandising (apparel), 8) Manager of merchandising (apparel)	1) Senior vice president of merchandising (apparel), 2) Vice president of merchandising (apparel), 3) Senior director of merchandising (apparel), 4) Director of merchandising (apparel), 5) Vice general manager of merchandising (apparel), 6) Associate general manager of merchandising (apparel), 7) Divisional manager of merchandising (Apparel), 8) Manager of merchandising (apparel)

Table 4
Effect of managerial competence on business sustainability competence and importance of level of management competence to each firm.

Proposition	Firm	Case Evidence	Importance Degree	Support Degree
1a. Managerial competence fully associates with business sustainability competence. 1b. Managerial competence partly associates with business sustainability competence.	1	The director says, "Our top management invests a lot in strategic planning to support business sustainability capability." Their management team encourages the firm to establish a cross-sectional committee in which staff members from various departments meet together to solve the business challenges they encounter. The project, "Correction of Errors" (COR), is another example of a regular bi-weekly meeting conducted by senior managers to share experiences and rectification of errors. The manager noted, "...without the support and vision of the top management of the organization to encourage business sustainability capability, the strategic planning of different segments would not be a success."	Strong	Supported proposition 1a.
	2	Top management believed that their employees participated actively in building different competencies for business sustainability capability because of their belief in the value of business sustainability capability, as the senior director and senior manager told us: "for example, we can track changing consumer preferences to succeed and successfully gauge apparel trends based on the beliefs and encouragement of our top management."	Strong	
	3	The divisional manager told us that their top management believed their employees participated actively in building different competencies for business sustainability capability because of their belief in the value of business sustainability capability, which is the same observation as that of the senior manager: "...so that we can execute their strategy continuously for long-term sustainable growth based on operating cash flow, net income, and revenue."	Strong	

Table 5
Effect of social well-being on business sustainability competence and the importance of level of social well-being to each firm.

Proposition	Firm	Case Evidence	Importance Degree	Support Degree
2a. Social well-being fully associates with business sustainability competence.	1	The senior director said, “ <i>the firm could not achieve a high level of business sustainability capability if the employees were not able to create and deliver socially responsible services and products to consumers.</i> ” Their employees from different divisions are equipped with the required competencies such as innovative thinking through regular training courses. The senior director said, “ <i>the firm rewards employees with higher competence by providing various bonus schemes.</i> ” Separate profit sharing and 401 (k) plans improve employee’ benefits and living standards. The senior director also informed us, “... <i>we are not running fast fashion business for CSR reason.</i> ”	Strong	Supported preposition 2b.
2b. Social well-being partly associates with business sustainability competence.	2	The director and manager informed us, “ <i>the firm believes that its employees are the key drivers of CSR, which positively affects business sustainability ... employees are rewarded for greater competence.</i> ” Stock award schemes and contribution retirement plans are examples of bonus measures that increase employee’ benefits. The director also said, “... <i>we are not running the fast fashion business but sometimes we have late orders or fast-track orders from our customers.</i> ”	Strong	
	3	The senior director told us that the firm assumes that CSR is not critical in terms of business sustainability, and their employees should focus more on sales and profits. The manager also had the same observation: “ <i>this assumption can be attributed to the company’s comparatively small scale.</i> ” The company neither offers bonus nor reward schemes to employees. The senior director observed, “ <i>the employees showed no interest in CSR, but only concentrated on their jobs.</i> ” The divisional manager also informed us, “... <i>we are also running fast fashion business for better profit.</i> ”	Medium	

Table 6
Effect of Five-R applications on business sustainability competence and the importance of level of Five-R applications to each company.

Proposition	Firm	Case Evidence	Importance Degree	Support Degree
<p>3a. Five-R applications fully associates with business sustainability competence.</p> <p>3b. Five-R applications partly associates with business sustainability competence.</p>	1	According to the vice president, “as one of the largest retailers in the world, our actions can ensure a better world for future generations and save our customers money. One of our sustainability goals is to ensure all our stores and facilities are supplied with 100% renewable energy, such as solar energy, thermal energy, and wind power, which will reduce greenhouse gas emissions. We have also redesigned our truck fleet to make our private trucks more efficient.” Moreover, one of the goals of the firm is zero waste. The assistant general manager said, “... our U.S. operations have diverted 80% (or even more) of our store waste from landfill in 2011 by recycling reusable materials like metal, paper, plastic, and so on.” Furthermore, the firm holds that no family must be forced to choose between products that they can afford and products that are sustainable. The firm is committed to working with the government, non-governmental organizations, and suppliers, to enhance the quality and affordability of their merchandise. The firm will request their suppliers to regenerate denim fiber wastes to their original form for their denim products (<i>recycle</i>), reuse materials in their original forms like garment packaging, dress pins, sewing needles, and so on (<i>reuse</i>), reduce fabric/trim/accessory consumption (<i>reduce</i>), redesign garments by using ecological materials like organic fibers, using a mini-maker or advanced pattern maker to reduce wastage (<i>redesign</i>), and continue to innovate products and process (<i>re-imagine</i>). “... Our goal is to sell merchandise that sustains both people and the environment.”	Strong	Supported preposition 3b.
	2	According to the deputy general manager, “as a global specialty retailer, we can make a difference to the environment by combating climate change and saving energy. We trust that being environmentally responsible will increase our success, create value, innovate our business, and achieve the expectations of our shareholders, employees, and customers.” Based on these concepts, the firm worked to understand its environmental impact, re-imagine the process, and redesign an effective strategy to drive improvements, such as reducing energy wastage and using solar energy and thermal energy in their retail stores, and enforcing this policy across their operations and supply chain. Moreover, the senior manager mentioned the participation of the firm in the Sustainable Apparel Coalition to establish standards for recycling sustainable materials, develop public policies to address climate change, and support the development of cleaner energy sources.	Strong	
	3	According to the vice president, “we have a list of banned substances and we require suppliers to comply with a range of environmental legislation (EU Directive) and certifications (Oeko-Tex Standard 100).” Oeko-Tex Standard 100 is one of the leading eco labels in the world for textiles. This standard is an international testing and certification system for textiles developed in 1992 that limits the use of certain chemicals. However, the firm has no concrete policies on the environment, and whether the firm is committed to sustainability is unclear. According to the divisional manager, “...we focus more on net sales and profitability, and we have only implemented the E-label.”	Medium	

findings and ideas in the journal. We started our analysis by evaluating and grouping (open coding) the concepts in the data. Thereafter, we looked for relationships between these groups (axial coding). These techniques were not linear but formed an analytic, process-oriented, recursive procedure (Locke, 1996; Vanpoucke, Vereecke, & Boyer, 2014), which we continued until we identified emergent theoretical relationships. Appendix B.III illustrates the coding scheme by using a schematic firm size-scale. This procedure allowed us to examine how firm size influences the constructs of business sustainability capabilities in business sustainability competence. For instance, we combined analytic units to identify relationships between ORG (firm size effects on organizational competence), MGT (firm size effects on managerial competence), SWB (firm size effects on social well-being), ENV (firm size effects on environmental competence), FR (firm size effects on Five-R applications), ECON (firm size effects on economic competence), MKT (firm size effects on marketing competence), and INV (firm size effects on innovation). Subsequently, we used the data to determine the factors attributable to different firm size scales. Second, we verified the correctness and integrity of the transcript contents and codes. Any unclear details, disagreements, or inconsistencies were reinvestigated to reduce bias.

After completing and editing full transcripts of the interviews, we determined the major subjects corresponding to the research topic under study, i.e. the importance of business sustainability capability and business sustainability competence and their influence on firm performance. Section 4 illustrates these findings and elaborates on these results.

4. Results

The information extracted from the cases was used to validate the relationship between among business sustainability capabilities, business sustainability competence, and organizational performance in our proposed model. By using the theoretic approach (Fiss, 2007; 2011), our propositions include contrarian cases and typically contain more than one recipe for each outcome (Woodside, 2013). Tables 3–10 summarize the interview quotations and case evidence to substantiate our propositions and the importance of the competence level to each firm.

4.1. Effect of organizational competence on business sustainability competence

The case studies show that despite differences in firm size, the visions and roles of top management positively affect business sustainability capacity. Organization size motivates employees to deliver and create socially responsible services and products. Mass merchants (Company 1) and global specialty retailers (Company 2) tend to value their employees more and improve their labor standards and conditions to motivate them to participate in CSR, which enhances business sustainability. By contrast, small-scale wholesalers and retailers (Company 3) tend to place lower value on CSR and on their employees.

4.1.1. Managerial competence

All of the firms consider top management to play a vital role in enhancing business sustainability competence. At Companies 1 and 2, the top management invests significantly in diversification to support business sustainability competence. Staff members are also encouraged to participate in inter-departmental meetings to discuss the business sustainability challenges they face. A formal gathering called “Correction of Errors” is a bi-weekly meeting in Company 1 among senior managers, a venue where they can share their experiences and approaches to rectifying mistakes. Moreover, the firm can gauge changing consumer preferences and apparel trends on the bases of direction and encouragement from their top management. Business sustainability capabilities will be less successful without the support and vision of top management.

Owners in Company 3 make most of the fateful decisions. According to its divisional manager, the firm uses its resources to support business sustainability competence, because the owners understand that such competence can improve business performance. In addition, the divisional manager clarified that the employees actively build different capabilities for business sustainability competence because they value it highly. Therefore, we find that managerial competence enhances business sustainability competence. Table 4 briefly summarizes the interview quotations and case evidence to substantiate our proposition 1a.

Proposition 1a. *Managerial competence fully associates with business sustainability competence.*

Proposition 1b. *Managerial competence partly associates with business sustainability competence.*

4.1.2. Social well-being

Company 1 works on the understanding that it cannot achieve high business sustainability if its employees are incompetent in the delivery and creation of socially responsible services and products. To retain talent, the firm has created several bonus schemes, such as “Separate Profit Sharing” and “401 (k) Plans.” In Company 1, employees with different functions are equipped with the required competencies, such as the ability to develop concepts, through regular training courses that aim to increase the business sustainability competence of the firm and provide staff with additional knowledge of company objectives, which in turn enhances their ability to manage different business units in the long term. The senior director of Company 1 reported that rewards improved labor living standards and benefits. The senior director also reported that their company does not run fast fashion business for CSR reason. Previous studies have shown that increased time pressures on the order cycles of the apparel and textile industry lead to unethical working practices and employee abuse at production sites (Barnes & Lea-Greenwood, 2006; Turker & Altuntas, 2014).

The director and manager of Company 2 also considered their employees as key drivers of CSR. They suggested that employees could positively influence business sustainability. Company 2 offers generous employee benefit plans, such as retirement plans and stock award schemes, to retain talent while improving labor benefits and living standards. The director reported that their company does not run the fast fashion business for CSR reason. They would work for some late or fast-track orders only during rare occasions.

The senior director of Company 3 reported that CSR was unimportant to the firm’s business sustainability. Given its small scale, employees of Company 3 primarily focus on sales and profitability. The divisional manager of Company 3 said that the firm did not provide bonuses or reward schemes to its employees, that its employees were uninterested in CSR, and instead focused only on their work. Therefore, social well-being would seem irrelevant to the CSR efforts of small-scale companies. The divisional manager also reported that their company runs for fast fashion business for better profit. Table 5 briefly summarizes the interview quotes and case evidence to substantiate our proposition 2b.

Proposition 2a. *Social well-being fully associates with business sustainability competence.*

Proposition 2b. *Social well-being partly associates with business sustainability competence.*

These case studies confirm that managerial competence contributes to business sustainability competence in relation to firm size. Employees of mass merchants and global specialty retailers contribute more to business sustainability competence than those of small-scale firms in terms of CSR. The top management of organizations with small-scale operations primarily focuses on short-term profits and sales volume than on long-term CSR. Therefore, medium- to large-scale operations have stronger organizational competence than small-scale operations.

Table 7
Effect of innovation on business sustainability competence and the importance of level of innovation to each company.

Proposition	Firm	Case Evidence	Importance Degree	Support Degree
4a. Innovation fully associates with business sustainability competence. 4b. Innovation partly associates with business sustainability competence.	1	According to the vice general manager, “we invented and then launched Sustainability Index measures across our approximately 60,000 + suppliers.” Moreover, the firm supervises the entire operation by rating the sustainability of every product it sells, aside from aiming to become the greenest retailer in the world. Their goals are sell merchandise that sustains the environment, achieve zero waste, and use renewable energy. According to the senior manager, “to facilitate our goal of environmental sustainability, we have developed affordable organic produce, and integrated more sustainable fibers into our textile products such as organic or recycled fibers, among other things.” These goals are consistent with the statement of the company.	Strong	Supported preposition 4b.
	2	According to the associate general manager, “we are able to evolve and develop our brands, and we are able to provide products that meet customer demand and to match customers’ tastes instantly ... all these are critical and vital to our success.” The firm continues to develop high-quality, innovative fashion products of different styles, sizes, and colors that attract consumers of different ages and tastes. According to the senior manager, “we continue to maintain favorable brand recognition and effectively respond to changing fashion trends with product innovations, then efficiently market products to our customers from diverse market segments.”	Medium	
	3	According to the director, “our products represent an innovative and timeless interpretation of American style with strong international appeal.” To achieve these characteristics, the firm organizes design teams to develop themes, concepts, and merchandise for different categories and brands, which can help them gain market share and other valuable inputs. As the associate general manager told us, “our emphasis on distinctive and new design is critical to the strength, reputation, and prominence of our brands.”	Medium	

Table 8
Effect of market-driven competence on business sustainability competence and the importance of level of market-driven competence to each company.

Proposition	Firm	Case Evidence	Importance Degree	Support Degree
<p>5a. Market-driven competence fully associates with business sustainability competence.</p> <p>5b. Market-driven competence partly associates with business sustainability competence.</p>	1	<p>According to the director, “<i>our strength is that we are able to open and operate the right stores in the right locations, and offer our customers service and value; these are critical for our competitive position within the retail industry..... our net sales relative to the competition attest to this.</i>” The net sales increased from US\$260.3 billion to US\$264.2 billion from 2011 to 2012 solely for the firm’s US arm. Moreover, the manager informed us that the firm employs many programs like <i>Every Day Low Price</i> to meet the customers’ desire to save more when they buy apparel to have extra money for a better life; <i>Rollback</i> – to increase customer spending by selling apparel at huge discounts; <i>Store of Community</i> – an active approach to understand and meet customer needs by providing a variety of apparel products in store to increase the number/percentage of customers and referral customers; <i>Clean, Fast, and Friendly</i> – <i>Clean</i> refers to increasing customer satisfaction with the store’s appearance/environment, and hence reducing the number of customer complaints; <i>Fast</i> refers to on-time delivery of apparel to fulfill customer needs; <i>Friendly</i> refers to eco-friendliness, to satisfy customers’ desire for green apparels, like garments made from organic or regenerated fibers. The company’s market share and sales volume increased because of these programs. The director also informed us that forecast sharing with vendors is vital for their sales planning.</p>	Strong	Supported proposition 5b.
	2	<p>According to the vice president, “<i>we compete keenly with national, global, and local apparel retailers in this highly competitive global specialty apparel retail industry.</i>” The firm serves its customers and increases its market share and profitability by responding quickly to consumer demands and changing fashion trends, effectively marketing products to consumers in various market segments, maintaining favorable brand perception, attracting consumer attention, and competitively pricing merchandise. The senior director also commented, “<i>we will continue to serve our customers to increase our profit and market share by implementing our strategic plan, which includes expanding internationally and growing our online business, managing our operating expenses carefully by disciplined inventory management, and so on.</i>” The senior director also said that forecast sharing with vendors is important for their positioning inventory.</p>	Medium	
	3	<p>According to the vice general manager, “<i>we compete with a lot of designers and manufacturers of accessories, apparel, and home furnishing products, both domestic and foreign. Competition is very keen in the consumer and fashion product segment we are in ...</i>” The senior director also informed us that the firm competes with other companies on the basis of satisfying customer needs, including developing high-quality, innovative products of different styles, sizes, and colors that appeal to consumers, keeping prices low by sourcing raw materials at low cost, building a reputation for quality, enhancing customer loyalty, responding to the rapidly changing consumer demands, and creating customers’ favorite brands. They believed that the profit and market share of the firm will increase in this manner. By acting on these measures, the firm increased its net revenues from US\$57 billion to US\$69 billion from fiscal years 2011 to 2012. The divisional manager observed, “<i>...this might be because our operation scale is relatively small and we occupy the high-end fashion market niche, which means we focus on satisfying our customers’ needs.</i>” The divisional manager also informed us that forecast sharing with vendors is meaningless in their highly dynamic/ volatile markets.</p>	Medium	

Table 9
Effect of business sustainability competence on firm performance and the importance of level of business sustainability capability to each firm.

Proposition	Firm	Case Evidence	Importance Degree	Degree Of Support
6. Business sustainability competence is fully associated with firm performance.	1	According to the senior vice president, “ <i>business sustainability capability is vital for us to accommodate the customer’s needs to increase our profits and market share, and innovative ideas like Every Day Low Price are good examples of how to capture market share.</i> ” Firms should compete in both capability and cost.	Strong	Supported proposition 6.
	2	According to the senior vice president, “ <i>business sustainability capability is important for us to survive in a competitive environment.</i> ” The only way they can differentiate themselves from mass merchants is to maintain high business sustainability capability to meet the market requirements.	Strong	
	3	According to the senior vice president, “ <i>business sustainability capability is critical for us to compete in the competitive environment</i> ” solely because the firm cannot compete with a low-cost strategy.	Strong	

Table 10

Brief summary of implications, lessons learned, and constructs of business sustainability capabilities in business sustainability competence.

Construct	Lesson Learned Company 1	Company 2	Company 3	Implication
Organizational Competence				Stronger in medium- to large-scale operations than small-scale operations.
Managerial Competence	Managerial competence makes an essential contribution to business sustainability capability.	Managerial competence makes an essential contribution to business sustainability capability.	Managerial competence makes an essential contribution to business sustainability capability.	The role and vision of top management are important in driving business sustainability competence for business sustainability capability, for firms of any scale.
Social Well-being	More contributions from employees in the area of CSR.	More contributions from employees in the area of CSR.	Less contribution from employees in the area of CSR.	1. More obvious contributions from employees in terms of CSR for medium- to large-scale operations; 2. Less contribution from employees in terms of CSR for small-scale operations.
Environmental Competence				Stronger in medium- to large-scale operations than small-scale operations.
Five-R Applications	Re-imagine, redesign, reuse, reduce, and recycle are important in large-scale operations.	Re-imagine, redesign, reuse, reduce, and recycle are important in medium-scale operations.	Re-imagine, redesign, reuse, reduce, and recycle are less important in small-scale operations.	1. Five-R applications are more important in medium- to large-scale operations; 2. Five-R applications are less important in small-scale operations.
Economic Competence				Stronger in large-scale operations than small- to medium-scale operations.
Market-driven Competence	Focuses on program refinement and development to meet/satisfy customer needs.	Focuses on products to satisfy customer desire/needs; seldom focuses on program refinement.	Focuses on products to satisfy customer desire/needs, but not on program refinement.	1. Large-scale operations pay more attention to fine-tuning/refining programs to meet customer needs/ desire; 2. Small to medium-scale operations focus more on product aspects to meet customer requirements.
Innovation	More process innovations, more product development.	Less process innovations, more product development.	No process innovations, more focus on product development.	1. Large-scale operations pay more attention to innovation in both products and process development; 2. Small to medium-scale operations focus more on product development than process innovations.

The top management of small-scale business operations can identify mistakes or deviations when their staff members fail to show business sustainability competence. By contrast, highlighting such deviations from organizational strategy is difficult in mass merchants and global specialty retailers, which can affect business sustainability competence.

4.2. Effect of environmental competence on business sustainability competence

The case studies show that firms of different sizes perceive that environmental competencies, such as five-R applications, positively affect business sustainability competence. However, firms place different values on environmental competence. Mass merchants (Company 1) and global specialty retailers (Company 2) place a higher value on environmental competence than small-scale operations (Company 3).

4.2.1. Five-R applications

The vice president of Company 1 stated the following:

As one of the largest retailers in the world, our actions can ensure a better world for future generations and save our customers money. One of our sustainability goals is to ensure all our stores and facilities are supplied with 100% renewable energy, such as solar energy, thermal energy, and wind power, which will reduce greenhouse gas emissions. We have also redesigned our truck fleet to make our private trucks more efficient.

According to the assistant general manager, Company 1 aims to achieve zero waste; in its US operations in 2011, for example, 80% of their store waste were diverted from the landfill by recycling materials such as metal, paper, and plastics. Company 1 holds that no family should be forced to choose between products that they can afford and products that are sustainable. Instead, the company is committed to working with the government, non-governmental organizations, and suppliers, to enhance the quality and affordability of their merchandise. The firm has demonstrated its commitment by requesting one of its suppliers to regenerate denim fiber wastes to their original form for their denim products (*recycle*); to use materials, such as garment packaging,

dress pins, and sewing needles, in their original form (*reuse*); to reduce their consumption of fabric, trims, and accessories and prevent waste during fabric and trim procurement (*reduce*); to redesign their garments using environmentally friendly materials, such as organic fibers, or by using a mini-maker or advanced pattern maker to reduce consumption wastage (*redesign*); and to innovate their products and processes continuously (*re-imagine*). Company 1 aims to sell merchandise that can sustain both people and the environment.

The deputy general manager of Company 2 stated the following:

As a global specialty retailer, we can make a difference to the environment by combating climate change and saving energy. We trust that being environmentally responsible will increase our success, create value, innovate our business, and achieve the expectations of our shareholders, employees, and customers

Aside from understanding its own influence on the environment, Company 2 also aims to re-imagine its processes and redesign an effective strategy to drive improvements, such as reducing energy wastage and using solar and thermal energy in their retail stores. The company implements these efforts across their operations and supply chains. The senior manager also mentioned that the company was an active member of the Sustainable Apparel Coalition, which aims to establish standards and policies that promote cleaner energy sources to address climate change.

The vice president of Company 3 stated the following: “we have a list of banned substances and we require suppliers to comply with a range of environmental legislation (EU Directive) and certifications (Oeko-Tex Standard 100).” Oeko-Tex Standard 100 is one of the leading eco labels in the world; it is an international certification and testing system for textiles established in 1992 that limits the use of certain chemicals³. However, Company 3 is more focused on the profitability of their firm than the implementation of environmental policies. The divisional manager said, “...we primarily focus on the net sales and profitability of our

³ https://www.oeko-tex.com/en/manufacturers/best_practice/profile_detail_3904.xhtml

firm, and we have only achieved the E-label.”

Five-R applications increase business sustainability and competitive advantage by developing new knowledge or insights that involve recycling materials such as regenerated fibers (e.g., viscose and rayon); reusing materials (e.g., packaging materials, dress pins, or sewing needles); reducing wastage during the fabric, trim, and accessory procurement process; re-designing products to use environmentally friendly fibers (e.g., organic fibers); re-designing the process by using a mini-marker or advanced paper pattern machine to reduce wastage; and re-imagining innovations. All of these activities can help the organization achieve business sustainability by satisfying its current needs without harming future generations. Table 6 briefly summarizes the interview quotations and case evidence to substantiate our proposition 3b.

Proposition 3a. *Five-R applications fully associate with business sustainability competence.*

Proposition 3b. *Five-R applications partly associate with business sustainability competence.*

4.3. Effect of economic competence on business sustainability competence

Economic competence is the ability of an organization to achieve economic success and transform its profits into business sustainability (Cagnin et al., 2005). The case studies show that firms of various sizes all perceive the positive effect of market-driven competence on business sustainability competence. Although the size of an organization influences its ability to improve its existing products and services, mass merchants (Company 1) prefer to develop more effective and efficient processes by introducing new programs to increase their competitiveness. Medium- to small-scale companies (Companies 2 and 3) tend to improve their products, meet their market needs, satisfy their customers, and enhance their sales and profits, which in turn help achieve business sustainability.

4.3.1. Innovation

The vice general manager of Company 1 stated that “We have invented and launched Sustainability Index measures across our approximately 60,000 + suppliers and frontline boards, to hold them accountable for increasing the firm’s positive impact.” Apart from aiming to become the greenest retailer in the world, the firm also reviews its entire operation by assessing the sustainability of each product that it sells. The firm aims to sell environmentally friendly merchandise, achieve zero waste, and use renewable energy. The senior manager further declared, “To facilitate our goals of environmental sustainability, for example, we have developed affordable organic production, integrating more sustainable fibers into our textile offerings.” Such fibers are often organic or recycled. The vision of the firm is in accordance with the innovation objective stated in the minutes of the annual general meeting of Company 1.

Similar to Company 1, Company 2 fosters business sustainability competence throughout the innovation process. According to its associate general manager, “we are able to evolve and develop our brands, and we are able to provide products that meet customer demand and match customers’ tastes instantly ... all these are critical and vital to our success.” The firm continues to develop high-quality, innovative fashion products of different styles, sizes, and colors that attract consumers of different ages and tastes. The senior manager added, “we continue to maintain favorable brand recognition and effectively respond to changing fashion trends by product innovations, then efficiently market products to customers from various and diverse market segments.” This report echoes the innovation statement in the minutes of the annual general meeting of Company 2.

The director of Company 3 said, “our products represent an innovative and timeless interpretation of American style with strong international appeal.” To achieve its goals, the firm organizes design teams to develop themes, concepts, and merchandise for different categories and

brands, which can help them gain market share and other valuable inputs. According to its associate general manager, “our emphasis on distinctive and new design is critical to the strength, reputation, and prominence of our brands.” Table 7 briefly summarizes the interview quotations and case evidence to substantiate our proposition 4a.

Proposition 4a. *Innovation fully associates with business sustainability competence.*

Proposition 4b. *Innovation partly associates with business sustainability competence.*

4.3.2. Market-driven competence

The director of Company 1 said,

“Our strength is that we are able to open and operate the right stores in the right locations, and offer our customers service and value; these are critical for our competitive position within the retail industry..... our net sales relative to the competition attest to this.”

The annual report of Company 1 showed that the net sales of the firm’s U.S. arm alone increased from US\$260.3 billion to US\$264.2 billion from fiscal years 2011 to 2012. The manager also stated the following:

The firm has many programs, such as *Every Day Low Price*, to meet the customer’s desire to save more when buying apparel, so that the customer can have extra money for a better life; *Rollback*, which aims to increase customer spending by selling apparel at huge discounts; *Store of Community*, an active approach to understand and meet customer needs, such as providing a variety of apparel in the store to increase the number of customers, including referral customers; and *Clean, Fast, and Friendly*, where *Clean* refers to increasing customer satisfaction with the store appearance and environment and hence reducing the number of customer complaints; *Fast* refers to on-time delivery of apparel to fulfill customer needs; *Friendly* refers to eco-friendliness, to satisfy the increasing customer demand for green apparel like garments made of organic or regenerated fibers...our market share and sales volume in the industry have increased because of these programs.

The director reported that their company shares forecast with vendors, as it is important for their sales planning. Previous studies pointed out that forecast sharing is vital for production planning and better positioning inventory in dynamic market demands (Shen & Chan, 2017).

Similarly, Company 2 achieves business sustainability competence through market-driven competence. The vice president stated, “we compete keenly with national, global, and local apparel retailers in this highly competitive global specialty apparel retail industry.” The firm serves its customers and increases its market share and profitability by responding quickly to consumer demands and changing fashion trends, effectively marketing products to consumers in various market segments, maintaining favorable brand perception, attracting consumer attention, and competitively pricing merchandise. The senior director echoed the comments of the vice president:

We will continue to serve our customers to increase our profit and market share by implementing our strategic plan, which includes expanding internationally and growing our online business, carefully managing our operating expenses by disciplined inventory management, and so on.

The senior manager director reported that their company shares forecast with vendors, as it is vital for their positioning inventory.

The vice general manager of Company 3 stated that “we compete with a lot of designers and manufacturers of accessories, apparel, and home furnishing products, both domestic and foreign. Competition is very keen in the consumer and fashion product segment we are in...” The senior director explained that the firm competes with other companies in terms of customer satisfaction by developing high-quality and innovative products of different styles, sizes, and colors, keeping prices low by sourcing raw materials at low cost, building a reputation for

quality, enhancing customer loyalty, responding to rapidly changing consumer demands, and creating customers' favorite brands. Company 3 believes that its profit and market share can be increased by following these approaches. The annual report of Company 3 reveals that the net revenues of the firm increased from US\$57 billion to US\$69 billion from fiscal years 2011 to 2012. The divisional manager said, "this might be because our operation scale is relatively small and we occupy the high-end fashion market niche, which means we focus on satisfying our customers' needs." The divisional manager reported that their company shares forecast with their vendors, but this is meaningless in their highly dynamic and volatile markets. Previous studies have shown that firms often inflate their forecast in a non-verifiable, non-blinding, and costless type of communication for abundant supply (Ebrahim-Khanjari, Hopp, & Iravani, 2012), but this action leads to low production capacity utilization due to incorrect forecast sharing (Ramdas & Spekman, 2000; Parsaeifar, Bozorgi-Amiri, Naimi-Sadigh, & Sangari, 2019). Table 8 briefly summarizes the interview quotations and case evidence to substantiate our proposition 5b.

Proposition 5a. *Market-driven competence fully associates with business sustainability competence.*

Proposition 5b. *Market-driven competence partly associates with business sustainability competence.*

These case studies show that firms place different values on economic competence. To achieve economic competence, large-scale organizations concentrate on refining their processes to satisfy their customers' needs and developing other corporate programs to enhance the efficiency of their distribution channels. Their innovation and market-driven competencies are strong. Firms with small-scale operations focus primarily on product development rather than process innovation, which enables them to satisfy customer needs and respond to market changes in a timely manner. Therefore, economic competence is stronger in large-scale operations than in small- to medium-scale operations.

4.4. *Effect of business sustainability competence on organizational performance*

The literature review revealed that business sustainability competence helps an enterprise build the necessary capabilities and flexibility for its future architecture and meet the requirements of its direct and indirect stakeholders, which include customers, suppliers, employees,

and society. Business sustainability competence also helps an enterprise meet the environmental, organizational, and economic requirements of its stakeholders within a network. At the same time, the business sustainability of an enterprise requires all three dimensions of environmental, organizational, and economic sustainability in the long run, and these aspects are closely interrelated (Laverdure & Conn, 2012; Van Kleef & Roome, 2007; Dyllick & Hockerts, 2002). This section further explains the importance of these findings concerning business sustainability competence for firms of various sizes.

Company 1 is a mass merchant. The senior vice president stated that business sustainability competence was critical in allowing the firm to accommodate the needs of its customers and thus increase its profits and market share. Innovative ideas such as everyday low pricing are excellent examples on how to capture market share. Company 1 competes with other firms in terms of cost by using business sustainability competence as a competitive strategy to generate revenues.

Business sustainability competence helps Companies 2 and 3 survive in the competitive and changing business world. The senior vice presidents of both companies mentioned that they were unable to compete using a low-cost strategy. They could only compete with mass merchants by maintaining high business sustainability competence to meet market requirements.

Proposition 6. *Business sustainability competence fully associates with firm performance.*

The case studies reveal that small- and medium-scale firms require higher business sustainability competence to compete with mass merchants. Mass merchants can increase their investment in infrastructure to achieve business sustainability competence, whereas small- and medium-scale businesses can achieve business sustainability competence through managerial competence, social well-being, five-R applications, innovations, and market-driven competence. Business sustainability competence is not only achievable by mass merchants. Firms of different sizes can also sustain their competitive advantages and firm performance. Fig. 4 shows the gross profits of these three companies in the past four consecutive financial years. Table 9 briefly summarizes the interview quotations and case evidence to substantiate our proposition 6.

5. Discussion

In summary, we find strong support for our hypothesis that business sustainability competence is fully associated with firm performance

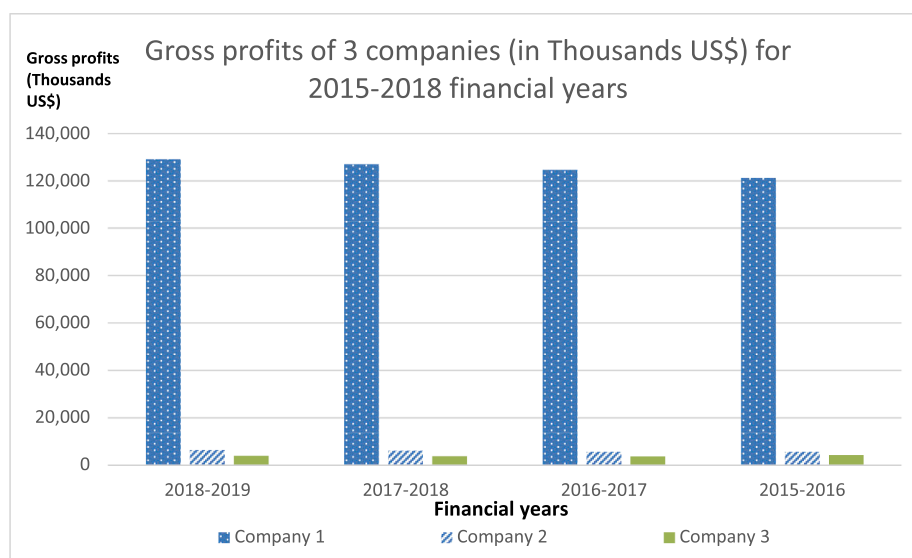


Fig. 4. Gross profits of 3 companies (in Thousands US\$) for 2015–2018 financial years.

(Hypothesis 6) or that managerial competence is fully associated with business sustainability competence (Hypothesis 1a). We also show that social well-being (Hypothesis 2b), five-R applications (Hypothesis 3b), Innovation (Hypothesis 4b), and market-driven competence are partly associated with business sustainability competence (Hypothesis 5b). We now discuss the implications of our findings for theoretical and empirical work in these areas.

5.1. Dimensions of business sustainability capability and business sustainability competence in firm performance

Business sustainability competence is crucial for a business to survive at the international level. We have developed a framework that relates business sustainability capability, business sustainability competence, and firm performance, and it provides a conceptual understanding of business sustainability capability. Support from business sustainability capability and competence has been proposed as a competitive capability that helps firms achieve business sustainability competitiveness. Case studies, stakeholder theory, resource-based view, and dynamic capabilities view were also used to elaborate why and how organizational, environmental, and economic competencies could strengthen business sustainability competence. This study contributes to the conceptual and empirical literature on business sustainability competence in several ways.

The importance of business sustainability capability to firms is associated with firm size, which is one of the main points derived from the case studies. Our propositions, which explored the relationship between business sustainability capability and competence, might have been affected by the firm's size setting. The business sustainability of a large-scale firm is more complex than that of small- and medium-scale firms. Therefore, the business sustainability of small-scale firms may not require sophisticated five-R applications to support their environmental competence. To demonstrate, we found that large-scale firms primarily focus on process innovation and product development, whereas small- and medium-scale firms (with simpler business settings) focus more on product development than process innovation. Depending on firm size, economic competence acts as the foundation of business sustainability capability, in which market-driven competence and innovation enhance economic competence. Better economic competence also enhances business sustainability, which in turn supports five-R applications. Organizational competence serves as another foundation of business sustainability, through which social well-being and managerial competence can improve organizational competence. Social well-being is more vital in medium- and large-scale organizations than in small-scale organizations. The vision, mission, and role of the top management team are vital in driving managerial competence for business sustainability competence, regardless of firm size.

By identifying a set of business sustainability capabilities that comprise organizational, environmental, and economic competencies, this research contributes to the literature by supporting the effectiveness of business sustainability competence in dealing with highly competitive, turbulent business markets. We have also proposed a framework that shows how the performance of a firm can be improved through different competencies via business sustainability competence. Business sustainability competence is also conceptualized as a component of competitive capability enabled by business sustainability capability, which comprises organizational, environmental, and economic competencies. Such a conceptualization helps distinguish the functional differences between organizational capability and business sustainability capability. We have proposed that business sustainability competence is directly associated with the performance and competitive advantages of a firm, whereas business sustainability capability plays a supporting role. By distinguishing competence from capability, we have clarified the process through which firm sustainability can be established. Table 10 briefly summarizes the implications, lessons, and constructs, along with their proposed measurements, that determine business

sustainability capability and competence.

5.2. Summary of constructs of business sustainability capabilities in business sustainability competence

The relationships among business sustainability capability, business sustainability competence, and firm performance were explored holistically in this study. However, a broader understanding of these relationships cannot be achieved as exploring their cognitive aspect is difficult. This section thus attempts to further identify and clarify their relationships.

5.2.1. Organizational competence

Organizational competence has been extensively studied in the business sustainability literature (Kleine & Von Hauff, 2009; Van Kleef & Roome, 2007; Zangiski, de Lima, & da Costa, 2013). Managerial competence and social well-being are two components of organizational competence; they involve capabilities and firm-specific resources that allow an organization to implement, choose, and develop value-enhancing strategies to enhance its competitive advantages. Managerial competence and social well-being, including firm-specific capabilities, knowledge, assets, and skills, are embedded in the processes, structure, interpersonal (and intergroup) relationships, and technology of an organization. As shown in Table 4, our findings suggest that managerial competence significantly contributes to business sustainability competence regardless of firm size. The contribution of employees to CSR is more evident in medium- to large-scale companies than in small-scale companies as depicted in Table 5. In other words, organizational competence is stronger in medium- to large-scale operations than in small-scale operations. Therefore, the elements related to firm size, eco labels, and social responsibility must all be considered in future studies to achieve a better understanding of organizational competence.

5.2.2. Environmental competence

Researchers have noted that environmental competence is vital to business sustainability competence. The current study defines environmental competence as a firm's ability to use corporate environmental practices to achieve business sustainability. As depicted in Table 6, our findings illustrate that firms place different values on environmental competence. For example, 3.5 million metric tons (CO₂) of greenhouse gas emissions have been avoided (Company 1) or 57,000 tons corrugated cardboard have been reduced (Company 2). Medium- to large-scale operations place a higher value on environmental competence than small-scale operations (Company 3) and a lower value on five-R applications. Therefore, environmental competence is stronger in medium- to large-scale operations than in small-scale operations. Based on the business sustainability competence context of the fashion industry, using the five elements of re-imagine, redesign, reuse, reduce, and recycle is necessary when measuring environmental competence.

5.2.3. Economic competence

Economic competence is one of the main constructs of business sustainability competence. This study found that capabilities, including market-driven competence and innovations, were adopted by the three companies to different extents. As depicted in Tables 7 and 8, our findings show that large-scale operations focus on refining their processes to satisfy customers' needs and on developing corporate programs to enhance the efficiency of their distribution channels, which help them achieve business sustainability competence. Small- to medium-scale operations focus on product development rather than process innovation to respond promptly to market changes and the needs of their customers. Therefore, economic competence was stronger in large-scale operations than in small- to medium-scale operations in our case studies. However, future studies can use the elements related to customer satisfaction, needs, product, and process innovations to measure

economic competence.

Future studies can expand the present understanding of these three constructs by i) generating a set of items and refining, evaluating, and designing a measurement instrument through several iterative processes; ii) adopting a theoretical definition of each construct derived from the previous literature; and iii) summarizing the data obtained through the instruments to provide a statistical profile through which the characteristics of each business sustainability capability construct influence business sustainability competence and subsequently affect firm performance.

6. Implications

Our core theoretical contribution is the research on business sustainability. We describe how our business sustainability competence construct links to firm performance as shown in Fig. 3. Although previous studies have identified that business sustainability is thought to influence firm performance (Gao & Bansal, 2013; Tang, Lai, & Cheng, 2016), explanations for its effects have been relatively sparse. One of the significant contributions of our work is the identification of organizational, environmental, and economic competences as components of business sustainability capability that enable business sustainability competence and enhance firm performance through business sustainability competence. Organizations that aim to outperform their rivals and survive in a competitive environment through business sustainability competence can direct their resources towards the creation of organizational, environmental, and economic competences. For example, firms can achieve business sustainability competence through the five-R applications, innovation, market-driven competence, and contribution to social well-being. We feel that these competences can serve as powerful theoretical lenses both in interpreting the results of prior investigations and shaping rigorous research models for future inquiry.

Second and more importantly, the major contribution of this study is the synthesis of the three theories to account for the importance of business sustainability capability and business substantiality competence as well as their influence on firm performance. Stakeholder theory is a core concept that emphasizes the linkages between society and business. Our findings suggest that the commitment of an organization to environmental and social relationships (environmental competence) develops strong stakeholder relationships. This study also contributes to the RBV and dynamic capabilities view by providing a better understanding of the sustainable competitive advantages of firms. For example, our results suggest that firms possess unique resources (organizational competence) and perform innovation (economic competence), giving rise to competitiveness improvements and economic success.

Third, our study contributes to the research examining the roles of firm size in business sustainability. The existing business sustainability research has examined how legal framework and policies (Ngai, et al., 2018), family business (Williams Jr. et al., 2018), and CSR practices (Russo-Spena, Tregua, & De Chiara, 2018) influence the sustainable development of firms. Our study contributes to the nascent literature that examines the firm's size setting: how the relationship between business sustainability capability and competence is affected by firm size. In identifying the importance of a firm's size setting to business sustainability, we believe that our study points to several exciting new areas of scholarship on the role of business sustainability capabilities and business sustainability competence in fostering firm performance.

The findings also offer several implications for managers. This study hopefully provides valuable insights for both researchers and practitioners to understand how business sustainability capability and

business sustainability competence enhance firm performance in the global fashion business. From the case studies, we have illustrated that business sustainability is essential for different sizes of enterprises in the fashion industry to maintain their competitive advantage. The examples from small- and medium-scale companies suggest that firms can adopt a sustainability approach to withstand strong competition from large-scale companies with extra resources. Therefore, insights from the proposed framework will help business managers consider business sustainability capabilities, business sustainability competencies, and firm performance in analyzing the sustainability behaviors of companies.

7. Conclusion

This study used evidence from three companies to determine why firms adopt business sustainability capabilities to achieve business sustainability competence and to determine the relationship between the business sustainability competence and firm performance of global fashion firms. A qualitative field study was performed to confirm and determine the relationships among business sustainability competence, business sustainability capability, and firm performance as outlined in our research model. Three main constructs (i.e., economic, organizational, and environmental competencies) affect the business sustainability competence and performance of global fashion firms. This research adds value to business sustainability capabilities by confirming the importance of economic competence in the context of market-driven competence and innovation, organizational competence in the context of managerial competence and social well-being, and environmental competence in the context of five-R applications.

8. Limitations and future research

The data were collected from 24 managerial executives/ professionals of three companies, company's annual reports and minutes of their annual general meetings, and company's websites. Although these informants had substantial knowledge about their organizations and the fashion business environment, biases were inevitable. Therefore, the informants were requested to provide actual business examples to support their statements. As in previous research, the results gathered from the three companies might not be generalizable considering the sample size. Additional research is needed to test the propositions on a large sample of companies. However, these results can provide strategic implications and valuable insights for managers in their business implementation. This study illustrates how and why organizational, environmental, and economic competencies enhance business sustainability competence and business performance. In addition, the identified constructs and proposed model can be used by academics as bases for future empirical research on the relationship between business sustainability competence and other factors.

This study also provides a framework for the relationship between business sustainability capability and competence, considering that the direct effect of business sustainability capabilities on business sustainability competence has never been empirically tested before. For a remarkable research contribution, future studies must empirically investigate the direct effects of business sustainability capabilities on business sustainability competence and firm performance.

Acknowledgment

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Appendix A. Summary on major literature on business sustainability from 2011 to 2020

Authors/ Year	Study	Data source	Sample size	Dependent variable	Independent variable	Pillars of Business Sustainability Competence			Findings
						Organizational competence	Economic competence	Environmental competence	
Ates and Bititci (2011)	Multiple case study	Manufacturing SMEs (Europe)	232 senior managers (37 firms)	n/a	n/a	x			Resilience and sustainability in SMEs will be increased by (1) ability to embrace people/ organizational dimensions and operational aspects of changing environment, (2) external communication and long-term planning for change proactively.
Bose and Luo (2011)	Conceptual paper	n/a	n/a	Green IT maturation	Green IT initialization		x	x	By using IT-enabled virtualization, a framework to identify/ examine factors of a firm' readiness for green is proposed.
Azevedo, Carvalho, Duarte, and Cruz-Machado (2012)	Case study	Portuguese automaker	4 Interviews with automaker SC manager	Sustainable development of business assessment	Green upstream supply chain practices; Lean upstream supply chain practices		x	x	1) Proposes a model for relationships between sustainable business development/ lean and green supply chain practices; 2) Reveals that lean paradigm aim to reduce waste, green paradigm target for reduce environmental influence.
Hassini, Surti, and Searcy (2012)	Case study	Canadian electric utility	1	n/a	n/a	x			Provides frameworks for sustainable supply chain management and performance measures.
Gibson et al. (2012)	Review paper	n/a	n/a	n/a	n/a	x			Suggests stakeholder management has a positive responsibility to enhance business sustainability.
Gunasekaran and Spalanzani (2012)	Conceptual paper	n/a	n/a	n/a	n/a	x			Provides a framework of sustainable business development in manufacturing and services.
Law and Gunasekaran (2012)	Survey	High-tech manufacturing firms (H.K.)	99 respondents (73 firms)	Sustainable development (Level of integration)	Motivating factors; Readiness	x			Sustainable development is driven by internal factors (policies, supportive infrastructure) and management (top management support).
Poveda-Bautista, Baptista, and García-Melón (2012)	Case study	Plastic sector of Venezuela	3 firms	n/a	n/a		x		Introduction of a new approach (combination of analytic process method/ balanced scorecard) to evaluate firm's competitiveness performance in reliable/ efficient way.
Bundy, Shropshire, and	Conceptual paper	n/a	n/a	n/a	n/a	x	x		Strategic cognition view is proposed for understanding firm

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Authors/ Year	Study	Data source	Sample size	Dependent variable	Independent variable	Pillars of Business Sustainability Competence	Organizational competence	Economic competence	Environmental competence	Findings
Buchholtz (2013)										responsiveness/ stakeholder concerns.
Gao and Bansal (2013)	Secondary data analysis	738 firms (1991–2003)	5,487 observations	Corporate financial performance	Corporate social commitment; Corporate environment commitment	x			x	An integrative logic is showed in managing business sustainability.
Kim, Amaeshi, Harris, and Suh (2013)	Case study	CSR practice in South Korea	n/a	CSR practice is short-term or sustainable; CSR practice is normative and strategic; CSR practice is implicit or explicit	Regulative pressures; Normative pressures, Cognitive-cultural pressures	x				Illustrates Korea concerned more short-termism (instead of sustainability) and normative (instead of strategic orientation) in CSR.
Acquaye, Genovese, Barrett, and Lenny Koh (2014)	Conceptual paper	n/a	n/a	n/a	n/a				x	Proposes a Multi-Regional Input-Output model to set supply chain carbon emissions benchmarks.
Fan, Lo, Ching, and Kan (2014)	Review paper	n/a	n/a	n/a	n/a	x				Occupational health and safety (OHS) is vital for business sustainability. Four domains have been found for OHS, i.e. sustainable operations, voluntary OHS systems, management systems integration and safety climate.
Hsu et al. (2016)	Survey	EMS ISO 14,001 – certified firms (Malaysia)	125	Reverse logistics	Eco-reputation strategic orientation (ERSO); Eco-Innovation strategic orientation		x		x	Implement sustainable supply chain initiatives results in Reverse Logistics -> Creating Value -> Competitive Advantages.
Searcy and Buslovich (2014)	Case study	Canadian firms	35	n/a	n/a	x				Growing significance of sustainability issues in firms is noted by exploring the corporate perspectives on the use and development of sustainability reports.
Slawinski and Bansal (2015)	Multi-case study	Firms in Alberta's oil sands	5	n/a	n/a	x			x	Reveals that firms juxtaposed the long term/ short term also confront the tension between society/ business in climate change issue.
Eriksson and Svensson (2015)	Review paper	n/a	n/a	n/a	n/a	x				Identification of sixteen elements that affect social responsibility in supply chain.
Pan and Nguyen (2015)	Survey	Manufacturing firms w/ Balanced scorecard & Product-service practices (Taiwan/ Vietnam/ Thailand)	30 managers/ 24 firms (70%/ 20%/ 10%)	Business performance	Financial perspective; Customer perspective; Internal process perspective; Learning & growth perspectives			x		Provides guideline to firms for attaining customer satisfaction/ business performance through sustainable product-service system practices.
Beh et al. (2016)	Case-study	Off-price Malaysia retailers	2	n/a	n/a				x	Highlights the relevance/ significance of

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Authors/ Year	Study	Data source	Sample size	Dependent variable	Independent variable	Pillars of Business Sustainability Competence	Organizational competence	Economic competence	Environmental competence	Findings
Karkoulian, Assaker, and Hallak (2016)	Survey	Home appliance & electronics organizations	400	Sustainability	360 Degree Feedback	x				business models in dealing the reverse supply chain. Demonstrates 360-degree feedback lead to organizational justice -> organizational culture.
Tang et al. (2016)	Multi-research-method	Retailers (H.K.)	141	Financial performance	Green store operations; Green transportation	x		x		Reveals that green retail operations influenced positively on firm's financial performance in retail industry.
Fontana, Sastre-Merino, and Baca (2017)	Case study	Peru	n/a	n/a	n/a	x				A methodology is proposed to prevent the creation of social conflicts from business strategy, which is significant to business sustainability.
Wright and Nyberg (2017)	Case study	Australian corporations	5	n/a	n/a	x		x		1) Highlights policy limitations of a dependence on market/ business responses to climate crisis; 2) Identifies deterioration of firm's environmental initiates over time.
Das (2018)	Conceptual paper	n/a	n/a	n/a	n/a	x				Proposes a model for integration of outcomes/ contributions of Lean practices/ tools in supply chain planning process to improve the sustainability performances of business.
Hahn and Figge (2018)	Review paper	n/a	n/a	n/a	n/a	x				1) Purposes an emerging integrative view on corporate sustainability; 2) Reveals that sustainability balanced scorecards is not suitable to attain strategic change for sustainability beyond incrementalism.
Ivory and Brooks (2018)	Conceptual paper	n/a	n/a	n/a	n/a	x				Recommendation to manage corporate sustainability by articulating specific organizational processes/ practices and associated with the application of strategic agility.
Jin et al. (2018)	Experiment	Factorial experiment (wind speed × weather condition × latitudes)	42 (7 × 3 × 2)	n/a	n/a		x		x	A hybrid energy supply model (integration of Power Purchase Agreement & Onsite Renewable Generation) is suggested to attain carbon-neutral industrial operations.
Russo-Spina et al. (2018)	Secondary data analysis	Multi-national corporations (MNCs)/	15 MNCs	n/a	n/a	x				Reveals the CSR disclosure practices of MNCs towards the

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Authors/ Year	Study	Data source	Sample size	Dependent variable	Independent variable	Pillars of Business Sustainability Competence Organizational competence	Economic competence	Environmental competence	Findings
Sasse-Werhahn, Bachmann, and Habisch (2018)	Conceptual paper	Automotive industry / CSR reports (2010–2013) n/a	n/a	n/a	n/a	x			increasing social and environmental accountability. A conceptual model is developed to illustrate the mutual interconnectedness between tension management and practical wisdom in CS, and how practical wisdom approach differs from business-case approach.
Svensson, Ferro, Hogevoid, Padin, and Sosa Varela (2018)	Survey	Industrial business samples (Norway/ Spain)	261/ 231 (Norway/ Spain)	Downstream stakeholder; Upstream stakeholder; Market stakeholder; Societal stakeholder	Focal company business sustainability	x			Develops a framework for business sustainability in regard to firm stakeholders in supply chains.
Williams Jr. et al. (2018)	Conceptual paper	n/a	n/a	Family business goal-related outcomes	Family business goal antecedents	x			In order to continue for their long-term business (not to risk their business sustainability), family firm might decide strategically not to internationalize their business.
Ngai, Law, Lo, Poon, and Peng (2018)	Case study	Domestic gas enterprises (China)	3	Sustainable development	Corporate social responsibility (CSR)	x			1) Governments and non-profit firms like trade unions and professional associations play their respective roles in CSR; 2) Throughout a legal framework and policies, government authorities can shape and guide the CSR practices of firms.
Cheng et al. (2019)	Survey	Insurance companies (China)	120 Sales team supervisors/ 426 Insurance salespeople (3 Firms)	Employee unethical pro-organizational behavior (UPB)	Higher-level leader responsible leadership	x			1) Responsible leadership is negatively related to UPB; 2) Responsible leadership assist to achieve business sustainability by cultivate and build trustful/ sustainable relationships to different stakeholders inside/ outside the firms.
Edinger-Schons et al. (2019)	Survey	Customer survey in 48 stores of international retailer	38,999	Purchase volume; Store visits	CSR-related training of frontline employees; Intensity of CSR communication through POS materials	x			Reveals that under the manager’s personal support, CSR-related training of frontline employees give its beneficial effects on customer behavior/ customers.
Rezaee and Tuo (2019)	Secondary data analysis	Firm-year observations (1999–2015)	35,110	Innate earnings quality; Discretionary earnings quality	Sustainability disclosure quantity; Sustainability disclosure quality	x		x	Sustainability disclosures of social, governance, and environmental performance reports are linked to earning quality in the context

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Authors/ Year	Study	Data source	Sample size	Dependent variable	Independent variable	Pillars of Business Sustainability Competence	Organizational competence	Economic competence	Environmental competence	Findings
Santoro, Thrassou, Bresciani, and Del Giudice (2019)	Survey	Firms for Information and communications technology industry (Italian)	181	Firm performance	Knowledge management (KM) strategy/ KM infrastructure	x				of culture and corporate ethical value. 1) Dynamic capabilities enhance business sustainability by re-configuring the existing firm's functional competencies; 2) Knowledge management orientation has a vital/ positive influence on firm's performance, particularly if firm has substantial dynamic capacities.
Khojastehpour and Shams (2019)	Conceptual paper	n/a	n/a	n/a	n/a	x		x		Suggests firms to manage their relationship with ecological settings proactively in order to create stakeholder value.
Sivarajah et al. (2020)	Case study	Multi-national enterprises (MNE); Small and medium-sized enterprises (SME)	5 MNE/ 4 SME	n/a	n/a	x		x		Reveals that participatory web environment enable business-to-business firms to remain suitable and become profitable through marketing related business activities and strategic operations.

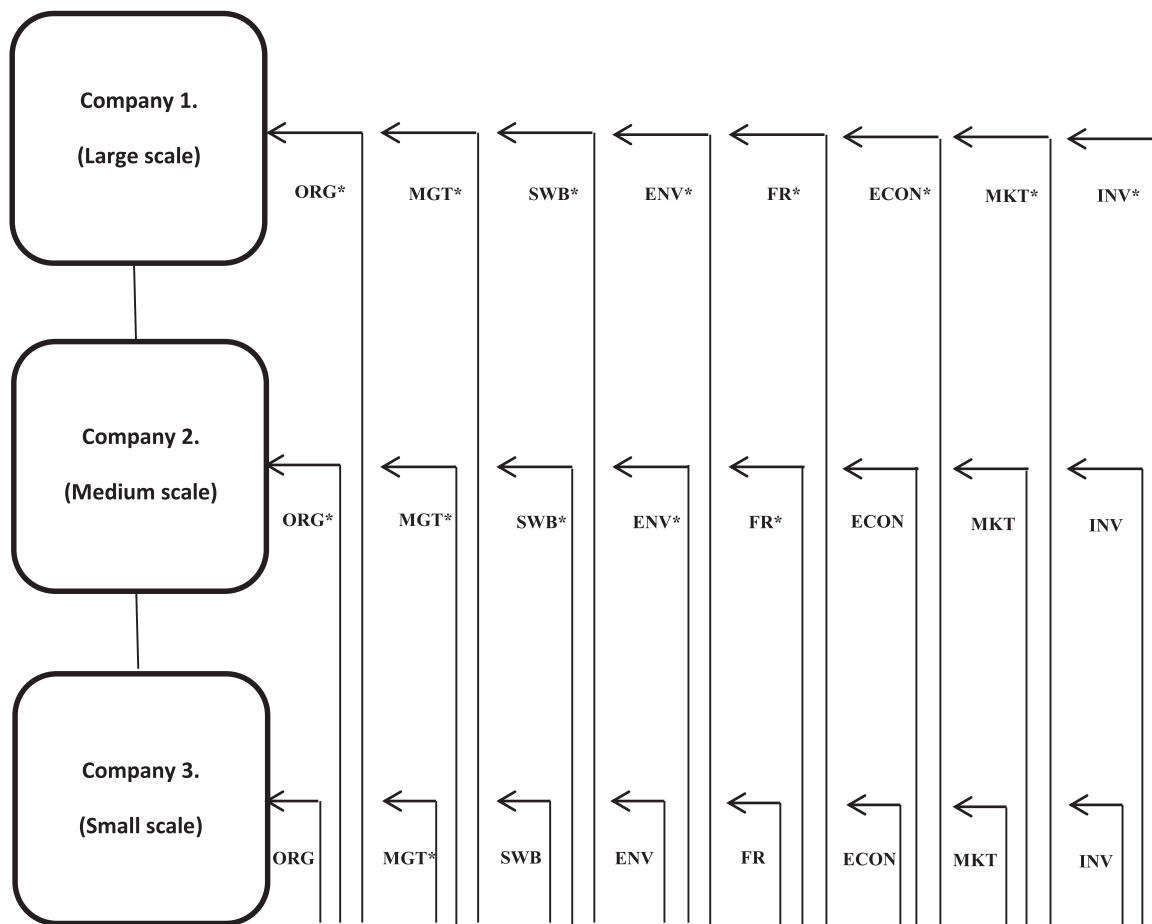
Appendix B.I. First wave sample interview questions

1. Please describe the business sustainability capability level of your firm.
2. Please answer the following questions based on your experiences, providing examples.
 - a. Please describe the extent of employee-related social well-being in your firm. How does this enable your firm to deliver socially responsible services and products to the customers?
 - b. Please describe the extent of 5-R applications in your firm.
 - c. Please describe how 5-R applications enhances the business sustainability capability of your firm.
 - d. Please describe the level of market-driven competence in your firm, such as understanding customers.
 - e. How does market-driven competence enable business sustainability capability in your firm?
 - f. Please comment on technological competence in your firm, such as innovation.
 - g. How does technological competence enable business sustainability capability in your firm?
 - h. Please describe the visions and role of top management in the business sustainability capability of your firm.
 - i. Please describe how the vision and role of top management enhances the business sustainability capability in your firm.
 - j. Please describe how business sustainability capability relates to the performance of your firm.

Appendix B.II. Second-wave sample interview questions

1. Please describe the joint efforts of different departments inside your firm in the areas of market-driven competence and 5-R applications.
2. Please indicate how the joint efforts of various departments support business sustainability capability.
3. Please describe whether your staff are equipped with the following competencies.
 - a. Know-how related to different functions in the business and ability to understand the general business environment.
 - b. Interpersonal skills and management knowledge, such as communicating effectively among business parties, working collaboratively, and planning/organizing/leading projects.
 - c. Ability to utilize/integrate/identify techniques effectively in the process of maintaining and developing services.
 - d. How can business sustainability capability be enhanced and enabled through the preceding capabilities?

Appendix B.III. Illustration of approach to coding aggregation



Notes:

- ORG_ refer to Organisational Competence,
 - ORG*_ refer to Higher Intensity of Organisational Competence that influence on Business Sustainability Competence;
 - MGT_ refer to Managerial Competence;
 - MGT*_ refer to Higher Intensity of Managerial Competence that influence on Business Sustainability Competence;
 - SWB_ refer to Social Well-Being,
 - SWB*_ refer to High Intensity of Social Well-Being that influence on Business Sustainability Competence;
 - ENV_ refer to Environmental Competence,
 - ENV*_ refer to High Intensity of Environmental Competence that influence on Business Sustainability Competence;
 - FR_ refer to Five-R Application,
 - FR*_ refer to Higher Intensity of Five-R Application that influence on Business Sustainability Competence;
 - ECON_ refer to Economic Competence,
 - ECON*_ refer to Higher Intensity of Economic Competence that influence on Business Sustainability Competence;
 - MKT_ refer to Marketing Competence,
 - MKT*_ refer to Higher Intensity of Marketing Competence that influence on Business Sustainability Competence;
 - INV_ refer to innovation,
 - INV*_ refer to High Intensity of Innovation that influence on Business Sustainability Competence.
- Remark* refers to higher intensity

References

Acquaye, A., Genovese, A., Barrett, J., & Lenny Koh, S. C. (2014). Benchmarking carbon emissions performance in supply chains. *Supply Chain Management: An International Journal*, 19(3), 306–321.

Agarwal, J., Osiyevskyy, O., & Feldman, P. M. (2015). Corporate reputation measurement: Alternative factor structures, nomological validity, and organizational outcomes. *Journal of Business Ethics*, 130(2), 485–506.

Amaeshi, K. M., Osuji, O. K., & Nnodim, P. (2008). Corporate social responsibility in supply chains of global brands: A boundaryless responsibility? Clarifications, exceptions and implications. *Journal of Business Ethics*, 81(1), 223–234.

Aras, N., Aksent, D., & Tanuğur, A. G. (2008). Locating collection centers for incentive-dependent returns under a pick-up policy with capacitated vehicles. *European Journal of Operational Research*, 191(3), 1223–1240.

Arevalo, J. A., & Aravind, D. (2017). Strategic Outcomes in Voluntary CSR: Reporting Economic and Reputational Benefits in Principles-Based Initiatives. *Journal of Business Ethics*, 144(1), 201–217.

Ates, A., & Bititci, U. (2011). Change process: A key enabler for building resilient SMEs. *International Journal of Production Research*, 49(18), 5601–5618.

Attig, N., & Cleary, S. (2015). Managerial practices and corporate social responsibility. *Journal of Business Ethics*, 131(1), 121–136.

Autry, C. W. (2005). Formalization of reverse logistics programs: A strategy for managing liberalized returns. *Industrial Marketing Management*, 34(7), 749–757.

- Ayuso, S., Ángel Rodríguez, M., García-Castro, R., & Ángel Ariño, M. (2011). Does stakeholder engagement promote sustainable innovation orientation? *Industrial Management & Data Systems*, 111(9), 1399–1417.
- Azevedo, S. G., Carvalho, H., Duarte, S., & Cruz-Machado, V. (2012). Influence of green and lean upstream supply chain management practices on business sustainability. *IEEE Transactions on Engineering Management*, 59(4), 753–765.
- Backhaus, K. B., Stone, B. A., & Heiner, K. (2002). Exploring the relationship between corporate social performance and employer attractiveness. *Business & Society*, 41(3), 292–318.
- Barnes, L., & Lea-Greenwood, G. (2006). Fast fashioning the supply chain: Shaping the research agenda. *Journal of Fashion Marketing and Management: An International Journal*, 10(3), 259–271.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Barney, J. B. (2001). Is the resource-based “view” a useful perspective for strategic management research? Yes. *Academy of Management Review*, 26(1), 41–56.
- Brammer, S. J., Pavelin, S., & Porter, L. A. (2006). Corporate social performance and geographical diversification. *Journal of Business Research*, 59(9), 1025–1034.
- Beh, L. S., Ghobadian, A., He, Q., Gallea, D., & O'Regan, N. (2016). Second-life retailing: A reverse supply chain perspective. *Supply Chain Management: An International Journal*, 21(2), 259–272.
- Berghman, L., Matthyssens, P., & Vandenbempt, K. (2006). Building competences for new customer value creation: An exploratory study. *Industrial Marketing Management*, 35(8), 961–973.
- Beske, P., Koplin, J., & Seuring, S. (2008). The use of environmental and social standards by German first-tier suppliers of the Volkswagen AG. *Corporate Social Responsibility and Environmental Management*, 15(2), 63–75.
- Bharadwaj, A. S. (2000). A resource-based perspective on information technology capability and firm performance: An empirical investigation. *MIS Quarterly*, 169–196.
- Bhagwat, R., & Sharma, M. K. (2007). Performance measurement of supply chain management: A balanced scorecard approach. *Computers & Industrial Engineering*, 53(1), 43–62.
- Boeker, W., & Karichalil, R. (2002). Entrepreneurial transitions: Factors influencing founder departure. *Academy of Management Journal*, 45(4), 818–826.
- Bose, I., & Pal, R. (2012). Do green supply chain management initiatives impact stock prices of firms? *Decision Support Systems*, 52(3), 624–634.
- Bose, R., & Luo, X. (2011). Integrative framework for assessing firms' potential to undertake Green IT initiatives via virtualization—A theoretical perspective. *The Journal of Strategic Information Systems*, 20(1), 38–54.
- Brenkert, G. G. (2002). Ethical challenges of social marketing. *Journal of Public Policy & Marketing*, 21(1), 14–25.
- Brindley, C., & Oxborrow, L. (2014). Aligning the sustainable supply chain to green marketing needs: A case study. *Industrial Marketing Management*, 43(1), 45–55.
- Brown, T. J., & Dacin, P. A. (1997). The company and the product: Corporate associations and consumer product responses. *Journal of Marketing*, 61(1), 68–84.
- Bundy, J., Shropshire, C., & Buchholtz, A. K. (2013). Strategic cognition and issue salience: Toward an explanation of firm responsiveness to stakeholder concerns. *Academy of Management Review*, 38(3), 352–376.
- Byssse, K., & Verbeke, A. (2003). Proactive environmental strategies: A stakeholder management perspective. *Strategic Management Journal*, 24(5), 453–470.
- Cagnin, C. H., Loveridge, D., & Butler, J. (2005). An information architecture to enable business sustainability, pp. 1–21.
- Caniato, F., Caridi, M., Crippa, L., & Moretto, A. (2012). Environmental sustainability in fashion supply chains: An exploratory case based research. *International Journal of Production Economics*, 135(2), 659–670.
- Cardoso, S. R., Barbosa-Póvoa, A. P. F., & Relvas, S. (2013). Design and planning of supply chains with integration of reverse logistics activities under demand uncertainty. *European Journal of Operational Research*, 226(3), 436–451.
- Carson, R. (2009). *Silent spring*, 1962, 1–6.
- Chen, C. W. (2014). Are workers more likely to be deviant than managers? A cross-national analysis. *Journal of Business Ethics*, 123(2), 221–233.
- Cheng, K., Wei, F., & Lin, Y. (2019). The trickle-down effect of responsible leadership on unethical pro-organizational behavior: The moderating role of leader-follower value congruence. *Journal of Business Research*, 102, 34–43.
- Child, J., & Yan, Y. (2003). Predicting the performance of international joint ventures: An investigation in China. *Journal of Management Studies*, 40(2), 283–320.
- Choi, C. J., Eldomiati, T. I., & Kim, S. W. (2007). Consumer trust, social marketing and ethics of welfare exchange. *Journal of Business Ethics*, 74(1), 17–23.
- Choi, S., & Ng, A. (2011). Environmental and economic dimensions of sustainability and price effects on consumer responses. *Journal of Business Ethics*, 104(2), 269–282.
- Choi, T. M., Lo, C. K., Wong, C. W., Yee, R. W., & Ho, H. P. Y. (2012). A Five-R analysis for sustainable fashion supply chain management in Hong Kong: A case analysis. *Journal of Fashion Marketing and Management: An International Journal*, 16(2), 161–175.
- Chow, P. S., & Li, C. K. (2018). Towards Closed-Loop Fashion Supply Chains—Reflections from Retailer-Facilitated Used Apparel Collection Programs. In *Contemporary Case Studies on Fashion Production, Marketing and Operations* (pp. 219–239). Singapore: Springer.
- Christensen, C. M., & Bower, J. L. (1996). Customer power, strategic investment, and the failure of leading firms. *Strategic Management Journal*, 197–218.
- Conner, K. R. (1991). A historical comparison of resource-based theory and five schools of thought within industrial organization economics: Do we have a new theory of the firm? *Journal of Management*, 17(1), 121–154.
- Dacin, M. T., Dacin, P. A., & Tracey, P. (2011). Social entrepreneurship: A critique and future directions. *Organization Science*, 22(5), 1203–1213.
- Darnall, N., & Edwards, D. (2006). Predicting the cost of environmental management system adoption: The role of capabilities, resources and ownership structure. *Strategic Management Journal*, 27(4), 301–320.
- Das, A., & Handfield, R. B. (1997). A meta-analysis of doctoral dissertations in purchasing. *Journal of Operations Management*, 15(2), 101–121.
- Das, K. (2018). Integrating lean systems in the design of a sustainable supply chain model. *International Journal of Production Economics*, 198, 177–190.
- Day, G. S. (1994). Continuous learning about markets. *California Management Review*, 36(4), 9–31.
- De Brito, M. P., Carbone, V., & Blanquart, C. M. (2008). Towards a sustainable fashion retail supply chain in Europe: Organisation and performance. *International Journal of Production Economics*, 114(2), 534–553.
- Detert, J. R., & Treviño, L. K. (2010). Speaking up to higher-ups: How supervisors and skip-level leaders influence employee voice. *Organization Science*, 21(1), 249–270.
- Dhanda, K. K. (2013). Case study in the evolution of sustainability: Baxter international inc. *Journal of Business Ethics*, 112(4), 667–684.
- Dibrell, C., Craig, J. B., Kim, J., & Johnson, A. J. (2015). Establishing how natural environmental competency, organizational social consciousness, and innovativeness relate. *Journal of Business Ethics*, 127(3), 591–605.
- Dickson, P. R. (1996). The static and dynamic mechanics of competition: A comment on Hunt and Morgan's comparative advantage theory. *The Journal of Marketing*, 102–106.
- Drucker, P. (1986). *Innovation and Entrepreneurship*. New York: Practice and Principles.
- Du, S., Bhattacharya, C. B., & Sen, S. (2015). Corporate social responsibility, multi-faceted job-products, and employee outcomes. *Journal of Business Ethics*, 131(2), 319–335.
- Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability. *Business Strategy and the Environment*, 11(2), 130–141.
- Ebrahim-Khanjari, N., Hopp, W., & Irvani, S. M. (2012). Trust and information sharing in supply chains. *Production and Operations Management*, 21(3), 444–464.
- Edinger-Schons, L. M., Lengler-Graiff, L., Scheidler, S., & Wieseke, J. (2019). Frontline employees as corporate social responsibility (CSR) ambassadors: A quasi-field experiment. *Journal of Business Ethics*, 157(2), 359–373.
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal*, 1105–1121.
- Elg, U., Deligonul, S. Z., Ghauri, P. N., Danis, W., & Tarnovskaya, V. (2012). Market-driving strategy implementation through global supplier relationships. *Industrial Marketing Management*, 41(6), 919–928.
- Epstein, M. J., & Roy, M. J. (1997). Using ISO 14000 for improved organizational learning and environmental management. *Environmental Quality Management*, 7(1), 21–30.
- Epstein, M. J., & Wisner, P. S. (2001). Using a balanced scorecard to implement sustainability. *Environmental Quality Management*, 11(2), 1–10.
- Eriksson, D., & Svensson, G. (2015). Elements affecting social responsibility in supply chains. *Supply Chain Management: An International Journal*, 20(5), 561–566.
- Esty, D. C., & Winston, A. (2009). Green to gold: How smart companies use environmental strategy to innovate, create value, and build competitive advantage. *John Wiley & Sons*, 281–296.
- Faccio, M., Persona, A., Sgarbossa, F., & Zanin, G. (2014). Sustainable SC through the complete reprocessing of end-of-life products by manufacturers: A traditional versus social responsibility company perspective. *European Journal of Operational Research*, 233(2), 359–373.
- Fan, D., Lo, C. K., Ching, V., & Kan, C. W. (2014). Occupational health and safety issues in operations management: A systematic and citation network analysis review. *International Journal of Production Economics*, 158, 334–344.
- Figge, F., Hahn, T., Schaltegger, S., & Wagner, M. (2002). The sustainability balanced scorecard—linking sustainability management to business strategy. *Business Strategy and the Environment*, 11(5), 269–284.
- Fiss, P. C. (2007). A set-theoretic approach to organizational configurations. *Academy of Management Review*, 32(4), 1180–1198.
- Fiss, P. C. (2011). Building better causal theories: A fuzzy set approach to typologies in organization research. *Academy of Management Journal*, 54(2), 393–420.
- Fontana, A., Sastre-Merino, S., & Baca, M. (2017). The territorial dimension: The component of business strategy that prevents the generation of social conflicts. *Journal of Business Ethics*, 141(2), 367–380.
- Fowler, S. W., King, A. W., Marsh, S. J., & Victor, B. (2000). Beyond products: New strategic imperatives for developing competencies in dynamic environments. *Journal of Engineering and Technology Management*, 17(3), 357–377.
- Freeman, R. E. (2010). *Strategic management: A stakeholder approach* (p. 81). Cambridge University Press.
- Frostenson, M. (2016). Humility in business: A contextual approach. *Journal of Business Ethics*, 138(1), 91–102.
- Galarraga Gallastegui, I. (2002). The use of eco-labels: A review of the literature. *Environmental Policy and Governance*, 12(6), 316–331.
- Gao, J., & Bansal, P. (2013). Instrumental and integrative logics in business sustainability. *Journal of Business Ethics*, 112(2), 241–255.
- García, B. C., & Chavez, D. (2014). Network-based innovation systems: A capital base for the Monterrey city-region. *Mexico. Expert Systems with Applications*, 41(12), 5636–5646.
- Garg, V. K., Walters, B. A., & Priem, R. L. (2003). Chief executive scanning emphases, environmental dynamism, and manufacturing firm performance. *Strategic Management Journal*, 24(8), 725–744.
- Gibson, K. (2012). Stakeholders and sustainability: An evolving theory. *Journal of Business Ethics*, 109(1), 15–25.

- Gnyawali, D. R., Fan, W., & Penner, J. (2010). Competitive actions and dynamics in the digital age: An empirical investigation of social networking firms. *Information Systems Research*, 21(3), 594–613.
- Gopalakrishnan, S., & Bierly, P. E. (2006). The impact of firm size and age on knowledge strategies during product development: A study of the drug delivery industry. *IEEE Transactions on Engineering Management*, 53(1), 3–16.
- Granstrand, O. (1998). Towards a theory of the technology-based firm. *Research Policy*, 27(5), 465–489.
- Guiltinan, J. (2009). Creative destruction and destructive creations: Environmental ethics and planned obsolescence. *Journal of Business Ethics*, 89(1), 19–28.
- Gunasekaran, A., & Spalanzani, A. (2012). Sustainability of manufacturing and services: Investigations for research and applications. *International journal of production economics*, 140(1), 35–47.
- Hahn, T., & Figge, F. (2018). Why architecture does not matter: On the fallacy of sustainability balanced scorecards. *Journal of Business Ethics*, 150(4), 919–935.
- Hart, S. L. (1995). A natural-resource-based view of the firm. *Academy of Management Review*, 20(4), 986–1014.
- Hart, S. L., & Milstein, M. B. (2003). Creating sustainable value. *Academy of Management Perspectives*, 17(2), 56–67.
- Harvey, M., McIntyre, N., Moeller, M., & Sloan, H., III (2012). Managerial self-concept in a global context: An integral component of cross-cultural competencies. *Journal of Leadership & Organizational Studies*, 19(1), 115–125.
- Hassini, E., Surti, C., & Searcy, C. (2012). A literature review and a case study of sustainable supply chains with a focus on metrics. *International Journal of Production Economics*, 140(1), 69–82.
- Hellsten, S., & Mallin, C. (2006). Are 'ethical' or 'socially responsible' investments socially responsible? *Journal of Business Ethics*, 66(4), 393–406.
- Hendriks, P. H. (1999). Do smarter systems make for smarter organizations? *Decision Support Systems*, 27(1), 197–211.
- Henninger, C. E., Alevizov, P. J., Oates, C. J., & Cheng, R. (2015). Sustainable supply chain management in the slow-fashion industry. In *Sustainable Fashion Supply Chain Management* (pp. 129–153). Cham: Springer.
- Hillman, A. J., & Keim, G. D. (2001). Shareholder value, stakeholder management, and social issues: What's the bottom line? *Strategic Management Journal*, 22(2), 125–139.
- Hoffman, A. J. (2000). Integrating environmental and social issues into corporate practice. *Environment: Science and Policy for Sustainable Development*, 42(5), 22–33.
- Holmstrom, J., Liotta, G., & Chaudhuri, A. (2017). Sustainability outcomes through direct digital manufacturing-based operational practices: A design theory approach. *Journal of Cleaner Production*, 167, 951–961.
- Holton, I., Glass, J., & Price, A. D. (2010). Managing for sustainability: Findings from four company case studies in the UK precast concrete industry. *Journal of Cleaner Production*, 18(2), 152–160.
- Hsu, C. C., Tan, K. C., & Mohamad Zailani, S. H. (2016). Strategic orientations, sustainable supply chain initiatives, and reverse logistics: Empirical evidence from an emerging market. *International Journal of Operations & Production Management*, 36(1), 86–110.
- Hsu, Y. L., & Liu, C. C. (2010). Environmental performance evaluation and strategy management using balanced scorecard. *Environmental Monitoring and Assessment*, 170(1–4), 599–607.
- Humphreys, P., McIvor, R., & Chan, F. (2003). Using case-based reasoning to evaluate supplier environmental management performance. *Expert Systems with Applications*, 25(2), 141–153.
- Hvass, K. K. (2014). Post-retail responsibility of garments—a fashion industry perspective. *Journal of Fashion Marketing and Management*, 18(4), 413–430.
- Ip, K. Y. K. (2001). "Construction and evaluation of a green supply chain", DBA thesis. *The Hong Kong Polytechnic University, Hong Kong*.
- Illge, L., & Preuss, L. (2012). Strategies for sustainable cotton: Comparing niche with mainstream markets. *Corporate Social Responsibility and Environmental Management*, 19(2), 102–113.
- Ivory, S. B., & Brooks, S. B. (2018). Managing corporate sustainability with a paradoxical lens: Lessons from strategic agility. *Journal of Business Ethics*, 148(2), 347–361.
- Jackson, L., & Young, L. (2016). When business networks "kill" social networks: A case study in Bangladesh. *Industrial Marketing Management*, 58, 148–161.
- Jayaraman, V., Patterson, R. A., & Rolland, E. (2003). The design of reverse distribution networks: Models and solution procedures. *European Journal of Operational Research*, 150(1), 128–149.
- Jin, T., Shi, T., & Park, T. (2018). The quest for carbon-neutral industrial operations: Renewable power purchase versus distributed generation. *International Journal of Production Research*, 56(17), 5723–5735.
- Johannessen, J. A., Olsen, B., & Lumpkin, G. T. (2001). Innovation as newness: What is new, how new, and new to whom? *European Journal of innovation management*, 4(1), 20–31.
- Johannessen, J. A., Olaisen, J., & Olsen, B. (2001). Mismanagement of tacit knowledge: The importance of tacit knowledge, the danger of information technology, and what to do about it. *International Journal of Information Management*, 21(1), 3–20.
- Jung, J. C., & Lee, K. P. (2016). Host Country Sourcing of Multinational Enterprises: A Corporate Social Responsibility Perspective. *Journal of Business Ethics*, 1–19.
- Kannan, D., de Sousa Jabbour, A. B. L., & Jabbour, C. J. C. (2014). Selecting green suppliers based on GSCM practices: Using fuzzy TOPSIS applied to a Brazilian electronics company. *European Journal of Operational Research*, 233(2), 432–447.
- Karkoulian, S., Assaker, G., & Hallak, R. (2016). An empirical study of 360-degree feedback, organizational justice, and firm sustainability. *Journal of Business Research*, 69(5), 1862–1867.
- Kefalas, A. G. (1998). Think globally, act locally. *Thunderbird International Business Review*, 40(6), 547–562.
- Khojastehpour, M., & Shams, S. R. (2019). Addressing the complexity of stakeholder management in international ecological setting: A CSR approach. Forthcoming, at *Journal of Business Research*.
- Kim, C. H., Amaeshi, K., Harris, S., & Suh, C. J. (2013). CSR and the national institutional context: The case of South Korea. *Journal of Business Research*, 66(12), 2581–2591.
- Kleine, A., & Von Hauff, M. (2009). Sustainability-driven implementation of corporate social responsibility: Application of the integrative sustainability triangle. *Journal of Business Ethics*, 85(3), 517.
- Kohli, A. K., & Jaworski, B. J. (1990). Market orientation: The construct, research propositions, and managerial implications. *The Journal of Marketing*, 1–18.
- Konrad, A., Steurer, R., Langer, M. E., & Martinuzzi, A. (2006). Empirical findings on business–society relations in Europe. *Journal of Business Ethics*, 63(1), 89–105.
- Koszevska, M. (2016). Understanding consumer behavior in the sustainable clothing market: Model development and verification. In *Green Fashion* (pp. 43–94). Singapore: Springer.
- Kumar, V., & Christodouloupolou, A. (2014). Sustainability and branding: An integrated perspective. *Industrial Marketing Management*, 43(1), 6–15.
- Lado, A. A., Boyd, N. G., & Wright, P. (1992). A competency-based model of sustainable competitive advantage: Toward a conceptual integration. *Journal of Management*, 18(1), 77–91.
- Lado, A. A., & Wilson, M. C. (1994). Human resource systems and sustained competitive advantage: A competency-based perspective. *Academy of Management Review*, 19(4), 699–727.
- Lado, A. A., Boyd, N. G., & Hanlon, S. C. (1997). Competition, cooperation, and the search for economic rents: A syncretic model. *Academy of Management Review*, 22(1), 110–141.
- Lamb, R. (1984). *Competitive Strategic Management*. Prentice Hall.
- Laverdure, L., & Conn, A. (2012). SEA Change: How Sustainable EA Enables Business Success in Times of Disruptive Change. *Journal of Enterprise Architecture*, 8(1), 9–21.
- Lavie, D. (2007). Alliance portfolios and firm performance: A study of value creation and appropriation in the US software industry. *Strategic Management Journal*, 28(12), 1187–1212.
- Law, K. M., & Gunasekaran, A. (2012). Sustainability development in high-tech manufacturing firms in Hong Kong: Motivators and readiness. *International Journal of Production Economics*, 137(1), 116–125.
- Le Bon, J., & Hughes, D. E. (2009). The dilemma of outsourced customer service and care: Research propositions from a transaction cost perspective. *Industrial Marketing Management*, 38(4), 404–410.
- Lee, K. H., & Saen, R. F. (2012). Measuring corporate sustainability management: A data envelopment analysis approach. *International Journal of Production Economics*, 140(1), 219–226.
- Lin, G. T. R., & Lin, J. (2006). Ethical customer value creation: Drivers and barriers. *Journal of Business Ethics*, 67(1), 93–105.
- Lin, H. (2012). Cross-sector alliances for corporate social responsibility partner heterogeneity moderates environmental strategy outcomes. *Journal of Business Ethics*, 110(2), 219–229.
- Lin-Hi, N., & Blumberg, I. (2017). The power (lessness) of industry self-regulation to promote responsible labor standards: Insights from the Chinese toy industry. *Journal of Business Ethics*, 143(4), 789–805.
- Lin, H., & Darnall, N. (2015). Strategic alliance formation and structural configuration. *Journal of Business Ethics*, 127(3), 549–564.
- Locke, K. (1996). Rewriting the discovery of grounded theory after 25 years? *Journal of Management Inquiry*, 5(3), 239–245.
- Lopez-Gamero, M. D., Claver-Cortés, E., & Molina-Azorín, J. F. (2008). Complementary resources and capabilities for an ethical and environmental management: A qual/quant study. *Journal of Business Ethics*, 82(3), 701–732.
- Lorenzoni, G., & Lipparini, A. (1999). The leveraging of interfirm relationships as a distinctive organizational capability: A longitudinal study. *Strategic Management Journal*, 317–338.
- Lowendahl, B., & Revang, O. (1998). Challenges to existing strategy theory in a postindustrial society. *Strategic Management Journal*, 755–773.
- Lyytinen, K., & Rose, G. M. (2003). The disruptive nature of information technology innovations: The case of internet computing in systems development organizations. *MIS Quarterly*, 557–596.
- Mahler, D. (2007). The sustainable supply chain. *Supply Chain Management Review*, 11(8), 59–60.
- Makodok, R. (2003). Doing the right thing and knowing the right thing to do: Why the whole is greater than the sum of the parts. *Strategic Management Journal*, 24(10), 1043–1055.
- Maloni, M. J., & Benton, W. C. (1997). Supply chain partnerships: Opportunities for operations research. *European Journal of Operational Research*, 101(3), 419–429.
- Marcus, A., & Geffen, D. (1998). The dialectics of competency acquisition: Pollution prevention in electric generation. *Strategic Management Journal*, 1145–1168.
- Mayer, F. W., & Pickles, J. (2011). Re-embedding governance: Global apparel value chains and decent work. *International Labour Review*, 150.
- Menguc, B., & Auh, S. (2006). Creating a firm-level dynamic capability through capitalizing on market orientation and innovativeness. *Journal of the Academy of Marketing Science*, 34(1), 63–73.
- Miller, D. (2003). An asymmetry-based view of advantage: Towards an attainable sustainability. *Strategic Management Journal*, 24(10), 961–976.
- Miller, R., & Blais, R. A. (1993). Modes of innovation in six industrial sectors. *IEEE Transactions on Engineering Management*, 40(3), 264–273.
- Mitchell, R. K., Weaver, G. R., Agle, B. R., Bailey, A. D., & Carlson, J. (2016). Stakeholder agency and social welfare: Pluralism and decision making in the multi-objective corporation. *Academy of Management Review*, 41(2), 252–275.

- Moeller, M., Harvey, M., Griffith, D., & Richey, G. (2012). The impact of country-of-origin on the acceptance of foreign subsidiaries in host countries: An examination of the liability-of-foreignness. *International Business Review*, 22(1), 89–99.
- Molina-Castillo, F. J., Jimenez-Jimenez, D., & Munuera-Aleman, J. L. (2011). Product competence exploitation and exploration strategies: The impact on new product performance through quality and innovativeness. *Industrial Marketing Management*, 40(7), 1172–1182.
- Morgan, R. E., & Berthon, P. (2008). Market orientation, generative learning, innovation strategy and business performance inter-relationships in bioscience firms. *Journal of Management Studies*, 45(8), 1329–1353.
- Naude, M. (2012). Sustainable development and organizational learning: Mutually supportive. *International Journal of Business and Management Studies*, 1(1), 523–540.
- Nayak, R., Houshyar, S., Patnaik, A., Nguyen, L. T., Shanks, R. A., Padhye, R., & Fegussom, M. (2020). Sustainable reuse of fashion waste as flame-retardant mattress filling with ecofriendly chemicals. *Journal of Cleaner Production*, 251, 1–9.
- Newman, K. L. (2000). Organizational transformation during institutional upheaval. *Academy of Management Review*, 25(3), 602–619.
- Ngai, E. W., Xiu, L., & Chau, D. C. (2009). Application of data mining techniques in customer relationship management: A literature review and classification. *Expert Systems with Applications*, 36(2), 2592–2602.
- Ngai, E. W. T., Law, C. C., Lo, C. W., Poon, J. K. L., & Peng, S. (2018). Business sustainability and corporate social responsibility: Case studies of three gas operators in China. *International Journal of Production Research*, 56(1–2), 660–676.
- Ogbonna, E., & Harris, L. C. (2002). Organizational culture: A ten year, two-phase study of change in the uk food retailing sector. *Journal of Management Studies*, 39(5), 673–706.
- Omamo, S. W., & Lynam, J. K. (2003). Agricultural science and technology policy in Africa. *Research Policy*, 32(9), 1681–1694.
- O'Reilly, C. A., III, & Tushman, M. L. (2008). Ambidexterity as a dynamic capability: Resolving the innovator's dilemma. *Research in Organizational Behavior*, 28, 185–206.
- Pajo, K., & Lee, L. (2011). Corporate-sponsored volunteering: A work design perspective. *Journal of Business Ethics*, 99(3), 467–482.
- Pan, J. N., & Nguyen, H. T. N. (2015). Achieving customer satisfaction through product–service systems. *European Journal of Operational Research*, 247(1), 179–190.
- Pan, S. L., Pan, G., Chen, A. J., & Hsieh, M. H. (2007). The dynamics of implementing and managing modularity of organizational routines during capability development: Insights from a process model. *IEEE Transactions on Engineering Management*, 54(4), 800–813.
- Panwar, R., Paul, K., Nybakk, E., Hansen, E., & Thompson, D. (2014). The legitimacy of CSR actions of publicly traded companies versus family-owned companies. *Journal of Business Ethics*, 125(3), 481–496.
- Park, J. H., Lee, J. K., & Yoo, J. S. (2005). A framework for designing the balanced supply chain scorecard. *European Journal of Information Systems*, 14(4), 335–346.
- Parsaeifar, S., Bozorgi-Amiri, A., Naimi-Sadigh, A., & Sangari, M. S. (2019). A game theoretical for coordination of pricing, recycling, and green product decisions in the supply chain. *Journal of Cleaner Production*, 226, 37–49.
- Paulraj, A., Chen, I. J., & Blome, C. (2017). Motives and performance outcomes of sustainable supply chain management practices: A multi-theoretical perspective. *Journal of Business Ethics*, 145(2), 239–258.
- Perry, C. (1998). Processes of a case study methodology for postgraduate research in marketing. *European Journal of Marketing*, 32(9/10), 785–802.
- Porter, M. E., & Van der Linde, C. (1995). Green and competitive: Ending the stalemate. *Harvard Business Review*, 73(5), 120–134.
- Poveda-Bautista, R., Baptista, D. C., & García-Melón, M. (2012). Setting competitiveness indicators using BSC and ANP. *International Journal of Production Research*, 50(17), 4738–4752.
- Powell, I., & Probst-Bell, C. (2010). Leveraging EHS Data and Tools for a Safer and Greener Supply Chain—Environmental health and safety (EHS) regulatory compliance programs and strategies, by definition, traditionally have been aimed at preventing violations, fostering safety and reducing risk. *Occupational Hazards*, 3(5), 27.
- Prahalad, C. K., & Hamel, G. (1990). The core competence of the corporation. *Boston (Ma)*, 1990, 235–256.
- Prahalad, C. K., & Bettis, R. A. (1986). The dominant logic: A new linkage between diversity and performance. *Strategic Management Journal*, 7(6), 485–501.
- Preuss, L. (2001). In dirty chains? Purchasing and greener manufacturing. *Journal of Business Ethics*, 34(3), 345–359.
- Protogerou, A., Caloghirou, Y., & Lioukas, S. (2011). Dynamic capabilities and their indirect impact on firm performance. *Industrial and Corporate Change*, 21(3), 615–647.
- Pujari, D., Peattie, K., & Wright, G. (2004). Organizational antecedents of environmental responsiveness in industrial new product development. *Industrial Marketing Management*, 33(5), 381–391.
- Rai, A., Patnayakuni, R., & Seth, N. (2006). Firm performance impacts of digitally enabled supply chain integration capabilities. *MIS Quarterly*, 225–246.
- Ramdas, K., & Spekman, R. E. (2000). Chain or shackles: Understanding what drives supply-chain performance. *Interfaces*, 30(4), 3–21.
- Rezaee, Z. (2016). Business sustainability research: A theoretical and integrated perspective. *Journal of Accounting Literature*, 36, 48–64.
- Rezaee, Z., & Tuo, L. (2019). Are the quantity and quality of sustainability disclosures associated with the innate and discretionary earnings quality? *Journal of Business Ethics*, 155(3), 763–786.
- Russo-Spina, T., Tregua, M., & De Chiara, A. (2018). Trends and drivers in CSR disclosure: A focus on reporting practices in the automotive industry. *Journal of Business Ethics*, 151(2), 563–578.
- Santoro, G., Thrassou, A., Bresciani, S., & Del Giudice, M. (2019). Do Knowledge Management and Dynamic Capabilities Affect Ambidextrous Entrepreneurial Intensity and Firms' Performance? *IEEE Transactions on Engineering Management*.
- Sasse-Werhahn, L. F., Bachmann, C., & Habisch, A. (2018). Managing tensions in corporate sustainability through a practical wisdom lens. *Journal of Business Ethics*, 1–14.
- Schilke, O., Hu, S., & Helfat, C. E. (2018). Quo vadis, dynamic capabilities? A content-analytic review of the current state of knowledge and recommendations for future research. *Academy of Management Annals*, 12(1), 390–439.
- Searcy, C., & Buslovich, R. (2014). Corporate perspectives on the development and use of sustainability reports. *Journal of Business Ethics*, 121(2), 149–169.
- Seuring, S., & Goldbach, M. (2006). *Managing sustainability performance in the textile chain* (pp. 466–477). Greenleaf: Managing the business case for sustainability. Sheffield.
- Seuring, S., & Muller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. *Journal of Cleaner Production*, 16(15), 1699–1710.
- Sharma, M. K., & Bhagwat, R. (2007). An integrated BSC-AHP approach for supply chain management evaluation. *Measuring Business Excellence*, 11(3), 57–68.
- Shedroff, N. (2009). Design is the problem: The future of design must be sustainable. *Rosenfeld Media*, 315–355.
- Shen, B., & Chan, H. L. (2017). Forecast information sharing for managing supply chains in the big data era: Recent development and future research. *Asia-Pacific Journal of Operational Research*, 34(01).
- Shi, T., Gu, W., Chhajed, D., & Petrucci, N. C. (2016). Effects of remanufacturable product design on market segmentation and the environment. *Decision Sciences*, 47(2), 298–332.
- Shin, H., Ellinger, A. E., Nolan, H. H., DeCoster, T. D., & Lane, F. (2016). An assessment of the association between renewable energy utilization and firm financial performance. *Journal of Business Ethics*, 1–18.
- Simola, S. K. (2007). The pragmatics of care in sustainable global enterprise. *Journal of Business Ethics*, 74(2), 131–147.
- Sinkovics, R. R., Penz, E., & Ghauri, P. N. (2008). Enhancing the trustworthiness of qualitative research in international business. *Management International Review*, 48(6), 689–714.
- Sivarajah, U., Irani, Z., Gupta, S., & Mahroof, K. (2020). Role of big data and social media analytics for business to business sustainability: A participatory web context. *Industrial Marketing Management*, 86, 163–179.
- Slater, S. F., & Narver, J. C. (1998). Customer-led and market-oriented: Let's not confuse the two. *Strategic Management Journal*, 1001–1006.
- Slaughter, S. A., Levine, L., Ramesh, B., Pries-Heje, J., & Baskerville, R. (2006). Aligning software processes with strategy. *MIS Quarterly*, 891–918.
- Slawinski, N., & Bansal, P. (2015). Short on time: Intertemporal tensions in business sustainability. *Organization Science*, 26(2), 531–549.
- Soltani, E., Syed, J., Liao, Y. Y., & Iqbal, A. (2015). Managerial mindsets toward corporate social responsibility: The case of auto industry in Iran. *Journal of Business Ethics*, 129(4), 795–810.
- Song, M., Droge, C., Hanvanich, S., & Calantone, R. (2005). Marketing and technology resource complementarity: An analysis of their interaction effect in two environmental contexts. *Strategic Management Journal*, 26(3), 259–276.
- Souza, G. C. (2013). Closed-loop supply chains: A critical review, and future research. *Decision Sciences*, 44(1), 7–38.
- Speier, C., Whipple, J. M., Closs, D. J., & Voss, M. D. (2011). Global supply chain design considerations: Mitigating product safety and security risks. *Journal of Operations Management*, 29(7), 721–736.
- Spence, M., Gherib, J. B. B., & Biwolé, V. O. (2011). Sustainable entrepreneurship: Is entrepreneurial will enough? A north–south comparison. *Journal of Business Ethics*, 99(3), 335–367.
- Spiller, R. (2000). Ethical business and investment: A model for business and society. *Journal of Business Ethics*, 27(1–2), 149–160.
- Spiller, C., Pio, E., Erakovic, L., & Henare, M. (2011). Wise up: Creating organizational wisdom through an ethic of Kaitiakitanga. *Journal of Business Ethics*, 104(2), 223–235.
- Stadtler, L. (2017). Tightrope walking: Navigating competition in multi-company cross-sector social partnerships. *Journal of Business Ethics*, 1–17.
- Strahle, J., & Muller, V. (2017). Key aspects of sustainability in fashion retail. In *Green fashion retail* (pp. 7–26). Singapore: Springer.
- Strauss, K., Lepoutre, J., & Wood, G. (2017). Fifty shades of green: How microfoundations of sustainability dynamic capabilities vary across organizational contexts. *Journal of Organizational Behavior*, 38, 1338–1355.
- Surroca, J., Tribó, J. A., & Waddock, S. (2010). Corporate responsibility and financial performance: The role of intangible resources. *Strategic Management Journal*, 31(5), 463–490.
- Svensson, G., Ferro, C., Høgevoid, N., Padin, C., & Sosa Varela, J. C. (2018). Developing a theory of focal company business sustainability efforts in connection with supply chain stakeholders. *Supply Chain Management: An International Journal*, 23(1), 16–32.
- Tam, F. Y., Chan, T. S., Chu, P. W., Lai, T. C., & Wang, L. L. (2005). Opportunities and challenges: Hong Kong as Asia's fashion hub. *Journal of Fashion Marketing and Management: An International Journal*, 9(2), 221–231.
- Tang, A. K., Lai, K. H., & Cheng, T. C. E. (2016). A multi-research-method approach to studying environmental sustainability in retail operations. *International Journal of Production Economics*, 171, 394–404.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533.
- Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 1319–1350.

- Turker, D., & Altuntas, C. (2014). Sustainable supply chain management in the fast fashion industry: An analysis of corporate reports. *European Management Journal*, 32(5), 837–849.
- Tzokas, N., Kim, Y. A., Akbar, H., & Al-Dajani, H. (2015). Absorptive capacity and performance: The role of customer relationship and technological capabilities in high-tech SMEs. *Industrial Marketing Management*, 47, 134–142.
- Van Kleef, J. A. G., & Roome, N. J. (2007). Developing capabilities and competence for sustainable business management as innovation: A research agenda. *Journal of Cleaner Production*, 15(1), 38–51.
- Vanpoucke, E., Vereecke, A., & Boyer, K. K. (2014). Triggers and patterns of integration initiatives in successful buyer–supplier relationships. *Journal of Operations Management*, 32(1–2), 15–33.
- Vesalainen, J., & Hakala, H. (2014). Strategic capability architecture: The role of network capability. *Industrial Marketing Management*, 43(6), 938–950.
- Wals, A. E. (2014). Sustainability in higher education in the context of the UN DESD: A review of learning and institutionalization processes. *Journal of Cleaner Production*, 62, 8–15.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171–180.
- Williams, R. I., Jr, Pieper, T. M., Kellermanns, F. W., & Astrachan, J. H. (2018). Family firm goals and their effects on strategy, family and organization behavior: A review and research agenda. *International Journal of Management Reviews*, 20, S63–S82.
- Wittmann, C. M., Hunt, S. D., & Arnett, D. B. (2009). Explaining alliance success: Competences, resources, relational factors, and resource-advantage theory. *Industrial Marketing Management*, 38(7), 743–756.
- Woodside, A. G. (2013). Moving beyond multiple regression analysis to algorithms: Calling for adoption of a paradigm shift from symmetric to asymmetric thinking in data analysis and crafting theory. *Journal of Business Research*, 66(4), 463–472.
- Wright, C., & Nyberg, D. (2017). An inconvenient truth: How organizations translate climate change into business as usual. *Academy of Management Journal*, 60(5), 1633–1661.
- Wu, S. J., Melnyk, S. A., & Flynn, B. B. (2010). Operational capabilities: The secret ingredient. *Decision Sciences*, 41(4), 721–754.
- Yi, C. Y., Ngai, E. W. T., & Moon, K. L. (2011). Supply chain flexibility in an uncertain environment: Exploratory findings from five case studies. *Supply Chain Management: An International Journal*, 16(4), 271–283.
- Yin, R. K. (2017). *Case Study Research: Design and Methods*. Sage Publications Inc.
- Yin, R. K. (2003). *Case study research: Design and methods, Applied social research methods series*. Thousand Oaks, CA: Sage Publications Inc.
- Yolles, M. (2009). Competitive advantage and its conceptual development: An exploration. *Business Information Review*, 26(2), 93–111.
- Yuan, H., & Wang, J. (2014). A system dynamics model for determining the waste disposal charging fee in construction. *European Journal of Operational Research*, 237(3), 988–996.
- Zangiski, M. A. D. S. G., de Lima, E. P., & da Costa, S. E. G. (2013). Organizational competence building and development: Contributions to operations management. *International Journal of Production Economics*, 144(1), 76–89.
- Zhu, Q., Sarkis, J., & Geng, Y. (2005). Green supply chain management in China: Pressures, practices and performance. *International Journal of Operations & Production Management*, 25(5), 449–468.

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