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**Embedding Sustainability into Supply Chain Management: A
New Zealand Perspective**

A thesis presented in partial fulfilment of the requirement for the degree of

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Embedding Sustainability into Supply Chain Management: A New Zealand Perspective

Abstract

Sustainable supply chain management (SSCM) refers to the integration of social, environmental and economic practices into supply chain management (SCM). Despite its increasing prominence both in academia and practice, there is a paucity of empirical research on SSCM. In particular, SSCM has not been adequately explored in New Zealand. To address this knowledge gap, this study empirically investigates why and how companies are integrating sustainability practices in their SCM. The study is positioned within an interpretive paradigm using a qualitative case study design, primarily drawing on the interview data from 23 New Zealand-based companies.

This thesis comprises three empirical chapters. The first chapter examines the factors that motivate and inhibit companies to adopt SSCM strategy. The findings indicate that financial and operational efficiency, reputation/risk management, customer pressure and top management support are prime motivators for companies to embrace SSCM strategy. Conversely, economic difficulties, strategic/structural constraints, suppliers' related issues, and inadequate customer demand are key obstacles encountered by companies in the successful implementation of SSCM strategy.

The second chapter explores how companies govern their SCM activities with the aim of improving SSCM performance. The findings suggest that a company's choice of an appropriate mechanism is determined by context-dependent factors such as perceived level of risk with suppliers, regulatory regimes and cultural differences. Based on the empirical findings, this chapter proposes a sustainable supply chain governance (SSCG)

model that classifies companies' SSCM progression into five stages based on two dimensions – corporate pro-sustainability orientation and SSCM maturity.

The third chapter investigates how companies manage their green supply chain management (GSCM) issues. The findings indicate that the current focus of companies is on developing internal environmental performance that relates to their mid-stream SCM practices. At the external (upstream and downstream) SCM level, the implementation of environmental practices is relatively limited, and few companies are actively collaborating with supply chain partners in terms of developing their SSCM performance.

Overall, the empirical findings of this study reveal that SSCM is relatively new but is evolving rapidly in New Zealand. This study contributes to theory by offering new insights regarding the integration of sustainability into SCM, suggesting that diligent and prudent management of SSCM can possibly lead to achieving competitive advantage¹. In addition, this thesis explicates an integrative SSCM framework that provides new insights linking sustainability and SCM disciplines. Hence, this study has several implications for practitioners to adopt SSCM practices. First, businesses will learn (and benefit from) how to integrate different aspects of SSCM strategy into their overall business model, enabling them to reduce their business risk. Second, this study enables managerial understanding as to how their businesses can progress through the different stages of SSCM integration. The main limitation of this study is that the findings cannot be generalized to any specific industry or larger population. Future research should therefore focus on an industry-specific exploration of SSCM strategies, and also test the study's findings in a large-scale survey.

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Related Publications

Journal Articles and Book Chapters

- 1- Eweje, G & Sajjad, A (2015). Corporate greening – A conceptual analysis. *Annual Book 2015 Sustainability and Strategy*. Japan Forum of Business and Society, 95–117.
- 2- Sajjad, A; Eweje, G & Tappin, D (2015). Sustainable supply chain management: Motivators and barriers. *Business Strategy and the Environment*, 27(4), 643–655.
- 3- Sajjad, A & Eweje, G (2014). Corporate social responsibility in Pakistan: Current trends and future directions. In G. Eweje (Ed.), *Corporate social responsibility: Emerging trends in developing economies* (pp. 163–190). Emerald Publishing Group.
- 4- Sajjad, A & Eweje, G (2013). Sustainable supply chain management: A conceptual framework. *Meiji Business Review*, 60(4), 53–74.

Conference Presentations and Proceedings

- 1- Sajjad, A (2015, August). *Embedding sustainability into supply chain management: A New Zealand perspective*. Paper presented at the Massey Business School PhD Symposium, Palmerston North, New Zealand.
- 2- Sajjad, A & Eweje, G (2014, December). *Motivators and barriers for sustainable supply chain management: A New Zealand Perspective*. Paper presented at the 28th Australian and New Zealand Academy of Management (ANZAM), Sydney, Australia: University of Technology, Sydney.

- 3- Sajjad, A (2014, November). *Sustainable and green supply chain practices: A case of New Zealand business sector*. Paper presented at the Massey Business School PhD Symposium, Auckland, New Zealand.
- 4- Sajjad, A & Eweje, G (2014, August). *Motivators and barriers to sustainable supply chain management: Empirical evidence from New Zealand*. Paper presented at the First Annual Conference of the Global Corporate Governance Institute (GCGI), London, UK: University of Surrey.
- 5- Sajjad, A (2013, November). *Trends in sustainable supply chain management: A New Zealand perspective*. Paper presented at the Sustainability Conference 2013, Auckland, New Zealand: Massey University.
- 6- Sajjad, A (2013, November). *Embedding sustainability into supply chain management: A New Zealand perspective*. Paper presented at the PhD colloquium, sustainability conference 2013, Auckland, New Zealand: Massey University.
- 7- Sajjad, A (2011, December). *Sustainable supply chain management: A qualitative inquiry of socially responsible New Zealand businesses*. Paper presented at the ANZAM Doctoral Workshop, Wellington, New Zealand.
- 8- Sajjad, A (2011, October). *Integrating sustainability into supply chain management: A New Zealand perspective*. Paper presented at the 15th Annual Waikato Management School Student Research Conference, Hamilton, New Zealand.

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CHAPTER 1

Introduction

This study explores why and how companies implement sustainability practices into their supply chain management (SCM) operations, by drawing on interview data from senior managers of New Zealand-based companies. In particular, those companies included in the study are known for their sustainability commitment, owing to their membership in international and national sustainability platforms such as the sustainable business council (SBC), New Zealand² and the sustainable business network (SBN), New Zealand³.

This chapter introduces the research topic and its overall relevance to existing theory and practice. The first section of this chapter provides the background of the study. Then, in the second section the justification for the study including the research gaps in the literature are presented. The third section outlines the research objective, questions and goals of this study. This is followed by an overview of the research paradigm and methodological approach adopted in order to perform this study. In the final section, the significance of the study, key working terms and the structure of the thesis are presented.

1.1 Background of the Study

The concept of sustainability has garnered considerable attention, from within both the corporate world and academic community. It is concerned with the incorporation of economic, social and environmental concerns into business strategy with the goal of achieving improved stakeholder value and competitive advantage for a company in the

marketplace. In this thesis, however, the term sustainability is conceived as a tridimensional construct (also known as triple bottom line) involving simultaneous organizational progress towards achieving economic prosperity, social equity, and environmental responsibility. In particular, companies that practice sustainability tend to balance, accomplish, and enhance their financial and societal obligations both in the short-term and in the long-term (Dyllick & Muff, 2015; Slawinski & Bansal, 2015; Montiel & Delgado-Ceballos, 2014). According to the United States Environmental Protection Agency (2011), “sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and environmental and other requirements of present and future generations”. (p.3)

Eweje (2014, p.4) states that, “the growing international and domestic interest shown on corporate socially responsibility (CSR) and sustainability stems largely from the concerns held by many in every society about the real and perceived effects of rapid globalization and development issues”. It has been argued that social and environmental costs of industrial development have been greatly exacerbated over the last few decades (Daly, 1996; Najam, Runnalls, & Halle, 2007). It is also evident today that many global societies are grappling with undesirable social and environmental issues as a result of rampant economic globalization (Cavanagh & Mander, 2004). Thus, there is a growing acceptance by scholars, practitioners, the general public, non-governmental organizations (NGOs) and governments that globalization must be pursued in a way that is sustainable and viable for future generations (Roper, 2012).

Against this background, companies are typically held responsible for generating much social and environmental harm to society (Roper, 2012). Companies are also perceived as key actors facilitating quality of life, and as engines of economic growth and wellbeing in society (Koplin, Seuring, & Mesterharm, 2007). As such, they are expected by society to take essential measures to prevent or at least mitigate adverse environmental and social impacts. Hence, companies are under increased stakeholder scrutiny to transform business behaviours and align their actions with the principles of sustainable development (Koplin et al., 2007). For example, civil society organizations, investors, governments, customers and the general public are constantly exerting pressures on companies to model themselves as responsible corporate citizens (Ditlev-Simonsen & Midttun, 2011; Sarkis, Gonzalez-Torre, & Adenso-Diaz, 2010). This indicates that there are continuous calls for corporations to demonstrate greater amounts of accountability and responsibility while performing their business affairs. In response to this continued stakeholders' pressure, many companies are embracing sustainability practices in business operations. Their central purpose may vary, however; as some companies implement sustainability strategy because they seek societal legitimization or to maintain licence to operate in their respective communities (Crespin-Mazet & Dontenwill, 2012), while others promote proactive sustainability practices to gain competitive advantage in the fierce and uncertain business environment (Closs, Speier, & Meacham, 2011).

It is often argued today that a company is only as sustainable as its supply chain. Many scholars emphasize that the corporate focus has shifted from competition between companies to competition between supply chains (e.g., Andersen & Skjoett-Larsen, 2009; Beske, Koplin, & Seuring, 2008). It is further argued that “enterprise value chains

must develop and support a broader sustainability perspective to ensure that its consumers, business, supply chain, community and environmental relationships and interactions remain viable” (Closs et al., 2011, p. 101).

The term SCM relates to “the coordination of activities, within and between vertically linked firms, for the purpose of serving end customers at a profit” (Larson & Rogers, 1998, p. 2). SCM is also viewed as a prerequisite for realizing competitive advantage, operational performance and profitability in the marketplace (Li, Ragu-Nathan, Ragu-Nathan, & Subba Rao, 2006; Tan, Lyman, & Wisner, 2002; Trent, 2004). However, the traditional focus of SCM has been on improving efficiency and reducing costs, as well as attaining flexibility, on-time customer delivery and value-added customer services (Caniëls, Gehrsitz, & Semeijn, 2013; Centinkaya, 2011; Closs et al., 2011; Vachon & Klassen, 2006a).

Therefore, in pursuit of low cost production and profitability, a majority of multinational corporations (MNCs) have outsourced their non-core business activities overseas in developing and emerging economies. However, emergent global sourcing and production trends have numerous environmental and social implications. Many of the most pressing sustainability problems of a company relate to its supply chain activities. First, from the perspective of natural environment and ecology, the sourcing of materials or products from geographically dispersed regions of the world may increase a company’s overall environmental footprint by using long transportation routes (e.g., Chaabane, Ramudhin, & Paquet, 2012; Christopher, Mena, Khan, & Yurt, 2011; Specht et al., 2014). For instance, Brickman and Ungerman (2008, p. 1) in their recent study, estimated that about 40 to 60 percent of the carbon footprint for a manufacturing

company resides in its upstream supply chain (e.g., raw material sourcing, packaging, transportation), while for a retail company the figure is around 80 percent. Second, from the social perspective there is ample evidence for the presence of human rights violation at the offshore suppliers' factories of some well-known MNCs (Altuntas, 2014; Chhabara, 2010; Koplín et al., 2007).

In this regard, several renowned international brands and high profile MNCs in media and other forums have been recently criticized or even boycotted by activists, NGOs, consumers and the general public for showing lack of social or environmental responsibility in supply chain operations (Chkanikova & Mont, 2015; Leadbitter & Benguerel, 2014; Plambeck, Lee, & Yatsko, 2012). For example, accusations have been made against companies like Nestlé, Tesco, H&M, Adidas, Gap, British Home Stores (BHS), Mattel, Apple, Nike, Walmart, British Petroleum (BP), and many more for their deficiency in managing social or environmental supply chain issues (e.g., Chhabara, 2010; Chkanikova & Mont, 2015; Foley, 2012; Frost & Burnett, 2007; Gosden, 2013; Gualandris, Golini, & Kalchschmidt, 2014; Plambeck et al., 2012; Sancha, Wong, & Thomsen, 2014; Wolf, 2014; Zorzini, Hendry, Huq, & Stevenson, 2015). Altuntas (2014, p.93) asserted that “well-known global brands have started to be claimed for irresponsible operations for their offshore suppliers so expanding the responsible action to be whole supply chain became a necessity”.

Thus, it has been argued that companies need to proactively address social and environmental concerns both at the intra-organizational (internal sustainability management) and inter-organizational supply chain levels (external upstream and downstream sustainability management) (De Brito, Carbone, & Blanquart, 2008;

Schnittfeld & Busch, 2015). In this respect, the notion of sustainable supply chain management (SSCM) is proposed, which refers to the integration of social, environmental and economic principles into SCM (Altuntas, 2014). It is a fairly new concept in business practice and scholarly literature (Altuntas, 2014).

An increased interest in SSCM is driven mainly by a company's desire to reduce potential reputational risks and vulnerability (Buddress, 2013; Christopher et al., 2011; Hofmann, Busse, Bode, & Henke, 2014; Roehrich, Grosvold, & Hojmosse, 2014; Spekman & Davis, 2004), shielding against stakeholders' campaigning (Hassini, Surti, & Searcy, 2012; Plambeck et al., 2012), as well as developing long-term business value and competitive advantage (Dauvergne & Lister, 2013; Gualandris et al., 2014). Proactive companies do not view SSCM as a non-value adding business activity, but rather perceive it as a critical factor for enhancing long-term value for stakeholders (Closs et al., 2011; Wolf, 2011) and license to operate in the 21st century (Carter & Easton, 2011). As Pagell and Shevchenko stated (2014, p. 45); "most supply chains in existence today will not survive unless they change practices and business models to address their negative social and environmental impacts".

SSCM is rapidly evolving in managerial practice and academic domains (Hassini et al., 2012), but there remains a lack of adequate empirical research that guides practice and contributes to theory development (Ashby, Leat, & Hudson-Smith, 2012; Carter & Easton, 2011; Carter & Rogers, 2008; Morali & Searcy, 2013). The review of literature indicates there are many areas where SSCM research is lacking. First, there is relatively little empirical research in the existing literature, which explores the factors that motivate or inhibit companies to implement SSCM (Caniato, Caridi, Crippa, & Moretto,

2012; Mont & Leire, 2009; Preuss & Walker, 2011; Walker, Di Sisto, & McBain, 2008; Walker & Jones, 2012). In addition, this stream of research is hardly explored in New Zealand from the SSCM perspective.

Second, there is also a paucity of empirical research that examines the governance mechanisms of social and environmental issues in SCM (Boström, Jönsson, Lockie, Mol, & Oosterveer, 2014; Bush, Oosterveer, Bailey, & Mol, 2014; Gimenez & Sierra, 2013; Marco & Paolo, 2014; Soundararajan & Brown, 2014). Third, although the literature indicates that the exploration of environmental issues is better represented, in New Zealand the concept of green supply chain management (GSCM) is poorly explored and it is little known how companies manage their GSCM performance (e.g., Frederick & Elting, 2013).

To sum up, the above discussion suggests that SSCM has become a critical concern for companies. There is a general scarcity of empirical research that has examined SSCM, and this topic has been insufficiently explored in New Zealand. The purpose of this study is to fill these gaps in the current body of knowledge and contribute to SSCM literature by investigating why and how companies are integrating sustainability practices into SCM.

1.2 Justification for the Study

The significance of research into the SSCM discipline should be evident from the above exposition. In the previous section, the background of the topic is presented. However, the goal of this section is to provide the rationale for this study by presenting a summary of knowledge gaps in the literature.

Despite an increasing interest in SSCM, there is relatively little academic and managerial understanding of why and how companies integrate sustainability practices into SCM operations. Recent research has explored a variety of topics and issues related to SSCM such as GSCM (Chiarini, 2014; Coyle, Thomchick, & Ruamsook, 2015; Zhu, Qu, Geng, & Fujita, 2015), socially or ethically responsible sourcing (Kelly & Bhutta, 2010; Zorzini et al., 2015), and sustainable supply chain governance (Boström et al., 2014; Bush et al., 2014; Gimenez & Sierra, 2013; Marco & Paolo, 2014; Vermeulen, 2013). However, most previous studies have examined SSCM in a fragmented fashion (Carter & Easton, 2011; Carter & Rogers, 2008; Wolf, 2011) or focused on individual sustainability and SCM dimensions (Winter & Knemeyer, 2013). Accordingly, there remains a significant need to examine SSCM in an integrated way and develop a coherent framework or theory, which is thoroughly grounded by empirical evidence (Ageron, Gunasekaran, & Spalanzani, 2011; Ashby et al., 2012; Carter & Easton, 2011; Carter & Rogers, 2008; Halldorsson, Kotzab, & Skjott-Larsen, 2009; Morali & Searcy, 2013; Wolf, 2011). In addition, the main thrust of previous research was on exploring the environmental dimension of sustainability in SCM, while research on social sustainability is deficient within the SCM context (Ashby et al., 2012; Klassen & Vereecke, 2012; Leire & Mont, 2010; Meehan & Bryde, 2010; Morali & Searcy, 2013; Seuring & Muller, 2008).

Some scholars have also argued that there is a clear opportunity for future inquiries to understand the role of contingencies, such as industry factors, in order to create a truly sustainable supply chain (e.g., Pagell & Wu, 2009). On the other hand, Kovacs (2008) argues for understanding environmental and social responsibility beyond the intra-

organizational operations of a company. This requires a clear emphasis on the need to investigate sustainability issues at inter-organizational (external) level, covering both upstream and downstream supply chain activities. There are three main areas where SSCM research is lacking; these are expounded in the following discussion.

First, the extant literature recognizes that past studies have explored motivators and barriers to sustainability from a general perspective, and the focus has been limited largely to internal business operations. However, relatively few empirical studies have specifically investigated the factors that motivate or inhibit companies to implement SSCM (e.g., Al Zaabi, Al Dhaheri, & Diabat, 2013; Caniato et al., 2012; Chkanikova & Lehner, 2014; Chkanikova & Mont, 2015; Mathiyazhagan, Govindan, & Noorul Haq, 2014; Preuss & Walker, 2011; Walker & Jones, 2012). In addition, there is a paucity of empirical studies that have investigated the motivators and barriers to SSCM implementation in New Zealand. Thus, in the present study, an effort has been made to understand the motivators and barriers to SSCM implementation both at the intra-organizational level and the inter-organizational level. Furthermore, this study aims to identify context-dependent factors that influence companies' proclivity to embrace or hinder them from implementing SSCM. This has been largely bypassed in previous SSCM research.

The second stream of research has examined the role of voluntary sustainable supply chain governance (SSCG) mechanisms in relation to a company's upstream SSCM performance. However, several key aspects – including the significance of governance mechanisms (e.g., suppliers' codes of conduct and certification schemes), and under what conditions these SSCG tools can deliver suitable performance outcomes – need

further investigation. The current knowledge regarding how these SSCG mechanisms should be implemented within a company's SCM and the availability of relevant frameworks is also scarce (e.g., Boström et al., 2014; Bush et al., 2014; Marco & Paolo, 2014; Soundararajan & Brown, 2014). More specifically, there is a dearth of empirical research that has explored SSCG mechanisms in the New Zealand business context. There is an increasing need to develop a profound understanding of SSCG mechanisms given their pivotal role in improving upstream SSCM performance (Gimenez & Sierra, 2013).

The third stream SSCM research has examined the environmental issues in SCM. It is reported in the literature that environmental aspects of SCM are examined better in previous literature than are social aspects (Ashby et al., 2012; Seuring & Muller, 2008). However, empirical studies in the New Zealand business context have largely bypassed the exploration of environmental issues in SCM. Accordingly, this study aims to fill this gap by examining the GSCM strategy of New Zealand-based companies.

1.3 Research Objective, Goals and Questions

The primary purpose of this study is to examine why and how companies are integrating sustainability practices in SCM operations. As explained above, SSCM is a relatively new field of research inquiry that is fragmented and overly theoretical, with few exceptions, where scholars have attempted to thoroughly integrate sustainability and SCM disciplines. At the global level few studies have empirically investigated SSCM, and there is a significant shortage of SSCM empirical research in New Zealand. This study is timely, given the increasing interest of scholars and practitioners in the SSCM discipline, and its relevance to modern companies in terms of accomplishing

competitive advantage and improved performance. To achieve the objective of this study six goals have been established.

The first goal of the study is to scrutinize the current state of SSCM research in the literature and identify the knowledge gaps. The second goal relates to the analysis of factors that motivate or inhibit companies to implement SSCM. The third goal of this study is concerned with investigating voluntary SSCG mechanisms used by companies to enhance their SSCM performance within different business settings.

The fourth goal deals with the exploration of how companies are managing environmental issues in SCM. The fifth goal focuses on investigating the relevance of contingency theory, stakeholder theory and transaction costs economics (TCE) theory in the implementation of SSCM. The last goal of this study is to integrate the empirical findings and propose an SSCM framework. A summary of these goals and where they are addressed in the thesis is presented below in table 1.1.

Goals	Chapters
To identify the knowledge gaps within SSCM literature	Chapter 2: Literature review
To examine the motivators and barriers to SSCM implementation	Chapter 4: SSCM – motivators and barriers
To investigate how companies are governing supply chain operations to enhance their SSCM performance	Chapter 5: Sustainable supply chain governance (SSCG)
To explore how companies are managing environmental issues in their supply chains and developing their SSCM performance	Chapter 6: Green supply chain management (GSCM)

To examine the context-dependent factors that influence the adoption of SSCM	Chapter 4: SSCM – motivators and barriers
To investigate the role of stakeholder theory in SSCM implementation	Chapter 5: Sustainable supply chain governance (SSCG)
To identify the relevance of TCE theory in SSCM adoption	Chapter 6: Green supply chain management (GSCM)
To develop an integrative SSCM framework	Chapter 7: Discussion

Table 1.1: The key goals of the study

Guided by the review of literature in chapter 2 of this thesis, the following research questions have been developed. These are linked to the research goals and primary objective of this thesis:

- What factors motivate companies to implement SSCM?
- What barriers do companies encounter while embracing SSCM?
- How do companies govern their SCM operations to achieve SSCM performance?
- How do companies manage environmental issues in SCM?

1.4 Research Paradigm and Methodology

This study is positioned within an interpretive research paradigm that follows an empathetic approach and takes a subjective view of social reality as experienced by social actors (Bryman & Bell, 2007; Collis & Hussey, 2014). Interpretivism suggests that social science researchers seek to interpret and understand a social reality in its natural setting (Bryman & Bell, 2007; Neuman, 2006). An interpretive paradigm is a suitable research philosophy for this study because the understanding of SSCM involves

the exploration and interpretation of subjective managerial perceptions of reality. Also, this research philosophy aligns with the research objective of this study that examines why and how companies integrate sustainability practices in SCM.

This study also employs a qualitative strategy and inductive logic (from empirical reality/findings to a new theory development or expansion of existing conceptual models) to research, which closely relates to an interpretive research paradigm (Bryman & Bell, 2007; Cavana, Delahaye, & Sekeran, 2001). Qualitative strategy involves a naturalistic perspective that supports the view that reality is socially constructed, and to understand reality, one needs to explore how social meaning and experiences are created in its natural setting (Denzin & Lincoln, 2005). This strategy corroborates the study's objective that seeks to examine companies' SSCM in a naturalistic setting where managers are asked to reflect upon questions such as: how do they view SSCM issues in their companies? What strategy are they using to manage SSCM issues? And how effective are these strategies to overcome SSCM risks and achieve business competitiveness?

Building on the qualitative research tradition, this study draws on an exploratory case study design for data collection and data analysis (Collis & Hussey, 2014). Twenty-three cases were purposefully selected using a multi-industry case study approach. Only those companies known for sustainability commitment were selected for data collection. A sample of 23 New Zealand-based companies was selected and a total of 29 semi-structured interviews conducted with senior managers responsible for managing their company's sustainability and SCM-related responsibilities. Secondary data sources such as documentary data, including companies' sustainability reports, were triangulated

with interview data to enhance the rigor and quality of research (Farquhar, 2012; Yin, 2014). The data were then analysed at two levels, including with-case analysis and cross-case analysis (Eisenhardt, 1989; Miles, Huberman, & Saldaña, 2013); the key themes of cross-case analysis are discussed in detail in chapters 4, 5 and 6. This is followed by a discussion of the research quality criteria used to enhance the validity and reliability, as well as the ethical considerations, espoused in this study.

1.5 The Significance of the Study

Over recent years there has been increasing practitioner and scholarly interest in SSCM. Several scholars have argued that the current business environment demands that companies integrate sustainability beyond their intra-organizational operations (Andersen & Skjoett-Larsen, 2009; Seuring & Gold, 2013). This indicates that companies are increasingly held responsible and accountable for the management of inter-organizational issues including the sustainability performance of their suppliers (Kovacs, 2008; Large & Thomsen, 2011). In spite of the growing global recognition and implications of SSCM, the empirical research is relatively deficient. This study aims to fill the gap in the scholarly literature by providing empirical evidence using data from New Zealand companies. The significance of the present study can be summarized in the following ways.

First, this study attempts to contribute to SSCM literature by investigating the factors that motivate and inhibit companies to adopt SSCM. The findings indicate that companies are experiencing more motivators than barriers to SSCM implementation, which is an encouraging in a way that presumes that in the future more companies will embrace SSCM practices in their intra- and inter-organizational SCM operations.

Furthermore, instrumental motivators, such as cost reductions, operational efficiency, corporate reputation, customer pressures and risk management, are revealed as prime factors that propel companies to adopt SSCM. Conversely, normative motivators, including top management support and managers' sustainability values, also influence implementation of SSCM. It is argued in this thesis that normative and instrumental SSCM motivators should not be pigeonholed as inconsistent drivers but rather viewed from a reconciliation perspective. This indicates that both perspectives substantiate each other for enhancing SSCM performance.

The findings also reveal that companies have experienced several internal and external barriers that prevent them from embracing SSCM. External barriers, including supplier-related issues and lack of customer demand, seem to be more evident than internal barriers such as cost concerns and strategic/structural constraints. This is an encouraging sign because companies may possibly overcome these barriers rather quickly compared to external ones where they are required to collaborate with a number of stakeholders to bring positive change in sustainability perceptions. In addition, the findings provide evidence that motivators and barriers to SSCM implementation are determined by context-dependent factors, such as industry type, managerial perception of sustainability risk, stakeholder and public pressure and incentive and reward systems. Thus, it is hoped these findings may improve managerial and scholarly understanding of motivators and barriers to SSCM implementation.

Second, the review of literature indicates relatively little is known about how companies employ voluntary SSCG mechanisms to improve their SSCM performance. Also, there is a dearth of frameworks in the extant literature that expound SSCG. In this regard, the

present findings suggest that companies are using two main types of SSCG mechanisms but their implementation is determined by context-dependent factors. It is reported in this thesis that there is ‘no one best way’ by which a company governs its SCM activities. However, the application of an appropriate SSCG mechanism depends on matching a company’s requirements with its business environments. The findings describe a detailed sustainable procurement process by which companies manage their SSCM strategy. In addition, an SSCG model is proposed that classifies companies’ supply chain governance engagement into five distant stages based on two dimensions – SSCM maturity and corporate pro-sustainability orientation.

Third, despite the fact that internationally New Zealand is perceived as a ‘clean and green’ country (Collins, Roper, & Lawrence, 2010) – also supported by its ‘100 percent pure New Zealand’ branding campaign – there is relatively limited empirical evidence on how the New Zealand business sector is contributing to this agenda and managing its GSCM issues. Interestingly, New Zealand’s Ministry for the Environment has estimated that this ‘clean and green’ brand is worth billions of New Zealand dollars (Ministry for the Environment, 2001). Accordingly, New Zealand’s corporate sector has a significant role in the sustenance and development of this intangible asset (i.e. 100% pure New Zealand brand). This study contributes to sustainability research in New Zealand from a SCM perspective and examines how companies are managing environmental issues in SCM.

The findings reveal that New Zealand companies are actively engaged in improving intra-organizational environmental performance. Companies have also implemented a range of green initiatives and practices in order to enhance GSCM performance in their

internal operations. However, it seems that such dedication is lacking in terms of enhancing companies' inter-organizational GSCM performance. In fact, very few companies are actively collaborating with their supply chain network partners to improve GSCM performance. Furthermore, it appears from the findings that companies which are proactive in engaging with supply chain partners are accomplishing GSCM performance both at intra-organizational and inter-organizational SCM levels.

1.6 Working Terms

This section outlines frequently used working terms in this study to ensure consistency, clarification and shared meaning of these terms.

Sustainability

Sustainability is a complex construct. It has been defined and interpreted in a number of ways in the literature. It is conceived as a corporate guiding model (Steurer, Langer, Konrad, & Martinuzzi, 2005) or an umbrella concept rooted in a wider concept of sustainable development (Searcy & Buslovich, 2014), which embodies a variety of related initiatives, practices or strategies. Scholars have studied the notion of sustainability using various titles or terminologies such as corporate sustainability (Dyllick & Hockerts, 2002; Steurer et al., 2005), business sustainability (Bansal & DesJardine, 2014), triple bottom line (TBL) (Elkington, 1998), triple Ps – planet, people and profits (Closs et al., 2011; Romijn & Caniëls, 2011), and CSR (Brammer, Jackson, & Matten, 2012). However, it is important to stress that these terminologies are used inconsistently in the literature because of the highly contextual nature of sustainability practices (Searcy & Buslovich, 2014). Although some authors make distinctions between some of these concepts (e.g., Bansal & DesJardine, 2014), essentially CSR and

sustainability initiatives are closely associated with each other (Ahi & Searcy, 2013) and are often considered synonyms in the business context (Van Marrewijk, 2003). Thus, as a whole these constructs have practically analogous meanings and applications, which relate to the integration of economic, social, cultural and environmental concerns into business strategy with the aim of enhancing both short-term and long-term stakeholder value.

Ahi and Searcy (2013) identified seven characteristics of the sustainability concept used in the literature: (1) economic focus, (2) environmental focus, (3) social focus, (4) stakeholder focus, (5) volunteer focus, (6) resilience focus and (7) long-term focus. However, there is no single definition of sustainability that encapsulates all these characteristics, and the scope of the definitions varies depending on the scholars' philosophical judgements and the practical domain in which the concept of sustainability is employed. In this study, sustainability is conceived as a holistic concept, which virtually equates sustainability, CSR, and TBL as parallel concepts depicting relatively similar meanings, and the term 'sustainability' is used here to maintain consistency. Furthermore, this thesis follows the definition of sustainability proposed by Slawinski and Bansal (2010, p.1), as "the ability of firms to respond to short-term financial, social and environmental demands, without compromising their long-term financial, social and environmental performance".

This definition acknowledges the integrated nature of sustainability, embracing the idea of combined organizational improvements in economic, social and environmental aspects of business in both the long-term and short-term with the aim of satisfying stakeholder needs.

Supply Chain Management

The concept of SCM was first proposed by Oliver and Webber in the early 1980s (Frankel, Bolumole, Eltantawy, Paulraj, & Gundlach, 2008; Stock, Boyer, & Harmon, 2010). Initially SCM was conceptualized as a narrow concept dealing only with material flows between companies. However, over a period of time its scope and breath has broadened to include activities such as management of information flows and maintaining and establishing supply chain network relationships with the purpose of achieving value creation for customers (Stock et al., 2010). In general, however, SCM is conceived as the management of several connected but separate intra- and inter-organizational activities and processes within a company's supply chain network (Harland, 1996). These activities and processes include planning and control of materials, logistics and distribution management, purchase and manufacturing management, management of information and financial flows, as well as inventory and warehouse control (Stock et al., 2010). For the purpose of this thesis the concept of SCM is defined as:

The management of a network of relationships within a firm and between interdependent organizations and business units consisting of material suppliers, purchasing, production facilities, logistics, marketing, and related systems that facilitate the forward and reverse flow of materials, services, finances and information from the original producer to final customer with the benefits of adding value, maximizing profitability through efficiencies, and achieving customer satisfaction. (Stock & Boyer, 2009, p. 706)

This definition of SCM is adopted in this study because it is comprehensive, and clearly depicts the significance of developing relationships between supply chain partners.

Sustainable Supply Chain Management

The term SSCM refers to the integration of economic, social and environmental sustainability practices into SCM. In this thesis, the SSCM concept is defined as:

The creation of coordinated supply chains through the voluntary integration of economic, environmental, and social considerations with key inter-organizational business systems designed to efficiently and effectively manage the material, information, and capital flows associated with the procurement, production, and distribution of products or services in order to meet stakeholder requirements and improve the profitability, competitiveness, and resilience of the organization over the short- and long-term”. (Ahi & Searcy, 2013, p. 339)

This definition of SSCM is adopted in this study because it is relatively broad. This definition clearly encompasses the key characteristics of sustainability such as TBL dimensions, stakeholder management, and resilience and SCM concept.

1.7 Thesis Structure

This section presents the structure of this thesis. The thesis contains eight chapters in total. Chapter 1 presents the background of the research topic and highlights the research significance and justification for this study. The objectives, the key goals and the research questions are then outlined. The next section presents the working terms

employed in this thesis, and finally, the thesis structure is detailed. The remainder of this thesis is organized as follows.

Chapter 2 provides a review of the extant literature in the fields of sustainability, SCM and SSCM. First, this chapter provides an overview of the sustainability literature. Second, the conceptual development of the SCM concept is presented. Next, the interface between sustainability and SCM literature is critically examined in order to identify gaps in the current body of knowledge.

Chapter 3 discusses the study's theoretical framework and methodology. First, the theoretical framework of this study is presented, drawing on three perspectives – stakeholder theory, contingency theory and transaction costs economics (TCE) theory. This is followed by a discussion of the research process adopted in this study, including research paradigm, qualitative methodology and case study design. Then, the criteria for case selection, data collection methods and data analysis techniques are explained. Finally, research quality criteria and issues related to research are highlighted.

Chapter 4 examines the motivators for and barriers to SSCM strategy adoption. The findings suggested a range of motivators and barriers to SSCM implementation. However, it is argued in the chapter that the presence of these motivators and barriers to SSCM implementation is determined by context-dependent factors.

Chapter 5 examines how companies govern their supply chain operations to achieve SSCM performance. The findings revealed that companies are using various SSCG mechanisms to promote their SSCM performance. Based on the empirical findings, the

sustainable procurement process is illustrated by companies that implement SSCM. Building on the sustainable procurement process, a SSCG model is then proposed. The model classifies companies into five distant phases based on their corporate pro-sustainability orientation and SSCM maturity.

Chapter 6 investigates how companies manage environmental issues in SCM. The findings suggest that companies have implemented several environmental initiatives and strategies to enhance GSCM performance. However, the main focus of companies is on developing intra-organizational GSCM performance, as very few companies have employed environmental initiatives to enhance inter-organizational GSCM performance.

Chapter 7 assimilates the findings of chapters 5, 6 and 7. The key themes reflected in the empirical findings chapters of this study are integrated into a unified SSCM framework. This framework is discussed in view of stakeholder theory, contingency theory and TCE theory.

Chapter 8 presents the conclusions of the study. This chapter highlights the theoretical contributions and managerial implications of this study. The chapter also identifies the research limitations and directions for future study.

CHAPTER 2

Literature: Sustainable Supply Chain Management

2.1 Introduction

This chapter examines the literature on two distinct but related disciplines, sustainability and supply chain management (SCM). Independently, sustainability and SCM are relatively well-established research disciplines; however, there is a dearth of empirical research that explores the integration – sustainable supply chain management (SSCM) – between them. In particular, a review of SSCM literature revealed that scholars have examined several stand-alone topics, strategies and practices that are related to improving a company's SSCM performance. Nonetheless, it appears that currently the SSCM field is evolving rapidly but there are relatively few empirical studies that have examined SSCM holistically.

This chapter begins with an outline of the sustainability literature. First, an outline of the sustainability dimensions are presented, followed by a brief overview of the current state of sustainability research in the New Zealand business context. In the second section, an overview of SCM is presented, followed by a discussion of SCM perspectives. Next, the interface between sustainability and SCM – the SSCM concept – is explored, and the research gaps of this study are presented. Thus, the objectives of this chapter are to:

- introduce the concept of sustainability
- introduce the concept of SCM

- identify key knowledge gaps in the SSCM literature and provide justification of this study.

2.2 Sustainability

This section presents the notion of sustainability and a brief background of its conceptual development in the literature. This is followed by an overview of sustainability dimensions and their conceptual development. Finally, the concept of sustainability is explored within the New Zealand setting to demonstrate the need for sustainability research in the New Zealand business context.

Sustainability is an intricate and holistic approach that encompasses optimization of three independent but interlinked dimensions – economic development, social equity and environmental protection (e.g., Dyllick & Muff, 2015; Slawinski & Bansal, 2015; Montiel & Delgado-Ceballos, 2014); Wexler, 2009). In the business context, it is generally referred to as triple bottom line (TBL) or Triple Ps – people, planet and profit (Closs et al., 2011; Elkington, 1998). The traditional business perspective encourages companies to put an exclusive emphasis on the principle of profit maximization (Friedman, 1970). According to Friedman (1970), the ‘business of business is business’, arguing that sustainability and CSR-related matters should be managed by governments, NGOs, charities and other forms of social welfare organizations. Conversely, the sustainability paradigm is resilient and inclusive by nature because it promotes simultaneous business development in social, environmental and economic aspects (Elkington, 1998; Epstein, 2008).

According to Elkington (1998), the dimensions of sustainability do not involve a trade-off between them; rather each one reinforces the other that in turn delivers simultaneous improvements to business in economic, social and environmental performance. Interestingly, ‘culture’ is treated as a separate sustainability dimension in New Zealand, and not as part of the social sustainability dimension (Harmsworth, 2005). Thus, in the New Zealand context, sustainability is perceived as quadruple bottom line (QBL) rather than TBL (Harmsworth, 2005; New Zealand Statistics, 2002). In other parts of the world, culture is considered a part of social sustainability.

The term sustainability came into prominence during the 1980s (Lele, 1991), and is derived from a broad concept called ‘sustainable development’ that has various interpretations (Carroll & Buchholtz, 2008; Lele, 1991). Barbier (1987, p.103) stated that the aim of sustainable development is to “maximize simultaneously the biological system goals (genetic diversity, resilience, biological productivity), economic system goals (satisfaction of basic needs, enhancement of equity, increasing useful goods and services), and social system goals (cultural diversity, institutional sustainability, social justice, participation)”. The World Commission on Environment and Development (WCED) defined sustainable development as “the development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987, p. 43). This definition remains the most quoted definition for sustainable development since it was first proposed by the Brundtland Commission in 1987 in its report ‘Our Common Future’ (Ashby et al., 2012). The key principles of this definition are:

- the concept of ‘needs’, in particular the essential needs of the world’s poor, to which overriding priority should be given, [and]
 - the idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs.
- (WCED, 1987, p. 43)

However, at the outset, the concept of sustainable development remains vague to many business practitioners (Paul, 2008). The business sector was unsure as to how it may contribute to sustainable development. The confusion was predominantly associated with a broad definition of sustainable development by WECD (Mebratu, 1998). In particular, this definition did not clearly emphasize how businesses are involved in process and what precise role they need to play in order to promote the goals and principles of sustainable development.

Over the passage of time the understanding of the term ‘sustainable development’ has been improved in the business sector, and at present there is relatively better awareness as to how businesses can contribute to sustainable development. Thus, the notion of sustainability in the business context is currently conceptualized as the integration of social, environmental, economic, and cultural concerns and responsibilities into business strategy (Carter & Rogers, 2008; Eweje, 2011). Essentially, one of the primary factors that drive companies towards implementing sustainability strategy in their business operations is mounting stakeholder pressure (Closs et al., 2011; Epstein, 2008; Parmar et al., 2010). These stakeholders increasingly expect companies to be more accountable and responsible towards the needs of society, as well as to model themselves as good

corporate citizens. This logically suggests that companies should take a proactive role in contributing towards environmental stewardship and social equity.

Dyllick and Hockerts (2000) were one of the pioneers who assimilated the concept of sustainable development with stakeholder management. They transposed the idea of sustainable development into the business setting, and proposed a relatively simple but coherent conceptualization of sustainability. Accordingly, Dyllick and Hockerts (2002, p. 131) defined sustainability as “meeting the needs of a firm’s direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities etc.), without compromising its ability to meet the needs of future stakeholders as well”. This definition stresses the need for a company to show deliberation towards the interests of all relevant stakeholders while managing its economic, social and environmental performance (Elkington, 1998; Epstein, 2008). The following discussion presents a brief overview of the main pillars of sustainability.

2.2.1 Economic Aspects of Sustainability

Economic sustainability at the macro level deals with efficiently and effectively managing scarce resources to achieve economic development and macroeconomic stability (ILO, 2007). According to Kopnina and Blewitt (2015, p.13), “economic sustainability is linked to well-being in relation to financial indicators such as GDP [gross domestic product] and is characterized by underlying economic approaches to the range of social issues attempting to capture the values embedded in human and natural capital”. The GDP is a frequently used indicator for measuring economic health of a country (Mankiw, 2003). The World Bank (1997) defined GDP as the total value of production in an economy. Furthermore, the key components of macroeconomic

sustainability include: controlled inflation rates, fair and efficient markets for trade, low unemployment rates, a positive balance of trade and other conducive fiscal and monetary conditions (Buckley, Sala-Xirinachs, & Henriques, 2009; Mankiw, 2003; Sexton, 2011; Steurer et al., 2005).

Traditionally, the principal focus of national policy makers was on improving economic growth irrespective of the negative impact it has on the social and ecological systems of a country. However, Daly (1996) suggested an alternate economic perspective, referred to as “economic development” as compared to the notion of economic growth. He argued that ‘development’ and ‘growth’ are not synonymous terminologies. The notion of growth entails a quantitative increase in the physical size of economy. Conversely, the concept of development focuses on simultaneous progress in qualitative and quantitative indicators. Furthermore, Daly clarified the misconception around the inherent philosophy of sustainable development as:

Sustainable development...does not imply the end of economies – if anything, economies becomes even more important. But it is subtle and complex economies of maintenance, qualitative improvement, sharing, frugality, and adoption to natural limits. It is an economics of better, not bigger. (1996, p.167)

The term economic sustainability within a corporate context means improvement in the short-term and long-term shareholders’ value as well as the sustenance of a strong financial base for the continued survival of a company (Steurer et al., 2005). Dyllick and Hockerts (2002, p. 133) argued that “economically sustainable companies guarantee at any time cash-flow sufficient to ensure liquidity while producing a persistent above

average returns to their shareholders”. Furthermore, a company needs to maintain various forms of economic resources – tangible and intangible assets – to accomplish economic sustainability (Dyllick & Hockerts, 2002). The tangible assets include machinery, land, plant, stock, inventory and finances etc. On the other hand, the intangible assets contain a company’s reputation, innovative capability, culture and employees’ tacit knowledge and talent (Wheelen & Hunger, 2010). Interestingly, the management of intangible assets is intricately connected to social and environmental sustainability aspects, indicating the interlinked nature of sustainability dimensions. According to Carroll (1991), economic sustainability provides the foundation for a company to undertake other forms of responsibilities, including its legal, ethical and philanthropic obligations that relate to conservation of the natural environment or the social wellbeing of society.

2.2.2 Environmental Aspects of Sustainability

Environmental sustainability focuses on managing the negative environmental impacts in business operations. Kramar (2009, p. 97) defined environmental sustainability as “the protection and renewal of the biosphere for present and future generations”. According to Kopnina and Blewitt (2015), contemporary literature on environmental sustainability indicates that unrestrained industrial growth is one of the largest threats to natural environment and ecological systems. Thus, present environmental threats such as climate change, global warming, pollution, deforestation and loss of biodiversity are global problems, and stakeholders increasingly put pressure on companies to embrace environmental friendly practices to improve their environmental performance.

Companies, by integration of environmental friendly practices in their business operations, can significantly contribute in resolving mounting environmental challenges. Yet some managers still perceive that the cost of embracing sustainability practices outweighs the advantages (Bansal, 2002). According to Wilkinson, Hill, and Gollan (2001), there is a perception among some practitioners that environmental regulations are anti-business measures, which hamper a company's competitiveness and increase production costs in the short term. However, currently several proactive companies are actively involved in improving their environmental performance. These companies contemplate environmental sustainability not only as a significant criterion needed to fulfil the expectations of various stakeholder groups but also as an essential prerequisite for accomplishing sustained competitive advantage in the marketplace (Epstein, 2008; Esty & Winston, 2009).

Porter and van der Linde (1995a), suggested that a company's investments in environmental programmes simultaneously improve environmental performance and profits. They further argued:

Properly designed environmental standards can trigger innovations that lower the total cost of a product or improve its value. Such innovations allow companies to use a range of inputs more productively – from raw material to energy to labor thus offsetting the costs of improving environmental impacts and ending the stalemate. Ultimately this enhanced resource productivity makes companies more competitive, not less. (p. 120)

Consistent with the argument of Porter and van der Linde (1995a), other scholars have also proposed compelling reasons for contemporary cutting-edge companies to implement pro-environmental strategy in their operations (e.g., Hoffman, 2005). First, government regulators require companies to comply with environmental laws. Failure to observe these laws and regulations can often give a company a bad name (tainted reputation) and brings expensive legal penalties from regulators and loss of business value, which is extremely hard to recover in the short term (Berry & Rondinelli, 1998; Doppelt, 2003; Epstein, 2008; Willard, 2008). Second, environmental interest groups, investors, consumers, the media and international trading partners expect companies to have a clear environmental policy (Berry & Rondinelli, 1998). Third, pro-environmental practices often lead to competitive advantage by employing innovative production methods that provide benefits to the practicing company, including reductions in costs, energy, waste, hazardous materials, resources use, carbon dioxide (CO₂) and greenhouse gas (GHG) emissions (Hitchcock & Willard, 2006; Hoffman, 2005; Lankoski, 2006; Willard, 2008). Fourth, the improved environmental profile of a company enables it to differentiate itself from competitors, that in turn makes it easier for a company to expand its business operations into new markets (Hitchcock & Willard, 2006; Hoffman, 2005).

2.2.3 Social Aspects of Sustainability

Corporate social responsibility (CSR) epitomizes the social dimension of sustainability, and the terms ‘social sustainability’ and ‘CSR’ are often used interchangeably. According to Buckley et al. (2009, p. 135), CSR is “voluntary and varied by nature”. The World Business Council for Sustainable Development (WBCSD) (1998, p. 3) defined CSR as “the continuing commitment by business to behave ethically and

contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large”. According to Kopnina and Blewitt (2015, p. 13), “social sustainability refers to issues concerned with social equality, poverty, and problems associated with justice. Equity considerations are primary in order to have the resources to reduce poverty and increase the well-being in developing countries”. Thus, the notion of social sustainability deals with meeting a human’s cultural, emotional, physical, social needs (Kopnina & Blewitt, 2015).

Furthermore, Dyllick and Hockerts (2002) indicated that social sustainability involves the development of “social capital” that has two main dimensions – human capital and societal capital. Human capital relates to areas such as developing employee skills, supplier relations, production networks, workers’ motivation (Adler & Kwon, 2002; Habisch & Moon, 2006). The development in human capital is an important factor for achieving business competitiveness and its long-term survival. Conversely, societal capital deals with societal or communities issues such as poverty, injustice, human rights, corruption, community development, security, family-related problems, lack of education, public health, youth behavioral problems and democracy (Habisch & Moon, 2006; United Nations World Summit for Social Development, 1995). Developing societal capital promotes trust and mutual confidence between a company and its stakeholders; which in turn improves a company’s reputation among its stakeholders (Habisch & Moon, 2006).

Essentially, many scholars argued that sustainable social performance requires proactive management of social capital. Social capital can be viewed as the long-lived asset of a

company, which does not depreciate with use but rather becomes refined with more use and therefore needs to be maintained in the long run (Adler & Kwon, 2002; Habisch & Moon, 2006). Thus, the development of social capital within a company requires management to create a favorable work environment where employees refine their social skills and other competencies (Habisch & Moon, 2006). This can be accomplished by making changes such as investment in human capital that improves employees' capabilities, encouraging a collective work culture, networking opportunities for employees, access to necessary information and the acquisition of new knowledge to perform jobs more effectively and efficiently (Branco & Rodrigues, 2006; Habisch & Moon, 2006).

At the broader end of the scale, social capital also enables a business to raise education levels, eradicate under development, as well as combat poverty and other serious public problems at the societal level (European Commission, 2002; Habisch & Moon, 2006). Scholars claim that companies active in promoting socially responsibility find it easier to enter emerging global markets, attract, hire, and retain competent employees, interest customers and investors, hold good community relationships, have easier access to credit from financial institutions and acquire an enhanced reputation (Branco & Rodrigues, 2006; Buckley et al., 2009; Epstein, 2008; Hitchcock & Willard, 2006). These factors lead a company to achieve competitive advantage (Porter & Kramer, 2002; Porter & Kramer, 2006).

2.2.4 Sustainability in New Zealand

This study focuses on exploring the field of SSCM within the New Zealand business context. Therefore, it is pertinent to provide a brief but topical overview of economic,

legislative, practical and research developments around sustainability discipline in New Zealand. New Zealand is a country with a population of approximately 4.4 million (Rudzitis & Bird, 2011). New Zealand has nominal GDP of NZ\$ 199.1 billion at 2012, which is 0.27 percent of global GDP. The largest GDP contribution comes from professional services (NZ\$13.9 billion), which is followed by property, rental and hiring sectors (NZ\$13.3 billion), and agriculture, forestry and fishing sector (NZ\$13.25 billion). Its main source of earning comes from the export of agricultural produce and from the tourism sector (Ministry of Business, Innovation & Employment, 2014). New Zealand has about half-a-million enterprises as of 2015 which employ over two million employees. Nearly half of all employees were working in large enterprises at February 2015 (New Zealand Statistics, 2015). Rental, hiring, and real estate services is the leading employer which employs more than one hundred thousand employees which is followed by agriculture, forestry, and fishing sector which about 65 thousand employees. Other key sectors include professional, scientific, and technical services, construction, financial and insurance services (New Zealand Statistics, 2015). New Zealanders value their country's natural environment. In reality, a large proportion of New Zealand's population has a great passion for and affiliation with the natural environment (Rudzitis & Bird, 2011). In addition, New Zealand has branded itself as 100 percent pure (Collins et al., 2010; Rudzitis & Bird, 2011), and therefore globally there is a perception that it is a 'clean and green' country (Collins et al., 2010; Roper, 2012).

However, it is somewhat unclear as to whether or not this 'clean, green' image of New Zealand has been translated into the corporate sector (Frame, Gordon, & Whitehouse, 2003). Frame et al. (2003) claimed that the sustainability perspective has recently

received attention within New Zealand private and public policy-making spheres, but progress in sustainability has been slow in both sectors. In the public sector, the New Zealand Government committed itself to Agenda 21 for sustainable development at the United Nations Conference on Environment and Development in 1991 (Roper, 2004). The government passed the Resource Management Act (RMA) in 1991 to preserve New Zealand's clean and green environment (Brown & Stone, 2007). Nevertheless, during the 1990s sustainability was not mainstream practice in the New Zealand public sector (Roper, 2004).

According to Jones (2011), the RMA is the key pathway for safeguarding New Zealand's natural environment from potential environmental and cultural harm. It is a comprehensive policy document, which covers a wide range of environmental legislation, and it also recognizes the values and cultural norms of the indigenous Maori people. The act encourages the sustainable management of natural and physical resources of New Zealand (Ministry for the Environment, 2012b). Accordingly, the act provides a legislative foundation that sets out the parameters within which New Zealand companies should operate.

The RMA provides useful insights as to how companies need to manage environmental sustainability and the cultural heritage of the Maori community. However, the act was amended in 2004. New clauses that touch on the effects of climate change, energy efficiency and development of renewable energy have been introduced (Ministry for the Environment, 2012a). Brown and Stone (2007, p.717) suggested that “under the RMA, individuals and organizations wishing to undertake new activities or to change significantly the resource-related aspects of existing ones are required to consult with

Maori”. Accordingly, in New Zealand, companies are responsible for and obliged to consider a wider sustainability criteria (e.g., adherence to Maori culture and values) compared to other countries in the world (Brown & Stone, 2007).

Nonetheless, the New Zealand private sector was initially not very enthusiastic about embracing sustainability practices in their businesses. According to Roper (2004, p. 22), “the term ‘social sustainability’ and ‘business sustainability’ were not even publically considered prior to 1998, although the general public wanted changes in policy that would restore a balance of social and economic perspective”. Furthermore, there has been a perception among New Zealand companies that commitment to sustainability initiatives would harm their economic performance. Against this background, the business sector has encouraged the New Zealand government not to ratify the Kyoto Protocol (Roper, 2004; Roper & Cheney, 2003).

The Kyoto protocol is an international agreement adopted in Kyoto, Japan, on 11 December 1997. It was enforced on 16 February 2005 (United Nations Framework Convention on Climate Change, 2015). The purpose of the agreement was to deal with the escalating challenge of global climate change because of rampant GHG emissions by developed nations (Jones, 2011). The agreement focused on stabilizing greenhouse emissions to the level of 1990 by 2012 (Jones, 2011). The New Zealand Government was one signatory of the 187 nation states which signed the pact. Accordingly, in an attempt to reduce its GHG emissions, the New Zealand Labour-led government of Prime Minister Helen Clark introduced, in 2008, its own emissions trading scheme called the New Zealand Emissions Trading Scheme. However, the level of GHG emissions has increased by 22 percent against its benchmark 1990 level (Jones, 2011),

and in 2009 the new (National) government amended the act (Roper, 2012). A critique of the amendment bill argues that it has softened the government’s commitment towards reducing GHG emissions by providing a special status to some sectors such as the agriculture sector (Jones, 2011). According to Bullock (2012, p. 673), “the development and implementation of climate change in New Zealand has been difficult. Successive governments have succumbed to the challenges posed by New Zealand’s unusual emissions profile, strong interest lobbying groups and an uncertain international context”.

As noted above, sustainability is an evolving but trending paradigm in the New Zealand business sector. According to Roper (2012), the concept of sustainability is linked to New Zealand’s valuable national global positioning (i.e. clean and green country), and therefore this branding is of key significance to many New Zealand companies, integrating sustainability as a core business principle into their operations. In a similar vein, in a recent study, Eweje (2011, p. 125) reported that there is a sustainability uptake in the New Zealand business sector; companies are now more willing to demonstrate their commitment to a sustainability strategy and “have various projects and initiatives to support their position and commitment”. Conversely, he argued there is a lack of organized stakeholder pressure on New Zealand companies to engage in sustainability strategy.

The responsiveness and interest of New Zealand companies with regard to a sustainability strategy can be observed by the business membership of two consulting organizations – the Sustainable Business Network (SBN) and the New Zealand Business Council for Sustainable Development (NZBCSD) (Eweje, 2011). The

NZBCSD and SBN are foremost non-governmental organizations concerned with the development and promotion of sustainability practices in New Zealand (Babbington, Higgins, & Frame, 2009; Collins, Lawrence, Pavlovich, & Ryan, 2007; Roper, 2004). However, in January 2012, the NZBCSD and Business New Zealand’s Sustainable Business Forum (SBF) merged to form a new organization, the Sustainable Business Council (SBC). SBC is an industry body that “catalyzes the New Zealand business community to have a leading role in creating a sustainable future for business, society and the environment” (SBC, 2012, para.1). It focuses on building business leadership, best sustainability practices, international connectedness and partnership, mainstreaming sustainable business practice in New Zealand and policy development (SBC, 2012). On the other hand, the SBN advises and supports small and medium sized enterprises (SMEs) to achieve sustainability (Collins et al., 2007).

2.3 Supply Chain Management

This section outlines the development of the SCM concept in the literature. First, the origin and background of the term SCM is discussed. Next, a brief description of the term supply chain. Then the concept of SCM is defined, and various perspectives of SCM are discussed providing grounding to the SCM concept. Finally, the key functional areas of SCM are briefly expounded.

Oliver and Webber (1982), were pioneers in introducing the term supply chain management (SCM) (Christopher, 1992; Frankel et al., 2008). Nevertheless, Forrester (1958) formerly recognized the integrated nature of organizational relationships in a theory of distributive management, which provides an underpinning to the SCM concept (Mentzer et al., 2001). According to Forrester (1958), organizational

relationships fundamentally reflect a system dynamics which can potentially influence the performance of organization's functions. In particular, Forrester (1958, p. 52) argued that competent management practitioners who are able to understand “the interrelationships between separate company functions and between the company and its market, its industry, and the national economy” would undoubtedly have an advantage in the future.

The SCM discipline has progressed considerably since its origin in the 1980s (Stock et al., 2010). During the 1990s SCM has risen to prominence and received ample attention from scholars and practitioners alike (Frankel et al., 2008). Essentially, continuous changes in key environmental factors, such as rapid globalization, business competition, consumer expectations, government regulations, growth in technology and environmental uncertainty, have led to substantial developments in the field of SCM. These pressures compel companies to develop long-term relationships with their supply chain network partners (Mentzer et al., 2001; Coyle et al., 2008). Accordingly, some scholars have argued that the real competition is no longer between companies but rather “supply chain against supply chain” (Christopher, 1992; Stevens, 1989).

What is a Supply Chain?

In order to have an improved understanding of the SCM concept, it is useful to define the notion of supply chain. Christopher (1992, p. 15) defined a supply chain as “the network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate consumer”. Mentzer et al. (2001, p. 4) have provided a more specific definition of supply chain that involves “a set of three or more

entities (organizations or individuals) directly involved in the upstream and downstream flows of products and services, finances, and/or information from a source to a customer”. In addition, Mentzer et al. (2001) categorized supply chains into three types based on their degree of complexity (see figure 2.1):

- a direct supply chain
- an extended supply chain
- an ultimate supply chain.

As shown in figure 2.1-a, a direct supply chain depicts a minimal degree of complexity. A direct supply chain consists of a focal company and its direct suppliers and customers engaged in the upstream and downstream flows of products, services, finances and/or information. Second, an extended supply chain involves a moderate level of complexity which requires a focal company to engage in the upstream and downstream relationships with the supplier’s immediate suppliers as well as with the customer’s immediate customers, all engaged in managing products, services, finances and/or information flows (see figure 2.1-b). Third, an ultimate supply chain encompasses all upstream and downstream channel members in the exchange of information, products, services and/or information from the point of origin (ultimate supplier) to the point of consumption (ultimate customer) (see figure 2.1-c). An ultimate supply chain represents a high degree of complexity while managing supply chains (Mentzer et al., 2001). The inclusion of a financial services company, a marketing research company and a third party logistics company demonstrates the degree of complexity within and across various companies, with the objective of delivering value to all channel members, and more importantly to the ultimate customer.

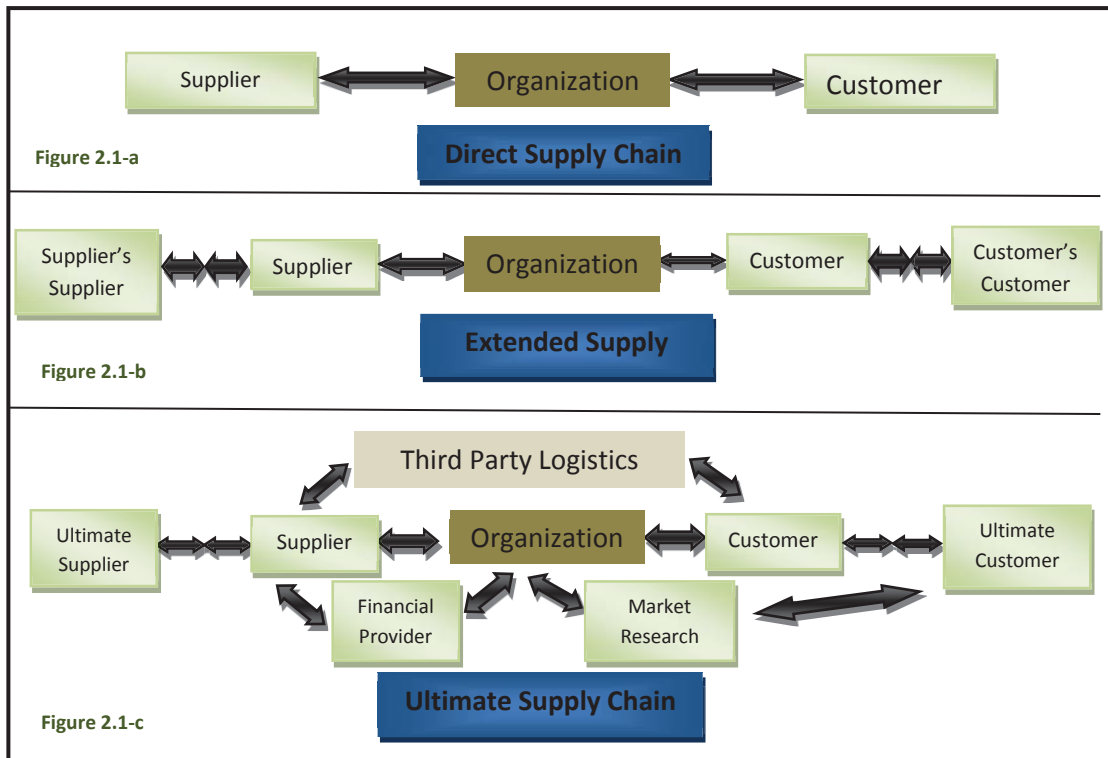


Figure 2.1: Types of channel relationships

2.3.1 Defining the SCM Concept

There is a lack of consensus among scholars and practitioners regarding the definition of SCM (Burgess, Singh, & Koroglu, 2006; Croom, Romano, & Giannakis, 2000; Gibson, Mentzer, & Cook, 2005; Mentzer et al., 2001). The SCM concept is in its early stages of development (Burgess et al., 2006; Gibson et al., 2005), but the initial advancements of the SCM concept can be largely confined to functional supply chain areas such as physical distribution and transport management (Croom et al., 2000), purchasing, logistics, information technology and marketing (Burgess et al., 2006).

Gibson et al. (2005, p. 17) noted that “new knowledge is constantly processed by those in the discipline to determine discipline definition; scope and boundaries; elements and

functions; relationships between elements and functions; relationship with other discipline; direction and evolution; and significance”. Thus, the lack of a universal definition of SCM can be attributed to its multidisciplinary origin and relatively broad scope (Croom et al., 2000). Similarly, Mentzer, Stank, and Esper (2008, p. 31) asserted that the definitional incongruity of the SCM concept is due to the fact that “SCM is not ‘owned’ by any one discipline or department, but rather is a phenomenon that touches nearly all areas of business”. According to Kathawala and Abdou (2003, p. 141), SCM “has been poorly defined and there is high degree of variability in people’s minds about what is meant”.

Burgess et al. (2006) suggested that SCM has been conceptually framed into four categories. This comprises a set of intra-organizational (internal) functions and activities (e.g., purchasing, logistics, operations management), business processes, networks of related processes, and ‘other’, which constitutes a broader level of analysis involving other disciplines such as sociology, marketing and psychology (Burgess et al., 2006; Frankel et al., 2008; Mentzer et al., 2001). However, there is an ongoing debate among scholars around which functions, organizations and processes are to be included or excluded while defining the scope and boundaries of SCM (Gibson et al., 2005; Larson, Poist, & Halldórsson, 2007). Interestingly, if SCM is viewed as an activity this would limit its scope to narrow operational functions. Conversely, if SCM is viewed from a systems perspective it would be viewed as a multidisciplinary and holistic concept encapsulating several supply chain activities and processes as well as various disciplines (Burgess et al., 2006).

A review of SCM literature suggests that inconsistencies exist in terms of defining the scope, boundaries, activities and functions that constitute SCM. However, some agreement seems to exist for SCM conceptualization (Frankel et al., 2008). The common SCM definitional themes include: integration of inter- and intra-organizational activities, the management of cross-functional business processes, collaboration of relationships among supply chain network members (e.g., Cooper, Lambert, & Pagh, 1997; Frankel et al., 2008; Harland, 1996), and the bi-directional flows of information, products and other operational activities (Cooper et al., 1997; Trent, 2004). The following discussion describes various perspectives of SCM and how it is conceptualized in the current body of knowledge.

SCM as a Management Philosophy

As a management philosophy, the SCM concept takes a system perspective that involves all supply chain channel members to develop mutual partnerships and long-term relationships (Cooper & Ellram, 1993; Lisa & Cooper, 1990; Tyndall, Gene, Gopal, Patsch, & Kamauff, 1998). Cooper and Ellram (1993, p. 13) defined SCM as “an integrative philosophy to manage the total flow of a distribution channel from the supplier to the ultimate user”. This perspective suggests that the aim of SCM is to manage the flow of goods and services in such a way that improves overall supply chain performance and customer value (Cooper et al., 1997; Mentzer et al., 2001).

However, Mentzer et al. (2001) argued that SCM as a management philosophy is congruent with ‘supply chain orientation’. They describe supply chain orientation as “the recognition by an organization of the systemic, strategic implications of the tactical activities involved in managing the various flows in a supply chain” (Mentzer et al.,

2001, p. 11). Mentzer et al. (2001) emphasized that SCM refers to the implementation of this orientation across several companies along the supply chain. Accordingly, supply chain orientation is an essential prerequisite for companies wanting to implement the SCM approach. Building on the ‘implementation of supply chain orientation’ logic, Mentzer et al. (2001) offered a relatively broad definition of SCM, which has been adopted in this study:

The systematic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole. (p. 18)

SCM as an Integrated Management Strategy

SCM has been also conceptualized as an integration of internal and external supply chain activities, processes as well as flows of information, material and products (Alfalla-Luque, Medina-Lopez, & Dey, 2013). The prior literature suggests that supply chain integration has focused on either upstream supply chain practices (e.g., Choi & Hartley, 1996; Vonderembse & Tracey, 1999) or downstream supply chain practices (Alvarado & Kotzab, 2001) in a standalone manner. According to Chen et al. (2009), the traditional SCM and logistics management research has associated SCM with intra-functional integration that deals with the collaboration of various departments within an organization’s domain.

However, modern conceptualization, such as that of Flynn et al. (2010, p. 59) described supply chain integration as “the degree to which a manufacturer strategically collaborate with its supply chain partners and collaboratively manages intra- and inter-organization processes”. Similarly, Stevens (1989) suggested that seamless supply chain integration encompasses collaboration with upstream as well as downstream partners in the chain. The goal of integrated SCM is to make supply chains more efficient through the reduction of costs, stock-outs, and lead time, and more effective by focusing on entire supply chain activities so that a company can provide improved services and products to its customers (Flynn et al., 2010; Frohlich & Westbrook, 2001), and build competitiveness in the marketplace (Gimenez & Ventura, 2003).

SCM as Management of Set of Activities

The concept of SCM is also viewed as the management of a related set of activities to implement a SCM management philosophy. According to Mentzer et al. (2001), previous SCM research has identified seven key sets of activities: integrated behaviour, mutually sharing information, mutually sharing risk and rewards, cooperation, a common goal and a focus on serving customers, integration of processes and partners to build and maintain long-term relationships. Trent (2004) has identified additional activities such as purchasing and material releasing, inbound and outbound transportation, receiving, material handling, warehousing and distribution, inventory control and management, demand and supply planning, order processing, production planning and scheduling, shipping, processing and customer service, while Stock et al. (2010) proposed that material/physical and informational flows, and networks of relationships within and across organizational boundaries, as key activities involved in SCM. This perspective gives a little indication about how SCM activities are related to

each other but it advocates that SCM refers to the management of all these activities in a coherent manner by which a company or its supply chain partners can accomplish improved performance.

Process Management Perspective of SCM

Trent (2004, p. 54) suggested SCM should be considered “as a set of interrelated processes rather than discrete, nonaligned activities”. Davenport and Short (1998, p.12) defined business process as “a set of logically related tasks performed to achieve a defined business outcome”. SCM as a process is described as “the integration of business processes from end user through original suppliers that provides product, services and information that add value for customers” (Cooper et al., 1997, p. 2). According to Trent (2004), well-defined and well-communicated SCM processes enable practitioners to evaluate SCM implementation and outcomes. Moreover, it makes it easier to perform global supply chain activities with consistency through the utilization of the best practices and knowledge that facilitate performance for supply chain members (Trent, 2004).

Network and Collaboration Perspective of SCM

Modern supply chains are complex and their management is also increasingly challenging because of increasing customer expectations and changing market dynamics (Erhun & Keskinocak, 2011). The complex and challenging business environment requires companies to establish collaborative relationships and active networking with their supply chain partners (Erhun & Keskinocak, 2011). According to Cohen and Roussel (2005, p. 139), collaboration is “the means by which companies within a supply chain work together towards mutual objectives through the sharing of ideas,

information, knowledge, risks, and reward”. This perspective holds that SCM is about “establishing networks of relationships between interrelated and interdependent organizations, as well as across business units” (Stock et al., 2010, p. 34). In line with the network view, Ellram (1991, p. 14) depicted SCM as “a network of firms interacting to deliver products or services to the end customer, linking flows from raw material supply to final delivery”.

2.3.2 Key Functional Areas of SCM Discipline

SCM is a broad field that links various disciplines such as marketing, industrial economics, production and operations management, information technology, international business and organizational management, logistics and supply management (Burgess et al., 2006). However, the following discussion focuses on two essential elements of the SCM approach: logistics management and purchase/supply management. Coyle et al. defined logistics as:

The process of anticipating customer needs and wants; acquiring the capital, material, people, technologies, and information necessary to meet those needs and wants; optimizing the goods- or service-producing network to fulfill customer request; and utilizing the network to fulfill customer request in a timely manner. (2009, p. 36)

Over the past few years, logistics costs have declined because of a significant improvement in logistics systems and technological advancements (Ballou, 2004; Coyle et al., 2009). Logistics is a collection of several functional activities such as inbound and outbound transportation management, warehouse management and material handling

(Coyle et al., 2009; CSCMP, 2011). These activities are repeated several times from the point of origin to the point of consumption – and also return for disposal/recycling, by which consumer value is added. Specifically, logistics creates value for the customer and other stakeholders by providing goods at the right time and right place (Coyle et al., 2009).

On the other hand, Lysons and Farrington (2006) define purchasing as:

The process undertaken by the organizational unit that, either as a function or as part of an integrated supply chain, is responsible for producing or assessing users to procure, in the most efficient manner, required supplies at the right time, quality, quantity and price and the management of suppliers, thereby contributing to the competitive advantage of the enterprise and the achievement of corporate strategy. (p. 8–9)

Acquisition of services is often termed ‘contracting’ (Wisner, Tan, & Leong, 2009). According to Lysons and Farrington (2006), ‘procurement’ is the appropriate term to use, compared to ‘purchase’, because it includes leasing and even force or pillage of material and equipment from buyers or lending agents. Furthermore, due to the increasingly strategic role of the purchase professional in a company, Wisner et al. (2009) proposed the term ‘supply management’ for the purchasing function to include all sets of responsibilities associated with purchase. However, for the purpose of this report and for simplicity of discussion, the terms purchasing, procurement and supply management are used interchangeably.

Purchasing has also been viewed as a support function in the past with a little significance to strategic decision making (Wisner et al., 2009). However, due to increasing global competition purchasing has become an important function, playing a key role in corporate, strategic decision making that aims at achieving competitive advantage (Rajagopal & Bernard, 1993). It is estimated that manufacturing companies spend more than 50 percent of the sale on purchasing equipment and raw materials (Ballou, 2004; Wisner et al., 2009). Therefore, keeping in view its repercussions on a company's performance, scholars have emphasized an integrated purchase strategy for the accomplishment of business objectives (Lysons & Farrington, 2006).

2.4 Linking Sustainability and SCM: Literature on SSCM

This section introduces the conceptual and theoretical developments of the concept of SSCM in the literature. First, key classifications (streams) of SSCM research are highlighted. This is followed by a review of motivators and barriers for the adoption of SSCM strategy. Then, the current state of research on the two main dimensions of SSCM – SRSCM and GSCM – is presented. The conclusions are presented at the end of the chapter.

SSCM is a fairly broad concept that focuses on integrating social, environmental and economic sustainability aspects into the SCM practices of a company. According to Sroufe and Melnyk (2013, p. 7), “SSCM practices include stakeholder engagement, product/process design, life cycle assessment (LCA), materials selection and sourcing, manufacturing processes, waste, end-of-life management of products, and closed-loop systems”. In recent years, there is growing recognition that companies should extend their sustainability efforts beyond intra-organizational activities and take responsibility

for the impact of their supply chains. However, having reviewed the literature of both sustainability and SCM, it appears that sustainability and SCM are very recently being considered in an integrated manner by scholars and practitioners. One such earlier effort to link sustainability and SCM in the literature relates to the conceptual development of SSCM. In this regard, the following two SSCM definitions – by Carter and Roger (2008) and Seuring and Muller (2008) – can be viewed as a cornerstone of initial conceptualizations of SSCM.

Carter and Roger (2008, p. 368) defined SSCM as “the strategic, transparent integration and achievement of an organization’s social, environmental, and economic goals in the systemic coordination of key inter-organizational business processes for improving the long-term economic performance of the individual company and its supply chains”. This definition underlines two key aspects. First, it focuses on the TBL dimensions of sustainability. Second, it proposes the need for supply chain coordination at inter-organizational business level among various supply chain members in order to improve sustainability performance.

On the other hand, the definition by Seuring and Muller (2008) focuses on stakeholder and customer perspectives as well as on the significance of TBL dimensions. Seuring and Muller (2008, p. 1700) defined SSCM as “the management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder requirements”. However, a very recent definition, proposed by Ahi and Searcy (2013)

(see chapter 1), is holistic and relatively more comprehensive than the above definitions, and this is a key reason why this definition has been adopted for this study.

2.4.1 Classification of SSCM Research

Over the last two decades, several scholars have contributed to the current knowledge of the SSCM discipline. Nonetheless, most research on SSCM has been carried out since the mid-1990s (Seuring, 2008). Also, mainstream research on sustainability focused mainly on exploring sustainability issues at the intra-organizational level. The current focus of sustainability research has been extended to the management of inter-organizational sustainability issues, such as those related to downstream SCM issues and end-of-life management of product (Schnittfeld & Busch, 2015; Wolf, 2011). One of the reasons for this wider research focus can be attributed to increasing stakeholder pressure that requires companies to become more responsible for their entire supply chain operations rather than just their internal operations.

However, the review of SSCM literature suggests that research has inadequately integrated SSCM perspectives (Ashby et al., 2012; Brito & Lann, 2010; Carter & Rogers, 2008; Pagell & Wu, 2009; Wolf, 2011), and most SSCM research is conducted in a stand-alone manner. For instance, the environmental sustainability dimension is better represented and explored in the SSCM literature compared to the social dimension (Ashby et al., 2012; Morali & Searcy, 2013; Seuring & Muller, 2008). With some notable exceptions (e.g., Carter & Rogers, 2008; Koplin et al., 2007; Pagell & Wu, 2009; Wolf, 2011), much theoretical and empirical SSCM research has failed to examine the SSCM concept holistically. Accordingly, the field is rather fragmented, since SSCM activities, processes and strategies have been studied in an isolated fashion (Carter & Rogers, 2008; Svensson, 2007).

Furthermore, the SSCM field is a relatively new area of inquiry in academia and for business practice in New Zealand. One pioneer effort was performed by the NZBCSD which, in 2003, developed a detailed practical guide for the implementation of SSCM (NZBCSD, 2003). The guide suggested that in coming years the New Zealand business sector would lose billions of dollars per annum in international exports if it ignored sustainability concerns in SCM. However, empirical SSCM research in the New Zealand business context is relatively scant. One such study was conducted by Basnet, Childerhouse, Foulds and Martin (2006), which explored the state of the sustainable supply chain in the New Zealand business context. The study itself, however, had limitations such as limited sample size and a principal focus on the economic aspects of SCM, ignoring environmental and social dimensions. Thus, it is argued that very little is known about how New Zealand-based companies are managing their SSCM performance.

SSCM research has been conducted at different levels of specificity. These research studies can be categorized into three levels depending on their scope (see figure 2.2). The studies that fall under the first level are very specific. These studies have generally examined the relationship between a single sustainability dimension and a particular supply chain function. The common themes of such studies include: environmental purchasing (Bjorklund, 2011; Carter, Ellram, & Ready, 1998; Zsidisin & Siferd, 2001), socially responsible purchasing (Worthington, Ram, Boyal, & Shah, 2008), socially responsible sourcing (Zorzini et al., 2015), purchase social responsibility (Carter, 2005; Carter & Jennings, 2004), environmental logistics (Wai, Yuan, & Bi, 2010), sustainable purchasing and supply management (Miemczyk, Johnsen, & Macquet, 2012), sustainable supply management (Ageron et al., 2011), ethical sourcing (Blowfield, 2000;

Kelly & Bhutta, 2010; Roberts, 2003), reverse logistics and social sustainability (Sarkis, Helms, & Hervani, 2010) and logistics social responsibility (Carter & Jennings, 2002).

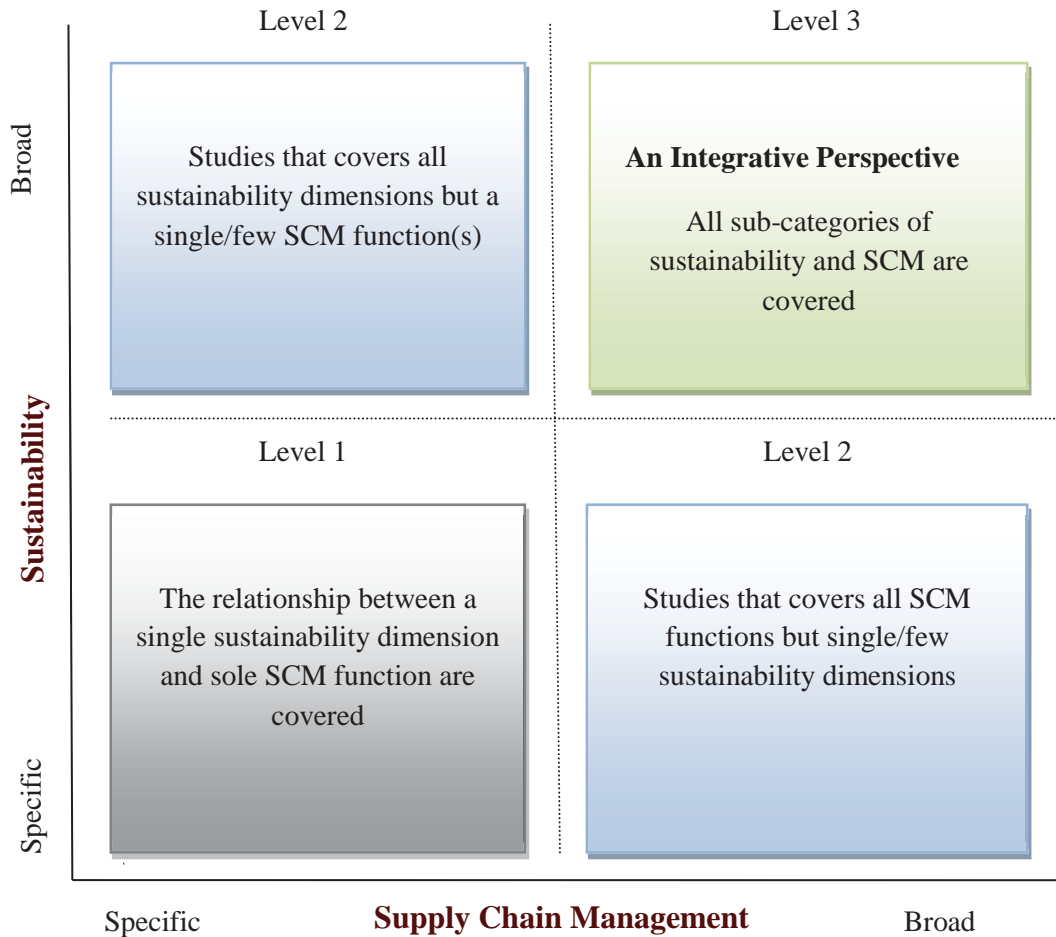


Figure 2.2: Matrix for multi-level studies conducted for SSCM

Research studies that fall under the second level present a moderate progression where either all sustainability dimensions are covered but a single SCM function is included, or vice versa. The common titles for such studies include: green supply chain (Rao & Holt, 2005b; Walton, Handfield, & Melnyk, 1998), sustainable production (Tseng, Divinagracia, & Divinagracia, 2009), sustainable procurement practices (Meehan & Bryde, 2010), GSCM (Holt & Ghobadian, 2009; Srivastava, 2007; Zhu, Sarkis, & Geng,

2005), environmental SCM (Forman & Jorgensen, 2004; Hagelaar & van der Vorst, 2001), sustainable products (Seuring, 2011), sustainable operations management (Corbett, 2009; Kleindorfer, Singhal, & Wassenhove, 2005) and sustainable supplier relationship management (Leppelt, Foerstl, Reuter, & Hartmann, 2011).

The studies that fall into a third level encapsulate an integrated SSCM perspective. These types of studies are relatively rare representing a broader SSCM perspective. Common labels for these studies include: sustainable supply chain management (Carter & Rogers, 2008; Morali & Searcy, 2013; Pagell & Wu, 2009; Seuring & Muller, 2008; Wittstruck & Teuteberg, 2011; Wolf, 2011), sustainable supply chains (Keating, Quazi, Kriz, & Coltman, 2008; Linton, Klassen, & Jayaraman, 2007) and incorporating sustainability into supply management (Koplin et al., 2007). As discussed above, the concept of SSCM is explored mainly in a fragmented fashion in the prior research; the present study takes a holistic approach giving an equal (but broad) emphasis to both sustainability and SCM fields.

2.4.2 Motivators for Implementation of SSCM Strategy

Scholars have classified SSCM motivators into internal versus external motivators (e.g., Walker et al., 2008). Internal motivators are further classified into two sub-categories: instrumental and normative motivators. First, the instrumental perspective holds that that the adoption of sustainability strategy leads to the enhancement of corporate image and reputation among stakeholders and the reduction of operational costs and efficiency, which in turn contributes to its economic sustainability (Carroll & Shabana, 2010; Donaldson & Preston, 1995).

Conversely, the normative view holds that a company adopts a sustainability strategy because of moral or ethical values of organizational members (Donaldson & Preston, 1995; Ramus & Oppegaard, 2006). This orientation (normative rationality) encourages a company to fulfil its ethical and moral obligations towards its stakeholders and act as a responsible corporate citizen in society (Bansal & Roth, 2000; Jenkins, 2006). Thus, driven by normative prudence, a company and its members intends ‘to do the right thing’ (Lieb & Lieb, 2010) by practising sustainability. Top management, especially, perceives itself to be a proactive contributor to societal good, including the environmental stewardship and social wellbeing of society (Giunipero, Hooker, & Denslow, 2012; Jenkins, 2006).

On the other hand, external forces may also drive companies to adopt SSCM strategy. These factors include market drivers (e.g., competition, customers and consumer demands), government (e.g., regulations and legislations) and social factors (e.g., civil society organizations and media), which may force companies to adopt sustainability (Chkanikova & Mont, 2015). The following sub-sections further explore the relevant literature on internal and external motivators.

Internal Instrumental Motivators

Economic Optimization

Economic optimization is an instrumental reason driving companies to implement SSCM practices. Dauvergne and Lister (2013, p. 1) argued that “leading-brand companies are racing to adopt sustainability in order to enhance their growth and control within the global economy. These ‘big-brands’ are defining sustainability and implementing it through their operations and supply chains to gain competitive

advantage and increase sales and profits”. Some potential advantages for implementing SSCM strategy include reduction in energy and operational costs (Hoffman, 2005; Lee, 2012), occupational health and safety costs (Cantor, 2008), packaging costs (García-Arca & Prado-Prado, 2006; Mollenkopf, Closs, Twede, Lee, & Burgess, 2005), costs related to attract new suppliers (Keating et al., 2008), transport and logistics costs through the use of clean transport modes (Carter & Rogers, 2008; De Brito et al., 2008), environmental liabilities and potential future costs (Berry & Rondinelli, 1998; DeSimone & Popoff, 2000), and cost savings by developing long-term relationships with suppliers (Andersen & Skjoett-Larsen, 2009).

Other reported benefits of SSCM implementation include increased revenues for the company (Nidumolu, Prahalad, & Rangaswami, 2009), improved competitiveness through reverse logistics practices (Barker & Zabinsky, 2010; Chan, 2007; Efendigil, Önüt, & Kongar, 2008; Jack, Powers, & Skinner, 2010; Schultmann, Zumkeller, & Rentz, 2006), better fleet management (Wilson, 2010), and improved product quality (Porter & van der Linde, 1995) through lean supply chain practices (Corbett & Klassen, 2006).

Several studies reported the business case for SSCM implementation. Rao and Holt (2005) conducted an empirical study of South-east Asian firms, which found that GSCM practices lead to competitiveness and economic performance. In their study, Pullman, Maloni and Carter (2009) reported that indirect performance gains associated with SSCM practices. They posit that environmental performance improvements lead to quality enhancement, which in turn develops the cost performance of a company. Zhu and Sarkis (2004) studied the relationship between GSCM practices of Chinese

companies and its impact on economic and environmental performance. The findings of the study revealed a strong relationship between GSCM practices and economic performance. Likewise, Green Jr, Zelbst, Meacham, and Bhadauria (2012) found a positive relationship between GSCM practices and organizational performance. Zailani, Jeyaraman, Vengadasan, and Premkumar (2012) also reported a positive relationship between SSCM practices and firm value.

Risk Management

The perception of potential risk or business loss vis-à-vis poor SSCM practices is a critical factor that influences management to adopt a SSCM strategy. However, previous studies revealed that companies can reduce, mitigate or eliminate social and environmental risks by exploiting proactive SSCM strategies (Cheung, Welford, & Hills, 2009; Keating et al., 2008; Roehrich et al., 2014; Tate, Ellram, & Kirchoff, 2010), developing risk management systems (Kytte & Ruggie, 2005; Teuscher, Grüniger, & Ferdinand, 2006), partnerships (Cheung et al., 2009) and capabilities (Reuter, Foerstl, Hartmann, & Blome, 2010). Maloni and Brown (2006) argued that supply chain sustainability issues increase the threat of media or consumer campaigns and public backlash, which may pose a substantial reputational risk to well-known brands. Accordingly, the image and reputation of a company “can be tainted by the actions of another member who engages in activities that result in public sentiment or outcry or, even worse, is accused of criminal behavior where liability is extends up and down the supply chain” (Spekman & Davis, 2004, p. 418).

Kytte and Ruggie (2005) suggested that ‘social risk’ is a growing area of concern for global corporations. The stakeholders can identify hidden supply chain vulnerabilities

and put pressures on companies for behavioural change. Some of these risks directly impact on the performance and reputation of a company. For example, Nike faced significant stakeholder backlash and loss of reputation because of child labour practices in outsourced factories operating in the developing world (Kytle & Ruggie, 2005; Locke, 2002, 2013). More recently, consumers launched a strong campaign against Apple as a result of alleged labour issues such as long working hours and poor wages in the Foxconn city where most of the Apple products are manufactured (Foley, 2012). On the other hand, some scholars have also drawn attention to the indirect impacts of environmental issues on the supply chain of a company. Lee (2012, p. 44) noted that “climate change issues have rapidly emerged as a new source of business risks and opportunities that could completely transform existing competitive environments”. Climate change issues may lead to natural calamities such as fires, hurricanes, floods, droughts and storms, which disrupt or totally damage supply chain operations.

Internal Normative Motivators

Sustainability Values and Top Management Commitment

The support of senior management is a key factor in the successful introduction and implementation of social or environmental programmes within a company’s SCM operations (Ageron et al., 2011; Dey, LaGuardia, & Srinivasan, 2011; Green Jr et al., 2012; Haake & Seuring, 2009; Mont & Leire, 2009; Pagell & Wu, 2009; Routroy, 2009; Walker & Brammer, 2013; Wolf, 2011; Zhu, Sarkis, Cordeiro, & Lai, 2008). Thus, one of the prime reasons for managers to embrace SSCM strategy can be their social or environmental values (i.e. normative rationality).

Value-based orientations – self-worth, integrity, pride and wellbeing of community (Jenkins, 2006; Ramus & Oppegaard, 2006) – guide managers to embrace corporate citizenship behaviour. Therefore, managers or owners initiate pro-environmental or social programmes within their companies (González-Benito & González-Benito, 2006). Scholars call this managerial orientation ‘ethical motives’ (Bansal & Roth, 2000) or ‘a desire to do the right thing’ (Jenkins, 2006; Lieb & Lieb, 2010; Sharfman, Shaft, & Anex Jr, 2009). Van Marrewijk (2003, p. 102) argued that caring and ethical behaviour inspires companies to “go beyond legal compliance and beyond profit considerations. The motivation for CS [corporate sustainability] is that human potential, social responsibility and care for the plant are as such important”.

External Motivators

Corporate Reputation and Brand Value

Corporate brand value encompasses intangible assets such as reputation and customer loyalty (Dey et al., 2011). A review of the literature suggests that both sustainable and SSCM issues influence corporate reputation and brand value. In a recent survey of corporate leaders, students and NGOs, Ditlev-Simonsen and Midttun (2011) suggested branding and reputation-building as primary drivers for corporate responsibility. Poor environmental or social performance of a company can potentially harm business reputation, negatively impact employee morale, and damage sales and its corporate legitimacy and license to operate in the marketplace (DeSimone & Popoff, 2000). Conversely, a proactive response to sustainability issues helps a company maintain social legitimacy and develop healthy relationships with society, which in turn provides tangible and intangible benefits to a company (DeSimone & Popoff, 2000), including an increase in sales (Dey et al., 2011), reputational enhancement (Heikkurinen, 2010),

strong brand image (Shekari & Rajabzadeh Ghatari, 2013) and product differentiation (Mahler, 2007).

Brady (2003, p.280) argued that “if companies align corporate values with those of their stakeholders and brand appropriately, they can extract considerable competitive advantage (primarily enshrined in increased brand equity)”. In a similar vein, Roberts (2003) suggested there is a strong relationship between reputation and the expectation of the supply chain stakeholders. For example, companies that implement reverse logistics strategy are able to enhance consumer satisfaction and loyalty, which leads to customers’ willingness to pay more for its products (Hazen, Wu, Cegielski, Jones-Farmer, & Hall, 2012). On the other hand, Andersen and Skjoett-Larsen (2009) claimed that image, reputation and brand protection are critical factors encouraging a company to adopt and implement codes of conduct in its global supply chain operations. Sarkis, Gonzalez-Torre, and Adenso-Diaz (2010) posited that good reputation can be a helpful tool that permits companies to negotiate future regulations with regulators and government agencies.

Customer Pressure/Expectation

Customers are the most influential business stakeholders, and their expectations must be taken into account when a company identifies its priorities, develops policies or implements a certain decision. By buying or boycotting a particular product or company, customers’ actions, behaviours, and preferences can impact the survival of a company in the marketplace (Collins, Steg, & Koning, 2007; Teuscher et al., 2006). According to Mahler (2007, p. 59), “companies and consumers realize that customers do not just buy products; they buy the supply chains that deliver the products”. In their

study, Trudel and Cotte (2009) found that on the one hand customers are willing to pay a price premium for ethically produced products. On the other hand, customers tend to punish those companies perceived as unethical or socially irresponsible.

Accordingly, a company's financial performance is affected by consumer awareness of where and under what conditions products are produced, which in turn influences their purchase decisions (Carter & Rogers, 2008). Furthermore, factors such as advancement in information and communication technologies, including the use of the internet and social media, have made it difficult and very risky for companies to hide their ethical or moral misconduct from the public, media and customers (Carter & Rogers, 2008; Dey et al., 2011). Against this background, customers' expectations with regard to social and environmental transparency and performance are often cited as one of the primary factors for implementing SSCM practices (Barker & Zabinsky, 2010; Carter & Rogers, 2008).

Government Legislation and Regulation

A significant body of research has revealed that regulation and legislation act as a strong driver for the adoption of SSCM practices (Ageron et al., 2011; Berns et al., 2009; Doonan, Lanoie, & Laplante, 2005; Giunipero et al., 2012; Routroy, 2009; Schultmann et al., 2006; Zhu et al., 2008). Companies face stern legal penalties and fines for non-compliance to environmental or social regulations, which may negatively impact their performance. A recent example is the British Petroleum (BP) oil spill in the Gulf of Mexico, which severely impacted on the economic performance of the company. Gosden (2013) estimated that the BP oil spill cost more than \$90 billion, including civil and criminal penalties, to the company. These penalties, fines and legal costs have

caused many difficulties for BP in maintaining its economic performance. BP's output fell 5.7 percent over the few years and profits halved in 2012 when BP sold its assets to help pay for costs related to the disaster (Gosden, 2013). Dunphy (2011, p. 5) argued that when the present state of “environmental crisis becomes widely accepted, governments are under pressure to lead in taking effective environmental actions”.

However, Walker et al. (2008) noted that environmental regulations play a significant role in the implementation of environmental practices, but these regulations are not a triggering factor. In their study, Barker and Zabinsky (2010) found government legislations a key motivator for companies to adopt a reverse logistics strategy in their operations. Conversely, González-Benito and González-Benito (2006) revealed that the pressures from government did not constitute a driver for sustainable purchasing. They further argued that government pressures promote observation of regulations, and thus limit a company's capability to develop innovative solutions for environmental issues.

Public and NGO's Pressure

Public sentiment and NGO pressure may influence companies to adopt a SSCM strategy (Mont & Leire, 2009; Perez-Aleman & Sandilands, 2008; Sharfman et al., 2009; Teuscher et al., 2006). This is evident from a recent campaign launched by Greenpeace against Nestlé, blaming the company for sourcing unsustainable palm oil, which has led to rainforest deforestation issues (Wolf, 2014). Thus, it is well documented that contemporary civil society organizations such as NGOs and media exert an intense pressure on companies to upgrade their social and environmental performance by implementing SSCM strategy (Carbone, Moatti, & Wood, 2012; Peters, Hofstetter, & Hoffmann, 2011).

2.4.3 Barriers for Implementation of SSCM Strategy

Internal Barriers

Previous research has reported a variety of factors that may inhibit companies to embrace SSCM strategy. Barriers to SSCM implementation can be classified into two categories – internal barriers and external barriers. Internal barriers include organizational specific constraints which act as an obstacle in adopting an SSCM strategy. For instance, factors such as the financial preoccupation of managers or owners (Ageron et al., 2011; Mont & Leire, 2009; Walker & Brammer, 2009), lack of management commitment, company size (Hervani, Helms, & Sarkis, 2005), social and psychological barriers (Hoffman & Rebecca, 2008), lack of supportive corporate structures and processes (Walker et al., 2008) and lack of training and understanding (Cooper, Frank, & Kemp, 2000), all hinder a company's effort to implement SSCM strategy. On the other hand, external barriers involve forces present in the external environment, which sometimes impede corporate ability to engage in SSCM strategy. For example, lack of customer willingness to purchase sustainable products (Wittstruck & Teuteberg, 2011), lack of competence and production facilities of suppliers (Ageron et al., 2011), competitive pressures (Cooper et al., 2000), type of industry (Zhu et al., 2005), lack of supplier commitment, cooperation and coordination between supply chain members (Walker et al., 2008), and higher prices of sustainable products (Walker & Brammer, 2009; Young, Hwang, McDonald, & Oates, 2010).

Lack of Management Support

The support of top management is instrumental for the introduction of SSCM strategy in a company (Wittstruck & Teuteberg, 2011). However, the lack of top management commitment can reduce a company's ability to engage in sustainability initiatives.

Previous research has revealed that insufficient management support can be a critical barrier to sustainability implementation (Arevalo & Aravind, 2011). Correia, Howard, Hawkins, Pye, and Lamming (2013) argued that strategic leadership is an issue for sustainable procurement.

Inadequate Customer Demand for Sustainable Products or Services

The sale of sustainable products may enable companies to achieve the price premium by offering differentiated products or services to its customers. However, some scholars argued there is no or very little price premium for companies that produce sustainable or organic products (Doonan et al., 2005), and that there is a lack of customer demand for sustainable products or services (Seuring & Müller, 2008). It has been also reported that lack of time sufficient for research, higher prices and inadequate information may discourage consumers from purchasing green products (Young et al., 2010).

Financial Constraints

Implementation of SSCM strategy requires the development of a supply chain infrastructure, systems and processes, which may increase the cost of operations. However, due to monetary constraints or high costs, companies often struggle to engage in SSCM practices (Ageron et al., 2011; Chkanikova & Mont, 2015; Mont & Leire, 2009). Several studies reported higher financial costs as a significant barrier to the implementation of SSCM practices (e.g., Chkanikova & Mont, 2015; Mont & Leire, 2009; Walker & Brammer, 2009). Walker and Brammer (2009) in their study of the UK public sector revealed that financial constraint was a leading barrier to sustainable procurement. In a similar vein, Min and Galle (2001) found the high cost of environmental programmes was a serious concern for the successful implementation of

GSCM practices. According to Harris et al. (2004), the traditional procurement system in which multiple bids are obtained from suppliers and a contract is awarded to a low cost bidder contradicts sustainable purchasing strategy. Lower upfront costs encourage a buyer to purchase a product which is less costly but of lower efficiency or with poor environmentally friendly attributes. Thus, short-termism entrenched in the traditional purchasing system acts as an obstacle to sustainable procurement (Harris et al., 2004).

Complexity, Knowledge and Risk-aversion in SSCM Implementation

Legal and administrative complexities, risk-aversion behaviour, lack of awareness and negative perceptions regarding environmental procurement are key concerns that may hinder a company's sustainable procurement efforts (Chkanikova & Mont, 2015; Correia et al., 2013). Zhu and Sarkis (2004) suggested that companies do recognize the significance of integrating GSCM strategy into their business operations; however most of them lack the management skills, experience and essential tools to execute proactive GSCM practices.

Small companies, particularly, lack competence and production facilities, which create a major obstacle to sustainable supply management (Ageron et al., 2011). Lack of technical knowledge and divided purchasing responsibilities may inhibit sustainable purchasing efforts in the public sector. For example, “higher value items may be purchased centrally with lower cost ones decentralized to operating units or to individuals. Decentralized purchasing makes it harder to reach and influence buyers with new policy directives” (Harris et al., 2004, p. 7). Procurement decisions based on total life-cycle costs (LCCs) is one of the solutions for sustainable purchasing. LCC is defined as “the process whereby organizations seek to procure goods, services, works

and utilities with a reduced carbon footprint throughout their life cycle and/or leading to the reduction of the overall organizational carbon footprint when considering its direct and indirect emissions” (Correia et al., 2013, p. 60). However, complexity and extensive data analysis make it difficult to perform LCC for each product. Thus, purchasing professionals are more receptive to list pre-approved items, with LCC used to justify exceptions or for very large contracts.

External Barriers

Environmental Regulations

Environmental regulations are frequently cited as a driver for SSCM adoption (Wittstruck & Teuteberg, 2011). However, some authors argued that costly and inflexible environmental regulations restrain a company’s environmental proactivity (Porter & van der Linde, 1995). Within such settings, companies are required only to meet the minimum regulatory criteria that limit their capability to come up with innovative technologies and solutions that improve environmental performance beyond mandatory regulatory standards. DeSimone and Popoff (2000, p. 239) argued in support of “a new paradigm for regulatory oversight that fosters a spirit of innovation and responsibility rather than merely an obligation to comply”. However, lack of government leadership can hinder the implementation of SSCM practices in the retail context (Jones, Comfort, & Hillier, 2008).

Lack of Performance Management Systems

Measuring performance in supply chains is a challenging task as it involves measuring the performance across the supply chain operations at supplier, manufacturer, distributor and retailer levels. Moreover, key issues such as “non-standardized data, poor

technological integration, geographical and cultural differences, differences in organization policies, lack of agreed upon metrics or poor understanding of the need for inter-organizational performance measurement” (Hervani et al., 2005, pp. 330-331) make it difficult for companies to develop uniform performance management systems. Brewer and Speh (2001) claimed that lack of understanding, non-standardized performance measures and diverse priorities, goals and objectives of supply chain members are some of the challenges that create difficulties in implementing consistent performance measurement tools and systems across the supply chain. Therefore, as indicated in the literature, there is lack of scholarly agreement on what factors motivate and hinder companies’ efforts to implement SSCM strategy. The present study fills this gap by exploring what factors motivate and hinder companies’ efforts in adopting SSCM strategy.

2.4.4 Socially Responsible Supply Chain Management (SRSCM)

Since the early 1990s, many western companies have adopted an outsourcing strategy to achieve business advantages such as low production costs and competitive advantage (Mellahi, Morrell, & Wood, 2010). According to Amiti and Wei (2005, p. 313), the term outsourcing refers to “the procuring of service or material inputs by a firm from a source in a foreign country”. Generally, companies that adopt an outsourcing strategy focus on their core business activities and subcontract non-core business activities to locations where production costs are low. In order to outsource non-core business activities, western companies, for example, usually contract a large number of suppliers in the developing world to produce goods for them (Mellahi et al., 2010). However, this production paradigm shift has posed new challenges to purchasing companies, such as management of reputational risk, labour issues, product safety and other unethical

incidents along the supply chain (Gimenez & Sierra, 2013; Gimenez & Tachizawa, 2012; Soundararajan & Brown, 2014), especially in emerging and developing countries (Beske et al., 2008).

For example, there is growing evidence that the labour force in developing countries operates in an unsafe working environment and is often exploited by local manufacturers who are contracted by MNCs to produce goods on their behalf (Soundararajan & Brown, 2014; Tachizawa & Wong, 2014). Hence, focal companies (e.g., well-known international brands) are held responsible for environmental and social concerns at offshore factories – concerns such as child labour, the absence of a minimum wage, serious health and safety hazards and long working hours (Beske et al., 2008; Kelly & Bhutta, 2010; Lysons & Farrington, 2006). Accordingly, focal companies are frequently targeted by NGOs, the media, consumers and the general public, who disapprove of these unsustainable practices in the developing world, and ask these big brands and MNCs to take responsibility for their suppliers' sustainability performance (Bloom & Perry, 2001; Mellahi et al., 2010).

Scholars have investigated social sustainability issues within SCM from different perspectives. On the one hand, prior studies have examined SRSCM within the purchasing perspective. The common themes of such studies include ethical sourcing, ethical trade, fair trade, socially responsible organizational buying, sustainable sourcing, ethical supply chain, purchase social responsibility, sustainable supplier management and voluntary governance mechanisms (e.g., Blowfield, 2000; Davis & Ryals, 2010; Foerstl, Reuter, Hartmann, & Blome, 2010; Kelly & Bhutta, 2010; New, 2004; Pagell, Wu, & Wasserman, 2010; Roberts, 2003; Soundararajan & Brown, 2014). The main

purpose of these studies was to investigate the role of purchasing in developing sustainability along the supply chain operations of companies.

On the other hand, scholars have studied SRSCM exclusively from the logistics perspective. The general themes of such studies are, for example: logistics social responsibility (Carter & Jennings, 2002; Ciliberti, Pontrandolfo, & Scozzi, 2008; Sarkis, Helms, et al., 2010) and diversity and employment issues in logistics (Lynagh, Murphy, & Poist, 1996). Nonetheless, the literature of logistics social responsibility is comparatively rare compared to the social responsibility of purchasing. Logistics social responsibility addresses two main areas of SCM – transportation and warehousing management (Carter & Jennings, 2002). The key responsibilities that relate to these areas are: maintaining favorable employment conditions for workers, quality of life, diversity, human rights, health and safety, philanthropy and community development (Carter & Jennings, 2002; Halldorsson et al., 2009; Sarkis, Helms, et al., 2010; Tulder, Wijk, & Kolk, 2008).

Authors have also suggested that the previous research on operations and SCM mostly ignored the social sustainability dimension (Kleindorfer et al., 2005; Seuring & Muller, 2008; White & Lee, 2009). According to Ashby et al. (2012, p. 497), “the social dimension is recognized, but receives less emphasis than expected given supply chain focus on interaction, relationships and communication”. They further observed that environmental aspects are well represented and explored in the present literature, covering all phases of supply chain compared to the social sustainability dimension in SCM.

The notions of fair trade and ethical trade characterize the social dimension of ethical/sustainable sourcing (Barrientos & Dolan, 2006; Smith & Barrientos, 2005). Fair trade is defined as “an alternative approach to trading partnership that aims for sustainable development of excluded and/or disadvantaged producers. It seeks to do so by providing better trading conditions, raising awareness, and campaigning” (Krier, 2001 as cited in Pelsmacker, Driesen, & Rayp, 2003, p. 367). Fair trade practices enable marginalized producers in developing countries to get fair prices for their products, thus fostering equity in the trading relations between developing and developed countries (Barrientos, 2011; Barrientos & Dolan, 2006).

On the other hand, the concept of ethical trade emerged during the mid-1990s as a result of increased global recognition for CSR and sustainability paradigms (Barrientos & Dolan, 2006). Browne et al. (2000) defined ethical trade as:

Trading in which the relationship between the interested parties is influenced by concern for some or all of:

- Workers’ pay and a range of rights and conditions, including health and safety, non-exploitative and non-discriminatory labour practices for men, women and children, and effective monitoring and auditing procedures.
- Producer livelihoods including fair prices and a commitment to social development.
- Sustainable production methods which engender sustainable environmental and developmental practices”. (pp.76-77)

The Ethical Trading Initiative (ETI) (2011), a leading alliance of companies, trade unions and NGOs that promotes and supports labour rights and ethical work practices around the globe, provides a more detailed definition of ethical trade:

Ethical trade means that retailers, brands and their suppliers take responsibility for improving the working conditions of the people who make the products they sell. Most of these workers are employed by supplier companies around the world, many of them based in poor countries where laws designed to protect workers' rights are inadequate or not enforced. Companies with a commitment to ethical trade adopt a code of labor practice that they expect all their suppliers to work towards. Such codes address issues like wages, hours of work, health and safety and the right to join free trade unions. (2011, para.2)

One of the main drivers for companies to adopt ethical trade practices is the International Labor Organization (ILO) conventions that endorse the need for humanizing working conditions across the SCM operations of companies by embracing ethical codes of labour practices (Tulder et al., 2008). Codes of labour practices are developed by focal companies in order to provide guidelines to their supplying partners regarding the integration of fair workplace practices and principles in their organizations. The focus of these codes is on issues including sweatshops and ethical labour practices. Radin and Calkins (2006) described sweatshops as:

Work environments that violate laws and where workers are subject to: Extreme exploitation, including the absence of a living wage or long work hours; poor

working conditions, such as health and safety hazards; arbitrary discipline, such as verbal and physical abuse; and /or fear and intimidation when they speak out, organize, or attempt to form union. (p. 262)

Voluntary Sustainable Supply Chain Governance (SSCG) Mechanisms

The review of literature revealed that companies adopt two types of voluntary SSCG mechanisms – a hands-off approach and a hands-on approach – in order to implement SRSCM strategy. The term governance refers to “the relations through which key actors create, maintain, and potentially transform network activities” (Raynolds, 2004, p.728). Thus, governance mechanisms in the SCM context relate to “those practices used by firms to manage relationships with their suppliers with the aim of improving sustainability performance” (Gimenez & Sierra, 2013, p. 191). Yet, Marco and Paolo (2014, p. 2) provided a relatively broader definition of SSCG mechanisms as, “practices, initiatives and processes used by the focal firm to manage relationship with 1) internal functions and departments and 2) their supply chain members and stakeholders with the aim of successfully implementing their corporate sustainability approach”. However, it is important to note that these voluntary SSCG mechanisms can be considered ‘soft’ laws, which do not possess legal binding but are enforced through sanction-based mechanisms (Perego & Kolk, 2012; Soundararajan & Brown, 2014). The following section presents the literature review of hands-off and hands-on approaches.

Hands-off Approach

A hands-off approach is an indirect management approach used by the buying company to manage their suppliers’ activities and behaviour, and it is based on standards or certification schemes (Gimenez & Sierra, 2013). Other common terms used in the

literature for this approach are social standardization and certification schemes, socially sustainable management systems, indirect standardization-based approaches and international accountability standards (e.g., Gilbert, Rasche, & Waddock, 2010; Perego & Kolk, 2012; Seuring & Muller, 2008). These social or environmental certifications, systems or “standards can be set up to specify [the] technical characteristics of a product, specific process and producing methods, quality traits and safety” (Bolwig, Ponte, Du Toit, Riisgaard, & Halberg, 2010, p. 177). According to Rasche (2010), social standards represent collaborative attempts by non-business entities and actors, including key stakeholder groups such as governments, labour organizations, civil society organizations, and third parties, who define the process of formulation, enforcement, upgrading and maintenance of these standards. Gilbert, Rasche, and Waddock (2010, p. 24) defined international accountability standards as “voluntary predefined rules, procedures and methods to systematically assess, measure, audit and/or communicate the social and environmental behaviour and/or performance of firms”.

Thus, a certified product specifies that it adheres to a particular set of standards (or minimum performance targets) (Gilbert et al., 2010), which guarantee consumers it has been produced under sustainable and ethical conditions (Matus, 2010; National Research Council, 2010). However, the National Research Council (2010, p. 3) further noted that “existing certification schemes are not always uniform, nor are they immune to competing and sometimes false claims which, at best, contribute to ‘green noise’ and consumer fatigue, and at worst, undermine certification efforts which do contribute to environmental and social improvements”. According to Reynolds (2004, p. 738), although certification as a tool that represents a powerful form of network governance,

which is increasingly utilized by powerful retailers and branders, these certification schemes “create significant barriers to entry for poor Southern producers and encourage the concentration of organic production and price premiums in the hands of large corporate producers”.

The sustainable certified programmes can be categorized into two broad clusters: product-based certifications and process-based certifications (Cafaggi & Iamiceli, 2014; Ferrari, 2013; Gilley, Worrell, Davidson, & El-Jelly, 2000; Preuss, 2009). Product-based certifications provide a guarantee to buyers that products are produced or manufactured in socially or environmentally sound conditions in which a producer has taken the necessary measures to reduce negative sustainability impacts (Gilley et al., 2000). On the other hand, process-based certifications do not necessarily relate to the end outcomes, that is, product or service, but rather these certifications focus on improving the processes, activities and systems involved in the production of goods or services (Henson & Humphrey, 2009). Furthermore, Gilbert et al. (2011) include (other than two categories discussed above) principle-based standards (e.g., OECD guidelines for multinational enterprises and the UN global compact) and reporting standards (e.g., global reporting initiatives) as third and fourth categories respectively. These types are discussed in the hands-on approaches section.

The authenticity of sustainability certification is determined by a verification process conducted by an independent third party auditor (Klassen & Vereecke, 2012). Such a verification process provide buyers with an assurance and control over the production of products and services (Hatanaka, Bain, & Busch, 2005), where they have a little control or influence over suppliers. Therefore, obtaining certified products or services enable

buying companies to reduce their sustainability risks and auditing expenditure (Hatanaka et al., 2005; Klassen & Vereecke, 2012) by having a trustworthy third party organization to review and maintain sustainability standards of upstream supply chain operations (Tachizawa & Wong, 2014). Thus, focal companies increasingly procure certified goods and services in order to promote sustainable production, reduce product liability and mitigate their business risk, which often emerges from their upstream supply chain practices. Suppliers also attain certification as a means to conduct business with large focal companies. These large companies require their suppliers to be certified by an independent, third-party organization for their products, services or processes (Klassen & Vereecke, 2012; Soundararajan & Brown, 2014). In general, third-party institutions are perceived by stakeholders and general public as independent, objective and impartial organizations providing certification services to supplying organizations (Hatanaka et al., 2005).

Some of these well-known global social sustainability standards include: social accountability 8000; the fair labour association (FLA); the business social compliance initiative (BSCI); the clean clothes campaign (CCC); the fair wear foundation (FWF); the supplier ethical data exchange (SEDEX); AccountAbility 1000 assurance standard; the waste resource action programme (WRAP) and the ethical trading initiative (ETI) (for details see, Epstein, 2008; Gilbert et al., 2010; Leipziger, 2010; Rasche, 2010). Most of these standards are developed on the basis of ILO conventions/declarations that are primarily targeted at protecting and enhancing the welfare of workers.

Hands-on Approach

A hands-on approach is a direct management approach used by the buying company to manage their suppliers' activities and behaviour, and is based on standards or certification schemes (Gimenez & Sierra, 2013). This approach requires the buying company to invest human, technical and financial resources to enhance the ability of suppliers to meet social or environmental standards (Gimenez & Tachizawa, 2012). A hands-on approach to supply chain governance requires companies to perform two types of activities – assessment and collaboration (Gimenez & Tachizawa, 2012). Assessment and monitoring activities involve those practices which relates to monitoring, auditing and evaluating suppliers' performance on prescribed social or environmental standards/or codes of conduct developed by the buying company (Foerstl et al., 2010; Mamic, 2005). Some of most commonly used assessment techniques are the supplier self-assessment questionnaire, site visits, inspections and interviews of the employees of suppliers (Gimenez & Sierra, 2013; Sisco, Chorn, Pruzan-Jorgensen, & Compact, 2010).

On the other hand, collaboration activities refer to working directly with suppliers in order to provide them with needed support for developing their sustainability performance through guidance and support activities (Gimenez & Sierra, 2013; Sisco et al., 2010). Some of the most commonly employed collaboration techniques include suppliers' remediation and capacity building, resources provision for the development of sustainability performance and training and workshops for suppliers (Sisco et al., 2010).

A code of conduct for the supplier is the primary tool for ensuring suppliers' compliance to social or environmental standards. Suppliers' codes of conduct specify commercial, ethical, social and environmental parameters as well as the expected responsibilities and accountabilities of suppliers as to how they should conduct their business activities (Stevens, 2008). According to Blowfield (2000, p. 191), "codes lie at the hearth of ethical trading or ethical sourcing, and often undertake issues central to sustainable business". Codes of conduct are "written documents which attempt to state the major philosophical principles and articulate the values embraced by organizations" (Stevens, 2008, p. 601). There are no unified or standard codes of conduct applicable to all industries; rather they vary depending on the industry/organization where they are employed. However, there are several guidelines available as to how codes of conduct should be developed. Some of the most prominent guidelines are provided by the UN Global Compact, OECD guidelines for multinational enterprises and ILO declarations (Gilbert et al., 2010; Leipziger, 2010).

Scholars have studied the effectiveness of assessment and collaboration approaches to hands-on SSCG mechanisms. However, there is no consensus among scholars as to which of these methods is the more appropriate mechanism to adopt. Some authors have studied the efficacy of assessment (monitoring and auditing of codes of conduct implementation) mechanisms and their relation to a company's SRSCM performance (e.g., Egels-Zandén & Lindholm, 2014; Locke, 2013; Locke, Qin, & Brause, 2007; Tulder et al., 2008). Some of these studies revealed the positive impact of codes of conduct and assessments on SRSCM performance.

Others have suggested that assessment activities are deficient and an expensive tool on its own (Egels-Zandén, 2007; Egels-Zandén & Lindholm, 2014). For example, supplier's assessments often lack clarity and depth (Mann, Byun, Kim, & Hoggel, 2014), and require the considerable investment and time of a buying company (Foerstl et al., 2010). Therefore, some scholars have argued that assessment and collaborative mechanisms should be employed simultaneously, as relying solely on assessment or collaboration is not sufficient for achieving SRSCM (e.g., Akamp & Müller, 2013; Boyd, Spekman, Kamauff, & Werhane, 2007; Frostenson & Prenekert, 2014; Gimenez & Sierra, 2013; Keating et al., 2008; Reuter et al., 2010; Soundararajan & Brown, 2014). However, there are very few studies that compare the effects of adopting assessment and collaboration mechanisms simultaneously. The present study fills this gap by exploring which voluntary governance mechanisms are used by companies to implement and enhance their SSCM strategy.

2.4.5 Green Supply Chain Management

The concept of GSCM relates to integrating environmental thinking into SCM (Srivastava, 2007). Previous studies have examined several topics under the broader rubric of GSCM. Some of these studies have a relatively narrow focus, such as environmental purchasing (Carter et al., 1998; Zsidisin & Siferd, 2001), green procurement (Appolloni, Sun, Jia, & Li, 2014), sustainable sourcing (Pagell et al., 2010), sustainable procurement (Grob & Benn, 2014), reverse logistics (Iez-Torre, Ivarez, Sarkis, & Adenso-Diaz, 2010; Pokharel & Muthab, 2009), and environmental logistics strategies (Wai et al., 2010). Other studies are relatively broad and focus on the integration of environmental aspects over all the SCM activities. The titles of such studies include: GSCM (Holt & Ghobadian, 2009; Srivastava, 2007; Zhu et al., 2015),

integrating environmental management and SCM (Handfield, Sroufe, & Walton, 2005) and environmentally sustainable SCM (Chiarini, 2014; Forman & Jorgensen, 2004).

Scholars have documented that the environmental dimension of sustainability is fairly well-represented in SSCM research (Ashby et al., 2011). However, studies that investigated GSCM holistically are rare in comparison to those studies which focused on fragmented aspects of GSCM, such as green procurement. Furthermore, empirical research on GSCM in the New Zealand business context is still nascent in contrast to global SSCM research. The present study aims to fill these gaps in the extant literature by exploring an integrated GSCM strategy in the New Zealand business context.

Srivastava (2007, p. 54) defined GSCM as “integrating environmental thinking into supply-chain management, including product design, material sourcing and selection, manufacturing processes, delivery of the final products to the consumers as well as end-of-life management of the product after its useful life”. It is argued that organizations need to focus their environmental sustainability efforts on the total life cycle stages of a product because environmental impacts arise at all stages of production including extraction, manufacturing, consumption and end-of-life management of the product (Zhu et al., 2005). Thus, a GSCM strategy requires companies to manage its environmental impacts both at the intra-organizational (internal or mid-stream operations) and inter-organizational (upstream and downstream SCM operations) levels (Gnoni, Elia, & Lettera, 2011; Hervani et al., 2005; Kovacs, 2008; Sarkis, Zhu, & Lai, 2011; Srivastava, 2007). According to Rao and Holt (2005), the greening of supply chain activities promotes the implementation of integrated GSCM strategy that in turns lead to competitive advantage and the improved financial performance of a company.

On the one hand, empirical evidence suggested that stringent environmental regulations, competition in the market and stakeholder pressure are the main factors that propel companies to expand environmental management along their extended supply chains (Darnall, Jason Jolley, & Handfield, 2008; Routroy, 2009; Zhu et al., 2005). On the other hand, prior studies also report a positive relationship between GSCM practices and company performance (e.g., Choi & Hwang, 2015; Lun, 2011; Sarkis, 2012). Therefore, many companies embracing GSCM practices more and more, given stakeholder pressure and positive performance outcomes such as improved economic bottom line.

The concept of GSCM encompasses a range of related areas, such as green design, environmental procurement, green operations or cleaner production, green logistics (including reverse logistics) (Srivastava, 2007; Zhu et al., 2005). These strategies are applied at different stages of SCM (Altuntas, 2014). However, the boundary of GSCM depends on the aim of the researcher just as much as the SCM approach (Zhu et al., 2005). The four main approaches to GSCM are explained in the following discussion: green design, environmental procurement, green operations or cleaner production, and green logistics.

Green Design

Green design, or design for the environment (DFE), relates to integrating environmentally conscious design and life cycle analysis of the product (Eltayeb, Zailani, & Ramayah, 2011; Routroy, 2009; Srivastava, 2007) within a company and joint initiatives along the supply chains (Walton et al., 1998). Eltayeb et al. (2011, p. 497) defined green design as “actions taken during product development aimed at

minimizing a product's environmental impact during its whole life cycle – from acquiring materials, to manufacturing, use, and ultimately to its final disposal”. Thus, green design focuses on the development and design of processes, systems and new products with the goal to reduce environmental impacts on the natural environment through the entire life cycle of a product (Eltayeb et al., 2011; Routroy, 2009; Tsoufas & Pappis, 2006). However, “redesign products will only be effective if they are able to provide at least the services of the products they replace” (Tsoufas & Pappis, 2006, p. 1596). In other words, products should be designed in such a way that they are functionally durable, re-useable, recoverable safely after use and environmentally friendly in disposal (Gotzel, 1999). Furthermore, to implement DFE, consideration should be given to the selection of sustainable materials for production (Tsoufas & Pappis, 2006). Raw material with high recycling characteristics and the least environmental impacts should be given priority during the production stage of SCM.

The goal of green product design analysis at an early stage of SCM is to examine the design implications on the environmental performance of a product at later stages of its production, use and return for disposal or recycling (Glantschnig, 1994; Handfield, Melnyk, Calantone, & Curkovic, 2001; Sarkis, 2003). Thus, green design facilitates corporate decision makers to choose material and processes options that have the least environmental impact (Srivastava, 2007). Previous studies have identified several approaches, such as design for waste minimization (Sarkis & Cordeiro, 2001), design for recycling and design for reuse (Gertsakis, Ryan, & Lewis, 1997), replacement of hazardous materials and processes to less injurious substances and environmentally sound processes (Graedel, 2002), and design for remanufacturing (Inderfurth, de Kok, &

Flapper, 2001). Efforts have been also made to develop a framework for industry to scrutinize and comprehend product life cycle management (Vijay, 2011).

One of the key green design frameworks available to examine environmental impacts is the life cycle analysis (LCA). This method is also referred to as the cradle-to-grave approach (Kopnina & Blewitt, 2015). LCA is an environmental management technique, which enables examination of environmental impacts such as energy use, GHG emissions and material consumption of a particular product over the entire life cycle of the product (Altuntas, 2014; Hagelaar & van der Vorst, 2001; Kopnina & Blewitt, 2015; Tsoulfas & Pappis, 2006). LCA is defined as:

A methodological framework for estimating and assessing the environmental impacts attributable to the life cycle of a product, such as climate change, stratospheric ozone depletion, tropospheric ozone (smog) creation, eutrophication, acidification, toxicological stress on human health and ecosystems, the depletion of resources, water use, land use, and noise—and others. (Rebitzer et al., 2004, p. 702)

Hagelaar and van der Vorst (2001) categorized LCA into the following three types:

- compliance-oriented LCA strategy, which relates to compliance of rules and regulations with the help of end-of-pipe techniques
- Process-oriented LCA, which deals with managing environmental impacts caused by production processes

- Market-oriented LCA, which focuses on minimization of environmental burden caused by product design so that competitive advantage can be realized.

The company needs to identify which of the above cited methods match their requirements and implement the most suitable accordingly. Although LCA allows the measurement of the environmental impacts of a product throughout its entire supply chain activities (Hauschild, Jeswiet, & Alting, 2005), its application presents a huge measurement challenge for industry practitioners as the life cycle analysis method is still subject to methodological issues (Orsato, 2009). However, ISO 14025 still requires such assessment to ensure the environmental impacts of a product over its total life span (from extraction to disposal or recycling) (Orsato, 2009).

Green Procurement

Environmental or green procurement is concerned with giving preference to environmental sustainability criteria when making purchase decisions (Blome, Hollos, & Paulraj, 2014). It has been argued that ‘procurement’ is a key SCM function by which improved GSCM performance can be achieved (Appolloni et al., 2014; Miemczyk et al., 2012; Preuss, 2001; Zsidisin & Siferd, 2001). Several studies have reported the positive impact of green procurement on a company’s environmental and financial performance (e.g., Appolloni et al., 2014; Zhu, Geng, Fujita, & Hashimoto, 2010). However, some studies reported no strong presence of sustainable procurement practices in some industries (Bjorklund, 2011), and companies are still in the early stages of development with regard to green purchasing and supply management (Tate, Ellram, & Dooley, 2012). Thus, results are inconclusive with regards to the impacts of environmental purchasing on a company’s performance, and this makes it important to investigate how

modern companies acquire new technologies that deliver improved environmental performance through waste minimization, reduction in energy use and water consumption. Zsidisin and Siferd (2001) defined environmental (green) purchasing as:

The set of purchasing policies held, actions taken, and relationship formed in response to concerns associated with the natural environment. These concerns related to the acquisition of raw material, including supplier selection, evaluation, and development; suppliers' operations; inbound distribution; packaging; recycling; reuse; resource reduction; and final disposal of the firm's products. (p. 69)

Supplier relationship management has an important role for building suppliers' capabilities so that they may provide sustainable supplies and material to a focal company. Supplier relationship management practices consist of supplier selection, supplier evaluation and supplier development (Schiele, 2007). Leppelt et al. (2011) have conducted a study on the sustainable supplier relationship management (SSRM) and purchase and supply management (PSM) practices of leading companies in the European chemical industry. The study reported that sustainability driven companies make significant investments in SSRM practices to manage sustainability performance of entire supply chains. Moreover, strategic alignment, risk perception and the listing in sustainability indices are key factors which promote and impede a company's ability to adopt SSRM practices.

Green Operations

The concept of green operations focuses on the integration of ‘cleaner production’ methods by which products or services are produced for customers. The term cleaner production is defined as “a systematically organized approach to production activities, which has positive effects on the environment. These activities encompass resource use minimization, improve eco-efficiency and source reduction, in order to improve the environmental protection and to reduce risks to living organisms” (Glavič & Lukman, 2007, p. 1879). The notion of eco-efficiency in this definition relates to ‘doing more with less’ (DeSimone & Popoff, 2000), such as minimizing the use of resources and the implementation of remanufacturing principles in the production processes (WBCSD, 1996).

Green operation practices can be further classified into two broad categories: lean management and green management. Lean management is a relatively narrow concept, and the key emphasis of lean practices is on achieving operational efficiencies and cost reductions in organizational processes (Larson & Greenwood, 2004; Mollenkopf, Stolze, Tate, & Ueltschy, 2010). Conversely, green management is a rather broad notion that includes a range of green practices within organizations directed towards developing conservation of the natural environment (Carvalho, Duarte, & Cruz Machado, 2011; Mollenkopf et al., 2010).

Prior research indicates that lean and green management concepts are not always compatible (Carvalho et al., 2011; Mollenkopf et al., 2010). For example, the lean management paradigm perceives the idea of environmental preservation as a constraint while the green paradigm views the management of environment attributes as an area of

opportunity (Franchetti, Bedal, Ulloa, & Grodek, 2009) that needs to be exploited to achieve sustainability. At the same time lean and green management strategies hold various common characteristics, such as their focus on minimization of waste, energy, water and other natural resources used in the organizational production processes. Larson and Greenwood (2004) argued that many companies fail to understand and strategically capitalize on these mutual advantages, which result in operational efficiencies and environmental improvements.

A corporate journey to the adoption of cleaner production principles often begins with the espousal of lean manufacturing management. According to Tsoufias and Pappis (2006, p. 1601), “for starters, a sustainable approach can lead to internal cost savings from using energy more efficiently, producing less waste and recycling materials”. Accordingly, lean manufacturing practices are particularly useful to those companies that are new to sustainability implementation in terms of enabling companies to reduce waste, resources, pollution, inventory level and other non-value adding activities from organizational production processes (Corbett & Klassen, 2006; Franchetti et al., 2009; Galeazzo, Furlan, & Vinelli, 2014; King & Lenox, 2001; Larson & Greenwood, 2004). On the other hand, these practices also enhance customer satisfaction by optimization of service delivery and manufacturing processes. Lean practices provide substantial direct financial and operational advantages to practicing companies (Larson & Greenwood, 2004); nonetheless King and Lenox (2001, p. 244) argued that “lean production may have a significant public spillover – improved environmental performance”.

Green management strategies focus directly on improving corporate environmental performance by minimizing the negative ecological impacts of production activities (see

chapter 2). Thus, in this context the key purpose of green management strategies is to mitigate negative environmental impacts such as carbon emissions and industrial pollution (Dües, Tan, & Lim, 2013; Mollenkopf et al., 2010), as well as to enhance the competitive advantage of a company (Porter & van der Linde, 1995a, 1995b). One of the primary methods by which companies implement green management practices is adoption of environmental management systems (EMS). An EMS is defined as “a transparent, systematic process known corporate-wide, with the purpose of prescribing and implementing environmental goals, policies, and responsibilities, as well as regular auditing of its elements” (Steger, 2000, p.24). Several past studies reported the positive impact of EMS on a company’s environmental and financial performance (e.g., Melnyk, Sroufe, & Calantone, 2003; Potoski & Prakash, 2005).

Some scholars have argued that lean manufacturing sets a foundation for green management and acts as a catalyst in the implementation of green management practices in a company (see e.g., Bergmiller & McCright, 2009; Dües et al., 2013). Franchetti et al. (2009) posited that the espousal of lean manufacturing principles provides a natural tendency towards implementation of green management practices. Correspondingly, the adoption of lean practices provides a favourable background for companies to adopt green management practices (Dües et al., 2013), and these practices complement each other perfectly when effectively linked (Larson & Greenwood, 2004). Carvallho, Duarte, and Cruz-Machado (2011) and Dües et al. (2013) perceived lean and green management as synergetic approaches, which help companies to simultaneously improve environmental and operational performance. This argument suggests that lean practices often drive green performance; alternatively green practices often improve operational performance.

Green Logistics

Traditional logistics focuses on the supply of goods from manufacturer to the end user (Lippman, 2001). However, green or environmental logistics relates to the management of goods from producer to the end consumer with the fewest environmental impacts as well as the management and disposal of product at the end of the product life cycle (Lippman, 2001). Therefore, the scope of green logistics is much wider than the scope of the traditional logistics function. Those companies which adopt the green logistics approach are required to manage bi-dimensional flows of information, materials and products to address environmental concerns related to product disposal, GHG emissions, pollution, fuel usage, waste management and recycling (Grant, Trautrim, & Wong, 2013).

The Green Logistics Institute (2011) defined green logistics as:

The integrated management of all the activities required to move products through the supply chain. For a typical product this supply chain extends from a raw material source through the production and distribution system to the point of consumption and the associated reverse logistics. The logistical activities comprise freight transport, storage, inventory management, materials handling and all the related information processing. (2011, para.1)

Reverse logistics (closing the supply chain loop) is considered an integral part of the green logistics strategy that can help environmental conservation and save landfill space

by reclamation, reuse and recycling measures (Kulwiec, 2008; Sarkis, Helms, et al., 2010). Rogers and Tibben-Lembke (1999) defined reverse logistics as:

The process of planning, implementing, and controlling the efficient, cost effective flow of raw materials, in-process inventory, finished goods, and related information from the point of consumption to the point of origin for the purpose of recapturing or creating value or proper disposal. (p. 2)

Therefore, the concept of reverse logistics recognizes end-of-product life cycle management (Varma, Wadhwa, & Deshmukh, 2006). The main objective of this approach is resources reduction by recycling, remanufacturing and reuse, and waste and emissions minimization thorough the end-of-product life management. Accordingly, those companies which adopt green logistics practices, including reverse logistics, can reduce costs, achieve better environmental profile, compliance with regulatory requirements and attain competitive advantage in the marketplace (Dey et al., 2011; Nikolaou, Evangelinos, & Allan, 2011; Oberhofer & Dieplinger, 2014).

2.5. Conclusion

This chapter has reviewed the extant literature in two areas, sustainability and SCM, and the integration between these two fields of inquiries – the SSCM concept. Given the growing significance of the SSCM approach in both conception and practice, the SSCM discipline is still relatively little explored, and fragmented in its early stages of development. The review of literature suggested a dearth of empirical research which examines SSCM in an integrated manner, and a large of proportion of SSCM

investigated in a stand-alone manner. Particularly, there is a paucity of research on why and how companies are implementing SSCM in the New Zealand business context.

The review of literature identified key gaps. First, although motivators and barriers for sustainability and SCM are well explored in the extant literature, there is little conceptual and empirical understanding about what factors motivate and inhibit companies to adopt SSCM strategy. Second, the review highlighted that the social dimension of sustainability in SCM is acknowledged, but receives less emphasis than expected environmental sustainability aspects in SCM. Also, there is little known in the New Zealand business context about which voluntary SSCG mechanisms are employed by companies to enhance their SSCM performance. Third, the literature suggested that the GSCM concept is rather well explored in the global context but hardly at all in the New Zealand business context. The goal of this study is, therefore, to fill these gaps in the literature and make empirical and theoretical contributions to the SSCM discipline by providing new insights using case companies from the New Zealand business context. Thus, having reviewed the theoretical background of the research problem, the next chapter explains the conceptual framework and methodology used in this study.

CHAPTER 3

Research Methodology

3.1 Introduction

This chapter presents the theoretical framework, research philosophy, strategy, design and data analysis process adopted for this study (see figure 3.1). The primary objective of this study was to investigate why and how companies integrate sustainability practices into their supply chain management (SCM). This study explores a multidisciplinary field – sustainable supply chain management (SSCM) – which is a relatively new research discipline, with a dearth of empirical research concerning why and how companies embed sustainability in their SCM operations. Furthermore, it is pertinent to stress that very little attention has been given to SSCM research in the New Zealand business context.

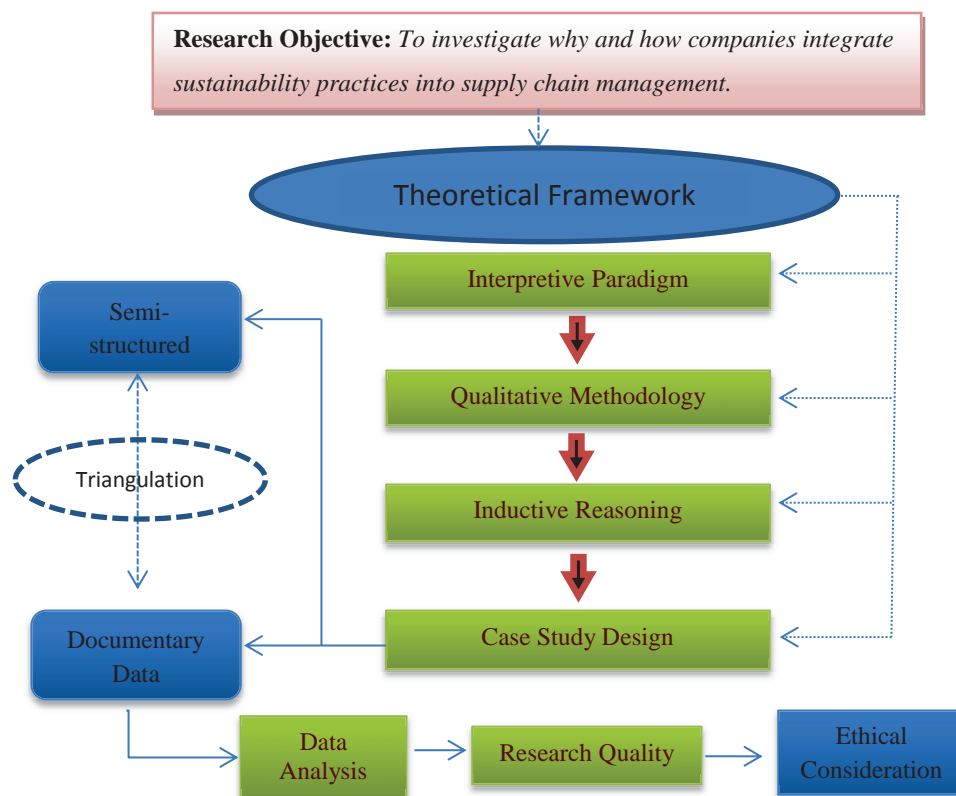


Figure 3.1: Research process

The exploratory nature of this research makes it appropriate to use an interpretive qualitative research methodology. A multiple case study design was adopted as a framework for data collection. Sample companies were purposefully recruited based on their sustainability profiles, and semi-structured interviews with senior managers were the main source of data collection. This chapter introduces a theoretical framework for this study, which is followed by the discussion of a research paradigm, qualitative methodology and case study design. Then, the criteria for case selection and data collection methods are explained. Finally, issues related to research quality and ethics consideration are presented. The objectives of this chapter are to:

- present a theoretical framework of this study
- introduce and justify the choice of qualitative case research design
- describe the research process followed to conduct this study
- elucidate the data collection and analysis techniques
- explain research quality measures – validity and reliability criteria.

3.2 Theoretical Framework

In this section, the theoretical framework of this study is presented, drawing on the accounts of three perspectives – stakeholder theory, contingency theory and transactional cost economics (TCE) theory – that relate to the implementation of SSCM practices in the corporate sector (see figure 3.2). In particular, these theories were utilized to interpret the empirical findings of this study, and to see how well empirical findings fit with the assumptions and reality proposed by these theories.

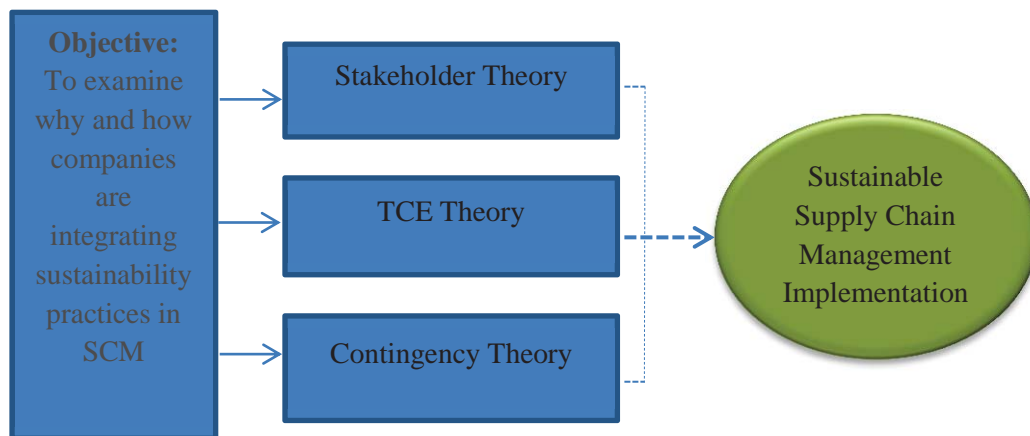


Figure 3.2: Theoretical framework

The theoretical or conceptual framework contains a system that involves key ideas, concepts, definitions, assumptions and theoretical propositions that form the basis of the entire research process (Cavana et al., 2001). According to Miles, Huberman, and Saldana (2013, p. 20), “a conceptual framework explains, either graphically or in narrative form, the main things to be studied – the key factors, constructs or variables – and the presumed relationship among them”. In the same vein, Cavana et al. (2001, p. 77) defined a theoretical framework as “a model of how to make logical sense of the relationships among the several factors that have been identified as important to the problem”.

Miles and Huberman (1994, p. 17) asserted that “any researcher, no matter how unstructured or inductive, comes to field with some orienting ideas”, and these interlinked ideas define, direct, or specify the scope of a research study. Richards (1993) argued that when a researcher aims to provide new insights about a phenomenon, it is impossible to go “theory-free” into the field for collection of empirical data. A prior

knowledge (e.g., literature review and theoretical framework) allows a researcher to have some orientation into the area of inquiry, which leads to an informed empirical data collection. In other words, the conceptual framework enables a researcher to refine, justify and develop the research problem, objectives, questions and the chosen methodology, which is used to investigate the research problem. Against this background, it is important to present the theoretical framework of this study and discuss the key assumptions used to guide the research process, empirical findings and discussion stages of research.

According to Seuring and Muller (2008, p. 1706), “empirical research, as carried out in case studies and survey, needs to build on a stronger theoretical basis. Yet, this should also be seen as an opportunity to develop theory”. Currently the field of SSCM lacks a strong theoretical underpinning and there are few empirical studies that have systematically integrated relevant theories with empirical findings. Several scholars have emphasized the need to exploit multiple theoretical perspectives to understand the concepts of sustainability and SSCM (e.g., Carter & Easton, 2011; Carter & Rogers, 2008; Lozano, Carpenter, & Huisinigh, 2014; Tachizawa & Wong, 2014). Altuntas (2014, p. 95) argued that “the concept of SSCM has a highly interdisciplinary nature and, therefore, there is not a single theory that explores it”. Nevertheless, in very few empirical studies have authors employed multiple theories to expound their research findings. For example, Marco and Paolo (2014) have recently employed contingency theory, strategic alignment perspective and a resource-based view of a firm to examine corporate sustainability approaches and governance mechanisms in SSCM.

Therefore, based on the existing state of SSCM research, it is particularly useful to view SSCM implementation taking into account multiple theoretical perspectives. The

application of multiple theories is important because SSCM is a relatively complex subject representing the interface between two broad disciplines – sustainability and SCM. Accordingly, no single perspective or unified theory is sufficient on its own to potentially explain the complexity involved in the management SSCM approach in the corporate sector (Marco & Paolo, 2014). This is the key reason this study has utilized three theories – stakeholder theory, TCE theory and contingency theory – to understand SSCM implementation. In the following sub-sections, each theoretical perspective and its relation to SSCM implementation is presented in detail.

3.2.1 Stakeholder Theory

This sub-section explores how stakeholder theory can be used to explain the implementation of SSCM strategy in companies. First, stakeholder theory and its key assumptions are outlined. This is followed by a discussion on how stakeholder theory relates to the present study.

The concepts of sustainability and corporate social responsibility (CSR) are driven mainly by increasing stakeholder expectations for the improved ethical, transparent, accountable and responsible role of companies in society (Carter & Easton, 2011; Epstein, 2008; McWilliams & Siegel, 2001; Parmar et al., 2010; Svensson, Wood, & Callaghan, 2010). These expectations are not confined to the intra-organizational activities of companies; rather, stakeholders increasingly require them to take full responsibility for their inter-organizational activities, which include the operations of supply chain partners (Kovacs, 2008; Schmittfeld & Busch, 2015; Wolf, 2014).

Garvare and Johansson (2010) suggested that stakeholder theory is a key framework to study sustainability and other related concepts. Freeman (1984, p. 46) defined a stakeholder as “any group or individual who can affect or is affected by the achievement of an organization’s objectives”. More specifically, the term stakeholder refers to “any identifiable group or individual on which the organization is dependent for its continued survival” (Freeman & Reed, 1983, p. 92). Clarkson (1995) has distinguished stakeholders into two groups – primary and secondary stakeholders. According to Clarkson (1995):

Primary stakeholder groups typically are comprised of shareholders and investors, employees, customers and suppliers, together with what is defined as the public stakeholder group: the government and communities that provide infra-structures and markets, whose laws and regulations must be obeyed, and to whom taxes and other obligations may be due. (p. 106)

Clarkson (1995) claimed that the survival of company depended on the continued satisfaction of primary stakeholders. On the other hand, secondary stakeholders are “those who influence or affect, or are influenced or affected by the corporation, but they are not engaged in transactions with the corporation and are not essential for its survival” (Clarkson, 1995, p. 106). These stakeholder groups include NGOs, the media, environmentalists and special interest groups. Secondary stakeholders hold latent power that shapes public opinion towards corporate actions and performance (Clarkson, 1995; Parmar et al., 2010).

Traditionally, scholars have argued that corporations should have a limited role in the wellbeing of society. It was perceived that the primary responsibility of a company is to safeguard the monetary interests of its stockholders by improving their shareholders' wealth (Friedman, 1970). Conversely, the stakeholder theory holds a wider perspective with regard to the role of a company in society. A company from a stakeholder's perspective is not only responsible to its shareholders, but has a diverse set of responsibilities towards other individuals and stakeholder groups directly or indirectly influenced by the company's actions (Freeman, 1984; Frooman, 1997; Jawahar & McLaughlin, 2001; Mathur & Kenyon, 1997). Thus, proactive stakeholder management has a key role in developing the reputation of a company in the marketplace and society as a whole (Svensson et al., 2010).

Furthermore, a company from a stakeholder theory viewpoint is perceived as a 'corporate citizen' that has a duty of care and obligations towards a wide range of stakeholder groups within a society (Freeman, 1984). The need for this extended responsibility arises from the fact that a business often produces externalities (e.g., negative social or environmental influence) during its production operations that have an impact on internal and external stakeholder groups (Freeman, 1984). For that reason, stakeholders put pressure on a company to reduce its negative externalities and play a positive role that benefits the natural environment and can enhance society (Fiorino & Bhan, 2014). Accordingly, stakeholder theory argues that survival of a company in the long run depends on the degree to which it establishes favourable relationships with stakeholder groups (Donaldson & Preston, 1995).

Donaldson and Preston (1995) characterized stakeholder theory into three types – descriptive theory, normative theory and instrumental stakeholder theory. The philosophical assumptions create differences among these stakeholder theories. However, normative rationality sets a foundation for descriptive and instrumental stakeholder theories (Donaldson & Preston, 1995). The key assumptions of these perspectives are as follows:

- Descriptive stakeholder theory outlines the perceptions of the members of a company about their company mission, objectives and actions regarding meeting the needs of its stakeholders. Essentially, this stakeholder theory “describes (or sometimes explains) the specific corporate characteristics and behaviours regarding stakeholders” (Steurer et al., 2005, p. 267).
- Instrumental stakeholder theory identifies the influence of stakeholder management on a company’s profitability (Donaldson & Preston, 1995). This view holds that a company’s financial performance and competitive advantage depend on how well it establishes a favourable image in society by engaging in activities that create positive social or environmental impacts.
- Normative stakeholder theory postulates that all genuine interests of stakeholders are important (Clarkson, 1995; Freeman & Phillips, 2002). These interests should receive careful management attention regardless of whether fulfilling these interests improves the corporate economic bottom line or not. Therefore, this perspective stresses the need for high moral and ethical propriety in managerial choices that positively influence society and the natural environment (Donaldson & Preston, 1995).

Normative and instrumental stakeholder theories are particularly useful to examine why companies adopt SSCM strategy and what factors influence managerial predisposition to integrate sustainability practices in their SCM (Donaldson & Preston, 1995). According to Carter and Easton (2011, p. 47), “supply chain managers are in a particularly advantageous position to impact – positively or negatively – environmental and social performance, through for example supplier selection and supplier development model and carrier selection, vehicle routing, location decisions, and packaging choices”. Thus, it is important to understand managerial motives propelling them to adopt, and barriers that hinder them from embracing, SSCM-related goals in their companies. Recent studies have employed stakeholder theory to explore the role of sustainability in SCM (e.g., Halldorsson et al., 2009; Hofmann et al., 2014; Morali & Searcy, 2013; Park-Poaps & Rees, 2010; Sarkis, Gonzalez-Torre, et al., 2010; Svensson et al., 2010; Wolf, 2011). This study makes use of stakeholder theory, given the relevance of business stakeholders to investigate why and how companies integrate sustainability practices in SCM.

3.2.2 Transaction Cost Economics Theory

Transaction cost economics (TCE) is the second theory used in this study to view current empirical findings. TCE presents a normative economic perspective (Lockett & Thompson, 2007; Williamson, 1985, 1996), which relates to the idea of an efficient economic organization (Lockett & Thompson, 2007). The TCE perspective supports the notion that a company can improve its economic performance by reducing total costs, including production costs and transaction costs (Lockett & Thompson, 2007). Production costs relate to input costs incurred in the manufacturing operations of a company, including land, labour, raw materials, equipment and machinery. On the other

hand, transaction costs are relatively less transparent and can be categorized into three types (Hobbs, 1996):

- information costs: costs incurred to search relevant buyer, suppliers, and products
- negotiation costs: costs of managing contracts, negotiating deals, paying service fees to brokers, lawyers or other intermediaries
- monitoring cost: costs of monitoring suppliers' behaviour and enforcing the terms of contract.

The key concepts underlining TCE theory are bounded rationality, opportunism, asset specificity and informational asymmetry (Halldorsson, Kotzab, Mikkola, & Skjott-Larsen, 2007; Hobbs, 1996; Williamson, 1999). The notion of bounded rationality proposes that managers intend to take rational decisions but their capacity to do so is often limited because it is logically not possible to evaluate all potential alternatives in a given situation (Hobbs, 1996). Opportunism implies that the parties involved in a transaction sometimes behave opportunistically to exploit the situation for their own self-interest (Halldorsson et al., 2007; Williamson, 1996). Asset specificity relates to a situation “when one partner invested resources which have little or no value in an alternative use” (Hobbs, 1996, p. 17). Finally, business exchanges are often subject to incomplete information; therefore, parties involved in an exchange possess asymmetric information, which causes uncertainty (Hobbs, 1996). Predominantly, the presence of these factors may potentially increase a company's transaction costs and reduce its ability to achieve competitive advantage.

According to Hobbs (1996), rivalry among supply chain partners increases transaction costs. However, collaboration, high-quality information exchange and team work reduce these costs and enable companies to achieve competitive advantage (Lockett & Thompson, 2007). Prior studies have examined TCE theory in relation to SSCM strategy (e.g., Alvarez, Pilbeam, & Wilding, 2010; Brockhaus, Kersten, & Knemeyer, 2013; Carter & Rogers, 2008; Pagell et al., 2010; Sancha et al., 2014). In this study TCE theory is particularly relevant as it explores how case companies manage their supply chain relationships as well as what sorts of governance mechanisms and support tools are being used by sample companies to manage their transactions costs and achieve competitive advantage.

3.2.3 Contingency Theory

Contingency theory is a key theoretical lens used to view and understand organizations (Donaldson, 2001). The contingency perspective evolved during the 1960s, and its seminal contributors include Burns and Stalker (1961), Chandler (1962), Woodward (1965), Fielder (1967) and Lawrence and Lorsch (1967). Later, during the 1970s, Galbraith (1973), Child (1974), Luthans and Stewart (1977) and Miles, Snow, Meyer, and Coleman (1978) advanced contingency perspective. Contrary to the classical management perspective, contingency theory argues there is no ‘one best way’ or ‘universal approach’ for organizational effectiveness but rather improved organizational performance results from aligning or creating a fit between characteristics of an organization with its contextual conditions or contingencies (Burns & Stalker, 1961; Donaldson, 2001; Lawrence & Lorsch, 1967).

Furthermore, contingency theory suggests that no single organizational strategy or structure is essentially better than other forms of strategy or organizational structure (Donaldson, 2001; Luthans & Stewart, 1977). However, since organizations operate in different environments and perform different sets of activities, organizational performance is a function of contingency variables such as the environment, structure, strategy, organizational size and technology (Burns & Stalker, 1961; Chandler, 1962; Donaldson, 2001; Thompson, 1967; Woodward, 1965). Organizations adapt over time to attain a fit between contingencies so that organizational performance can be maintained.

In the past, contingency theory has been adopted to study topics such as leadership, human resources management, strategic decision making and organizational structure (Donaldson, 2001; Lawrence & Lorsch, 1967; Williams, 2008). However, contingency theory has been recently used by some scholars in the SSCM discipline (e.g., García-Rodríguez, Castilla-Gutiérrez, & Bustos-Flores, 2013; Walker & Jones, 2012). A distinction can be made between internal and external contingency variables (Luthans & Stewart, 1977) that impact the adoption of SSCM strategy. Internal organizational variables include management systems (García-Rodríguez et al., 2013), sustainability awareness of top and middle level management, top management support, a company's measurement and reward systems, a company's size, employee involvement, product characteristics and resources can influence SSCM implementation (e.g., García-Rodríguez et al., 2013; Sousa & Voss, 2008; Walker et al., 2008).

Conversely, external environmental variables also impact the adoption of SSCM strategy, including economic conditions (Campbell, 2007), government regulations,

market, industry type, level of competition within industry, a company's reputation and image, customer preferences, supplier awareness and capability and stakeholder pressure (e.g., Ageron et al., 2011; Hoejmose & Adrien-Kirby, 2012; Marco & Paolo, 2014; Tachizawa & Wong, 2014; Tate et al., 2012; Zhu & Sarkis, 2007). However, its application in SSCM is relatively scarce and only a few studies have integrated the contingency perspective to scrutinize the efficacy of SSCM strategy in relation to contingency variables that influence the choice of an appropriate strategy within organizations.

According to Halldorsson et al., (2009, p. 92):

A contingency approach is the most prosperous way, assuming that there are differences between industries, products, and countries as regards to the most appropriate way to handle sustainability in a supply chain. Further research is therefore necessary to determine the contextual factors for a sustainable supply chain strategy. (p. 92)

Against this background, contingency theory can be a very useful theoretical lens to view SSCM issues, predominantly in areas where SSCM discipline is relatively less developed. This perspective is relevant to the objective of the present study that explores why and how companies integrate sustainability practices into SCM. It is assumed in this study that the SSCM strategy of a company is contingent on the context and circumstances in which it operates. Accordingly, contingency theory can be particularly useful in illustrating why companies adopt SSCM practices and what motivates or hinders their efforts towards embracing SSCM strategy. Furthermore, it

can also be relevant in exploring how companies implement SSCM strategy, and what types of strategic options and tools are available for them to execute this strategy given their internal and external contingencies that encourage or inhibit them from adopting an SSCM strategy.

3.3 Research Philosophy

The research paradigm (philosophy) establishes a broad domain or a “broad set of beliefs that guides actions” (Guba, 1990, p. 17), in which researchers position their research. The research paradigm contains important assumptions in which you view the world around you and so has great significance in the selection of appropriate research methodology, including research strategy and data collection methods (Saunders & Lewis, 2012). Two main research paradigms or philosophies are applied in social sciences research: positivism and interpretivism (Collis & Hussey, 2003). A positivist paradigm is concerned with identifying universal laws to predict human behaviours by applying rigorous and precise natural science techniques to examine a social reality (Bryman & Bell, 2007). It takes an objective stance to study a social phenomenon with minimal regard to the subjective state of an individual(s) or an actor(s) being studied. According to Collis and Hussey (2003), “it [positivism] is based on the assumption that social reality is independent of us and exists regardless of whether we are aware of it”.

On the other hand, an interpretive paradigm follows an empathetic (humanistic) approach and takes a subjective view of the social reality experienced by social actors (Bryman & Bell, 2007; Cavana et al., 2001; Collis & Hussey, 2003; Neuman, 2006). Neuman (2003, p. 77) defines interpretive research as “the systematic analysis of socially meaningful action through the direct detailed observation of people in natural settings in order to arrive at understanding and interpretations of how people create and

maintain their social worlds”. In contrast to the measurement of social phenomena, an interpretive paradigm argues for developing a profound understanding of human behaviour or the world around them from an individual’s own frame of reference (Bryman & Bell, 2007; Collis & Hussey, 2003). Social sciences researchers argue that “subject matter of social sciences – people and their institutions – is fundamentally different from that of natural sciences” (Bryman & Bell, 2007, p. 17); therefore, an understanding of human behaviour merits a different research logic and procedure, which acknowledge that reality is socially constructed (Cavana et al., 2001).

This study was positioned within an interpretive paradigm because the understanding of SSCM implementation in companies involves the exploration and interpretation of subjective managerial perceptions of reality. In particular, the objective of this study was to examine why and how companies implement sustainability practices in their SCM, which requires a reflective understanding of managers’ experiences, perceptions, interpretations and idiosyncratic judgment of their company’s SSCM strategy. For example, exploring what perceptions managers hold regarding factors that motivate or impede SSCM implementation involves subjectivity on the part of managerial judgment of how they perceive those factors.

Accordingly, the reality can only be viewed from a managerial point of view, which naturally implies the involvement of their subjective judgments, and interpretations by which they are making sense of the world they are experiencing. Each company operates in a unique context and thus is often influenced by a range of contextual factors while implementing its sustainability strategies. In this regard, “the interpretive research presents a rich and complex description of how people think, react and feel under certain

contextually specific situations” (Cavana et al., 2001, p. 9). Therefore, the selection of a suitable sustainability strategy is a function of how managers perceive these contingency variables and how they respond to them according to their judgment and intuition. Moreover, the research paradigm can be viewed as an overarching umbrella that guides and influences the choice of an appropriate research strategy; this is discussed in the following section.

3.4 Research Strategy

The objective of this study was to examine why and how companies integrate sustainability practices in their SCM. As indicated earlier (see chapters 1 and 2), there is a paucity of research on SSCM and a theoretical foundation of SSCM discipline is evolving; therefore the exploratory nature of this research (seeking new insights) (Cavana et al., 2001; Saunders & Lewis, 2012) makes it apposite to use qualitative research strategy. Essentially, qualitative strategy is well aligned with the principles of the interpretive paradigm, which are based on the premise that “humans are complex, somewhat unpredictable beings that individual differences and idiosyncratic needs override any notion of universal laws of human behavior” (Cavana et al., 2001, p. 34). In other words, “qualitative research involves an interpretive, naturalist approach to the world” (Denzin & Lincoln, 2005, p. 3), which requires the researcher to develop a profound understanding of how people view the world around them. This stance of qualitative strategy is consistent with the central assumption of the interpretive paradigm in which this study is positioned. According to Denzin and Lincoln (2005):

Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational

constraints that shape the inquiry. Such researchers emphasize the value-laden nature of inquiry. They seek answer to questions that stress how social experience is created and given meaning. (p. 10)

Similarly, Gummesson (2006, p. 167) suggested that a qualitative strategy is desirable when research involves “complexity, context and persona and their multitude of factors, relationships and fuzzy phenomena”. Under such conditions, traditional statistical research tools and methods become insufficient to cater for the complexity involved to manage and explore the intricate relationships between these factors. A review of the extant SSCM literature revealed that the integration of sustainability practices into SCM is a complex subject. It involves numerous complex relationships (e.g., between intra- and inter- organizational supply chain partners), multiple contexts (e.g., extended global supply chains) and interlinked concepts that can be better understood by the application of a qualitative research strategy. In the same vein, Zalan and Lewis (2004, p. 512) argued that “whenever a holistic, dynamic and contextual explanation of the phenomenon is required, qualitative methods would be most appropriate methodological choice”. These arguments reinforce the need for adoption of a qualitative strategy in this study.

3.4.1 Research Approach – Inductive Reasoning

Inductive and deductive reasoning are two main approaches used in social sciences research (Bryman & Bell, 2007; Cavana et al., 2001; Myers, 2013; Saunders & Lewis, 2012). Deductive reasoning is used in quantitative research inquiries (Farquhar, 2012). It is a “top-down” structured approach that starts with a general theory about the research topic, which is operationalized into hypotheses or theoretical propositions.

These hypotheses are then tested using empirical observations to confirm, reject or improve a theory (Cavana et al., 2001; Farquhar, 2012; Myers, 2013). For that reason, deductive reasoning is also labeled as “moving from the general to the particular” (Collis & Hussey, 2014, p. 7). Therefore, deductive reasoning is considered to parallel the traditions of the positivist or natural sciences paradigm and quantitative research strategy (David & Sutton, 2011), which are concerned with identifying universal laws to predict human behaviours (Bryman & Bell, 2007) by applying a theory-testing approach (Farquhar, 2012).

Conversely, inductive reasoning is based on the exploration of research field (David & Sutton, 2011). Induction involves a theory building process, which begins with the observation of empirical reality and moves on towards generalizations about the phenomenon under consideration (Bryman & Bell, 2007; Collis & Hussey, 2014; Wilson, 2010). Inductive logic is congruent with interpretive paradigm and qualitative research traditions, which focus on theory development rather than theory testing (Bryman & Bell, 2007; Saunders, Lewis, & Thornhill, 2011; Wilson, 2010). Accordingly, an inductive approach was well suited to this study because the objective of this study was to develop a SSCM theory. Table 3.1 below summarizes the key differences between the inductive and deductive research approaches.

Deduction emphasis	Induction emphasis
<ul style="list-style-type: none"> • Scientific principles • Moving from theory to data • The need to explain casual relationships between variables • The collection of quantitative data • The application of controls to ensure validity of data • The operationalization of concepts to ensure clarity of definitions • A highly structured approach • Researcher independence of what is being researched • The necessity to select samples of sufficient size in order to generalize conclusions. 	<ul style="list-style-type: none"> • Gaining an understanding of the meaning humans attach to events • A close understanding of the research context • The collection of qualitative data • A more flexible structure to permit changes of research emphasis as the research progresses • A realization that the researcher is part of the research process • Less concern with the need to generalize.

Source: Saunders, Lewis, & Thornhill (2011, p. 127)

Table 3.1: Major differences between deductive and inductive approaches to research

3.5 Case Study Design

In this study, an exploratory case study design was followed as a framework for the data collection and analysis. Yin (2014, p. 16) defined case study as “an empirical inquiry that:

- Investigates a contemporary phenomenon (the “case”) in depth and with its real life context, especially when
- The boundaries between phenomenon and context are not clearly evident”.

A case study design is a widely used and well-recognized research design for conducting qualitative research studies (Stake, 2003, 2005; Yin, 2014). Thomas (2011, p. ix) argued that “the case study provides the most vivid, the most inspirational analysis that an inquiry can offer”. The case study design “focuses on understanding the dynamics present within single settings” (Eisenhardt, 1989, p. 534), and is a particularly suitable approach when the research seeks to answer ‘why’ and ‘how’ research questions (Yin, 2014). According to Collis and Hussey (2003), case studies are often labelled as exploratory research, because they are generally performed in situations where there is a paucity of knowledge or lack of theoretical background. They further asserted that this design is useful in obtaining in-depth knowledge and provide new insights about an evolving phenomenon. Eisenhardt (1989) suggested that a case study design is used to accomplish three research goals – developing theory, providing descriptions or testing theory. However, as there is a paucity of empirical research on SSCM in the extant body of knowledge, an exploratory case study design was adopted for the present study.

Gummesson (2000) emphasized that the case study design is a valuable approach in the applied social sciences, where research studies are often designed to provide practical tools or recommendations to practitioners as to how they should improve their business performance. Accordingly, this design is aligned with the objective of this study that seeks to answer why and how companies integrate sustainability practices into SCM.

Also, this study has profound implications for modern practitioners as to why, how and what type of SSCM strategies and workable practices they need to adopt that are consistent with their companies' sustainability models and enable them to improve their competitive advantage.

Stake (2005) proposed two main types of case study design – intrinsic and instrumental. An intrinsic case study is a suitable research design when the researcher is interested in a particular case and seeks an in-depth understanding of that case. Alternatively, an instrumental case study is used when “a particular case is examined mainly to provide insight into an issue or to redraw a generalization” (Stake, 2005, p. 445). That is, the case itself is of secondary importance but it enables the researcher to understand the issue or phenomenon under scrutiny (Stake, 2005). Nevertheless, “the case still is looked at in depth, its context scrutinized and its ordinary activities detailed, but all because this helps us pursue the external interest” (Stake, 2005, p. 445). This method can be applied when a study explores a key issue or phenomenon in a particular setting – which makes it a single instrumental case study. However, when an instrumental case study design is extended to several cases, it takes the form of a multiple case study or collective case study design (Stake, 2005).

In the present study, a multiple (collective) case study was used as it aligns well to the study objective – to explore why and how companies integrate sustainability practices in their SCM. Essentially, an industry or company is not the focus of this study but rather the prime concern is to explore of the current state of SSCM strategy implementation. As such, based on the study objective and research context, a multiple case study design was desirable as it enables the accomplishment of compelling research findings.

Furthermore, the evidence from multiple cases is generally regarded as more robust and convincing than findings of a single case study (Eisenhardt & Graebner, 2007; Yin, 2009, 2014).

3.5.1 The Application of Case Study Design in SSCM Research

Eisenhardt (1989, p. 532) claimed that “this research approach [case study] is especially appropriate in new topic areas. The resultant theory is often novel, testable, and empirically valid”. A number of past studies have adopted a case study design that explored the role of sustainability in supply chains and other related research avenues. In particular, case study research is becoming widely accepted and a frequently used research design for SSCM theory development in recent years (e.g., Ciliberti et al., 2008; Kovacs, 2008; Pagell & Wu, 2009; Pagell et al., 2010; Schnitffeld & Busch, 2015; Seuring, 2008; Wolf, 2011). Pagell and Wu (2009) employed 10 cases to determine the elements necessary to extend a model of sustainable supply chains. Wolf (2011) used four cases from the German manufacturing industry to provide a model of SSCM integration. Consistent with the contemporary research tradition in the SSCM discipline, this study also used a multiple case study design because of its key advantages over comparable research designs such as surveys. First, multiple case study design provides a holistic and rich picture and an in-depth description of phenomenon in a real life context (Simons, 2009; Thomas, 2011; Yin, 2014). Second, the use of case study was particularly suitable for this study because currently there is a dearth of empirical research on SSCM in the New Zealand business context.

3.5.2 Case Selection – Sampling Procedure

Developing a coherent sampling frame and having a clear strategy for sample selection has an important role in case study research (Miles et al., 2013). The sampling frame refers to the group of relevant individuals, events, organizations or departments selected for the purpose of research (Bryman & Bell, 2007). According to Miles and Huberman (1994), sampling is a critical decision in qualitative research as it defines the parameters and scope of the data collection. The researcher asks key questions of respondents, such as “whom to look at or talk with, where, when, about what, and why” (Miles & Huberman, 1994, p. 27), and these questions have implications for the research contribution and the level of confidence of research findings. Thus, decisions concerning the identification of relevant research participants and the selection of research settings have a profound impact on the research findings.

Sampling plan decisions relate to identifying and selecting an appropriate unit of analysis (Cavana et al., 2001). The selection of an appropriate unit of analysis in the case study design is vital (Cavana et al., 2001; Yin, 2014). The unit of analysis in research can be an individual person, groups, organization(s), dyads, programmes, specific events, decisions or a particular culture (Cavana et al., 2001; Yin, 2014), which is a key aspect of research scrutiny. However, the choice of a suitable unit of analysis is guided by the research objective and research questions. Accordingly, ‘SSCM strategy’ was chosen as the primary unit of analysis for this study. This is consistent with the study’s objective, which is to investigate why and how companies integrate sustainability practices into their SCM.

Miles and Huberman (1994) argued that the careful analysis of the research objective, questions and the conceptual framework of the study play a vital role in crafting an explicit sampling frame. According to Miles and Huberman (1994, p. 29), “choices of informants, episodes, and interactions are being driven by a conceptual question, not by a concern for representativeness”. In a same vein, Eisenhardt (1989, p. 537) suggested that “random sampling is neither necessary, nor preferable” in case study research. In line with the qualitative research traditions a purposeful sampling method was adopted for case selection in this research.

A purposive sampling method requires deliberate selection of research participants or cases. A careful selection of cases with regard to their specific qualities or characteristics enables researchers to better comprehend the research problem and answer the research questions, which in turn leads to development of coherent theory (Creswell, 2009; Eisenhardt & Graebner, 2007). Stake (2005) proposed that a reflective understanding of phenomenon depends on how well a researcher chooses a sample case(s) for study. According to Miles and Huberman (1994), the choice of cases in multiple case study research is made on conceptual grounds, and a purposive sample selection contributes to a better understanding of knowledge. In the same vein, Bryman and Bell (2007) argued that a purposeful selection of research participants is more likely to contribute to theoretical understanding of the phenomenon. In particular, Miles and Huberman (1994, p. 30) suggested four sampling parameters for study participants and case selection: “the settings (where the research will take place), the actors (who will be observed or interviewed), the events (what the actors will be observed or interviewed doing), and the process (the evolving nature of events undertaken by the actors within the setting)”. These criteria were applied in the selection of cases in the present study.

3.5.3 Multi-industry Design

This study involves an exploration of SSCM implementation using the sample of 23 New Zealand-based companies. A multi-industry design was adopted and those companies were selected for data collection, which were known for their sustainability commitment. Given an exploratory nature of this study, a multi-industry design was preferred over a single industry design because it enables to capture diverse set of perspectives within different business sectors. This design was suitable for the present study because SSCM implementation in companies involves a wide range of practices and strategies, and no single company can indulge or excel in all SSCM strategy dimensions. Therefore, it was pertinent to identify how well a particular company was implementing its SSCM expertise compared to its competitors.

The selected sample companies were considered leaders in sustainability within their industry sectors (see table 3.2). The recruited companies were members of New Zealand-based sustainability advocacy forums – the Sustainable Business Council (SBC) and the Sustainable Business Network (SBN), which provided their members' profiles. These forums provide assistance to their member businesses to become more sustainable, and with networking opportunities (e.g., stakeholder dialogues), to share best practice and promote innovation in sustainability.

A fair majority of sample companies were also well-recognized by other regional, national or international sustainability conventions, including FTSE4Good Index (Ethical Investment Stock Index Series), Dow Jones Sustainability Index (DJSI), Sustainability 60 New Zealand and Energy Efficiency and Conservation Authority (EECA) New Zealand. Only four of the 23 companies were small and medium

enterprises (SMEs). The SMEs were included in the sample as they were considered exemplars in demonstrating superior sustainability performance and had achieved various sustainability awards. The sample was dominated by large companies because generally large businesses have relatively more resources to execute sustainability, are particularly focused by their various stakeholder groups and are subject to public scrutiny in terms of enhancing their sustainability performance. As a result of these pressures they are more likely to be involved in sustainability and adopting best sustainability practice. Of the 23 companies, four were public sector organizations. Table 3.2 below summarizes the case profiles.

3.5.4 Data Collection Methods

Data collection methods involve techniques and procedures used for collecting research data (Bryman & Bell, 2007). In this study, both primary and secondary data collection methods were utilized to generate multiple sources of evidence (Yin, 2014). Primary data refers to new data collected directly by the researcher from original sources through, for example, interviews, participants' observations, surveys, focus groups and experiments (Collis & Hussey, 2014; Yin, 2014). On the other hand, secondary data can be collected from existing available sources, including companies' archival records, publications and publically available databases (Collis & Hussey, 2014).

Selection Criteria	Companies											
	A	B	C	D	E	F	G	H	I	J	K	L
Number of employees	>8500	>700	>3,000	>5000	>7400	>300	>8,000	>15	>800	>11,000	>300	>760
Revenues - FY 2012-13 (NZ \$ million)	1,687.8	76.6	3,832	3,716	5,957	2,989	1591	-	280	4,483	448	1,057
Public/Private	Public	Private	Private	Private	Private	Private	Private	Private	Private	Public	Public	Private
Size	Large	Large	Large	Large	Large	Large	Large	SME	Large	Large	Large	Large
Industry/sector	Postal Services	Insurance	Food Retail	Banking	Banking	Oil and Gas	General Merchandise Retail	Carpet retail & Distribution	Food Manufacturer	Air and Space Transport	Transport Support Services	Telecommunication Services
Sustainability awards/ recognition and international benchmarking	- EECA, Sustainable 60 award (2013) - Eco-award - London Benchmarking Group	- NZ Insurance award 2012	- Environment sustainability award (Lincoln) - SBN award 2013 - NZ packaging award 2012 - Greenpeace tuna sustainability award 2012	- DJSI - FTSE4Good Index	- London Benchmarking Group - DJSI	N/A	- FTSE4Good Index - Carbon Discloser Project	- NZ government product stewardship award	N/A	- World airline award - Global sustainable tourism award	- DJSI - EECA award - Sustainable 60 award (2014), for Energy Conservation - FTSE4Good Index	- Environmental Green Ribbon Award - FTSE4Good Index - Carbon Discloser Project
Green certification	CEMARS	N/A	N/A	- Carbon Neutral	- Carbon Neutral	N/A	CEMARS	-Carbon Zero Certified -Green Tag	-Global Food Safety Initiative (GFSI) Certified	ISO 14001	-CEMARS -Earthcheck certified	N/A
Environmental & Sustainability reporting/ disclosure	Yes (International Integrated Reporting Framework)	Yes (website only)	Yes (website and case studies only)	Yes (GRI Standard)	Yes (GRI Standard)	Yes (GRI Standard)	Yes (GRI Standard)	Yes (website and case studies)	Yes (website and case studies)	Yes (website and case studies only)	Yes (website and case studies)	Yes (Website)
Sustainability membership	-SBC -SBN -Bioenergy association NZ	-SBC -SBN -UNEP's PSI signatory	- SBN	- SBC - SBN	-UNEP finance initiative	- SBC - SBN	- SBC - SBN	- SBC - SBN - NZ Green Building Council	- RSPO	- Star alliance member - SBC	- SBC	- SBN

(1) EECA – Energy Efficiency and Conservation Authority, New Zealand (2) CEMARS – Certified Emissions Measurement and Reduction Scheme, NZ (3) SBC – Sustainable Business Council, New Zealand (4) SBN – Sustainable Business Network, New Zealand (5) GRI – Global Reporting Initiative (6) UNEP – United Nations Environment Program (7) DJSI – Dow Jones Sustainability Index (8) ISO – International Organization for Standardization (9) FTSE4Good Index – Ethical Investment Stock Index Series

Table 3.2: Case profiles (continued...)

Selection Criteria	Companies													
	M	N	O	P	Q	R	S	T	U	V	W			
Number of employees	>17,000	>3,500	>4,100	>1,000	>52	>252	>70	>1930	>4600	>500	>280			
Revenues - FY 2012-13 (NZ \$ million)	18,643	1,210	727	790	4.18	111	-	1,501	2,012	-	1561			
Public/Private	Private	Private	Public	Private	Private	Private	Private	Private	Private	Private	Private			
Size	Large	Large	Large	Large	SME	Large	SME	Large	Large	Large	Large			
Industry/sector	Dairy Product Manufacturer	Insurance	Rail Transport	Banking	Laundry Solutions	IT Sale and Services	Printing Solutions	Telecommunications	Banking	Plastic Packaging Manufacturer	Agriculture Production			
Sustainability awards/recognition and international benchmarking	- EECA award 2006 - EECA award 2007 - Environmental packaging award	- DJSI - FTSE4Good Index - Carbon Discloser Project - Sustainable 60 award (2009)	- Enviro Silver Award 2013	- SBN award 2009 - SBN award 2009	- SBN award 2009 - Green Ribbon Award 2013 - Sustainable 60 award (2012)	- Energy star award - SBN award	- SBN award 2013 - Sustainability 60 award 2011 - Mega efficiency award	- DJSI - FTSE4Good Index - Carbon Discloser Project - Sustainable 60 award (2012) - SBN award 2011 - ECA award	- Fonterra vendor award 2012 - Plastic industry design award 2014	- GLOBAL-GAP - Bio-Gro NZ (organic certification)				
Green certification	ISO 14001	- Carbon Neutral	- Enviro-Mark NZ (pilot scheme)	N/A	CarbonZero Certified	- ISO 14001 - Environmental choice (Eco label) - Energy star - CarbonZero	- ISO 14001 - Enviro-Mark - CarbonZero	N/A	CEMARS	- Enviro-Mark NZ	- GLOBAL-GAP - Bio-Gro NZ (organic certification)			
Environmental & Sustainability reporting/disclosure	Yes (website, reports and case studies)	Yes (GRI Standard)	Yes (website and case studies)	Yes (website and case studies)	Yes (website and case studies)	Yes (GRI standard)	Yes (website and case studies)	Yes (GRI Standard)	Yes (GRI Standard)	Yes (website and case studies)	N/A			
Sustainability membership	- SBC - SBN - Sustainable agriculture initiative (SAI)	- SBC - SBN - UNEP's PSI signatory	- SBN - SBC	- SBN	- SBC	- SBC - SBN	- SBN	- SBC	- SBC - SBN	- NZ packaging council	N/A			

(1) EECA – Energy Efficiency and Conservation Authority, New Zealand (2) CEMARS – Certified Emissions Measurement and Reduction Scheme, NZ (3) SBC – Sustainable Business Council, New Zealand (4) SBN – Sustainable Business Network, New Zealand (5) GRI – Global Reporting Initiative (6) UNEP – United Nations Environment Program (7) DJSI – Dow Jones Sustainability Index (8) ISO – International Organization for Standardization (9) FTSE4Good Index – Ethical Investment Stock Index Series

Table 3.2: Case profiles

Semi-structured Interviews

Interviews are most commonly used method for primary data collection in qualitative case study research (Farquhar, 2012; Hancock & Algozzine, 2006; Yin, 2014). Accordingly, in the present study interviews were used as a preferred approach for primary data collection in order to investigate managerial views of SSCM implementation in companies. Collis and Hussey (2014, p. 133) defined an interview as “a method for collecting primary data in which a sample of interviewees are asked questions to find out what they think, do or feel”. According to Arksey and Knight (1999, p. 32), “interviewing is a powerful way of helping people to make explicit things that have hitherto been implicit – to articulate their tacit perceptions, feelings and understanding”. Similarly, Gray (2013) argued that the interview is the most logical and appropriate data collection method for exploratory research inquiries. An interview technique is particularly useful for exploratory inquiries because it provides an opportunity to reflect on interviewees’ implicit knowledge, values, beliefs, experiences and attitudes, which may not be achieved using other data collection techniques such as the survey method.

There are two main types of interviews – unstructured interviews and semi-structured interviews (Bryman & Bell, 2007). Semi-structured interviews are particularly well suited to case study research (Hancock & Algozzine, 2006). Accordingly, in the present study semi-structured interviews were conducted with senior sustainability and SCM managers of sample companies (see table 3.3). “Semi-structured interviews are non-standardized” (Gray, 2013, p. 215) and flexible (Collis & Hussey, 2003; Gillham, 2000), and contain a list of questions or specific topics to be covered in an interview guide (see Appendix 1) (Bryman & Bell, 2007). A list of these specific questions or topics

(Bryman & Bell, 2007; Thomas, 2011), stated in an interview guide, permit new themes and concepts to emerge from the data, which substantiate research findings by providing unique insights, novel pathways and interesting contributions (Gray, 2013).

An interview guide follows a prescribed chronological structure for interview questions and topics to be covered during the interviews that promotes focused discussion; however, the scope of the interviews is not restricted to the questions in the interview guide. The purpose is to allow flexibility for the interviewees (Collis & Hussey, 2003), given their varied backgrounds, assorted experience and work-related responsibilities in their companies. The interview guide for this study was developed using an extant review of SSCM literature. The format used was the funnel model (Voss, Tsikriktsis, & Frohlich, 2002), which starts with open and general questions and, as the interview progresses, asks more specific questions. The questions in the interview guide were related to the following themes/topics:

- participants' demographics
- company's general sustainability and SSCM approach
- identification of SSCM implementation motivators and barriers
- sustainable supply chain governance mechanisms/systems
- the role of different SSCM strategies in developing competitive advantage.

Interview probes (follow-up questions) were also used to expand the ongoing discussion, clarify confusion and retrieve quality information from the interviewees to enhance an in-depth understanding of the research topic. To achieve clarity and ease of understanding of the interview questions from the interviewees' perspective, this study

also used a piloting strategy. According to Yin (2014), a piloting strategy helps refine data collection plans, including the contents of data and the procedure followed to collect the data. In this regard, the interview guide was discussed with two experienced academics and one of the interviewees of this study. Constructive feedback enabled the researcher to refine and improve the questions in the interview guide (see Appendix 1). In the piloting process, several interview questions were reworded to improve clarity, a few confusing questions were deleted, and the order of the questions was modified to maintain a flow of questions.

Secondary Data Sources

Secondary data were collected from publically available documents including information available on company websites, published case studies of sample companies, companies' sustainability reports and annual reports. Multiple data sources were used to enhance research quality and rigour (for more detail, see the validity and reliability section) by employing the data triangulation technique (Farquhar, 2012; Yin, 2014). Yin (2009, p. 115) described triangulation as “converging lines of enquiry” that are helpful to cross-validate the credibility of research findings (Farquhar, 2012). Thus, in this regard, the researcher maintained a separate database for record keeping of relevant secondary data sources. This was important, as the records of some companies (e.g., sustainability reports) of the previous five years were examined to cross-check and validate information collected from the semi-structured interviews.

Gaining Access to Companies – Recruitment of Participants

Gaining access to companies and establishing initial contact with research participants was a challenging task in view of organizational constraints (some organizations require

managers to receive formal permission from higher authorities to take part in research), the busy work schedules of managers and other personal commitments. Once relevant companies were identified, the researcher used different techniques for recruiting participants. First, the researcher regularly participated in the Sustainability 60 award judging (Phase 1) committee, representing post-graduate students from Massey University from 2011 to 2014. Engaging with the judging committee and regular participation in the Sustainability 60 award ceremonies provided a unique social networking opportunity where the researcher was able to develop contacts and invite a number of senior managers of well-known New Zealand-based companies to take part in the study. Second, the personal contacts of the researcher's supervisors played a key role in recruiting participants for this study. Third, the social networking forum, LinkedInTM, was utilized to locate potential research participants.

This method of selecting participants has become popular in recent years, and qualitative researchers often use social networking forums to recruit research participants (e.g., Intezari, 2013). LinkedInTM was very helpful to retrieve professional information about participants, such as previous work assignments, experience and areas of expertise. The relevant managers of the selected companies were initially contacted through LinkedInTM directly by sending a 'friend request'. A formal invitation was then sent to those who agreed to participate in the study. A total of 64 formal invitations were sent to senior managers (representing 38 companies) to participate in this study. Those who did not reply to the first email were sent a reminder after two weeks.

Interview Procedure

A total of 23 companies were included in the sample, and 29 interviews were conducted (see table 3.3) with senior managers of companies. The interviews lasted from between approximately 30 to 75 minutes. The average length was 45 minutes. The interviews were conducted in Auckland and Wellington between November 2012 and March 2014. Of the 29 interviews, 8 were conducted via Microsoft Lync™ (telephone), and the remaining interviews were conducted face-to-face in the manager's office or another place suitable to them. Although, it was desirable to perform interviews face-to-face to experience non-verbal cues, including body language and the facial expressions of participants, due to several factors – including managers' personal/official commitments as well as time and cost constraints on the part of the researcher – not all the interviews were conducted face-to-face. All interviews were audio-recorded, except for one case where the participant did not agree to being recorded. It is pertinent to state that some managers initially agreed to participate in the study, but because of personal commitments and other reasons were not interviewed. Two companies (three interviews) were excluded from the sample, due to the limited relevance to this study.

No.	Company	Gender	Role/position	Experience	Reporting relationship
1	A	M	Corporate sustainability manager	1.5 years	Group sustainability manager
2	B	F	Senior sustainability manager	2.5 years	Head of corporate strategy
3	C	M	Sustainability manager	Total 10 years, 3 years in the current role	Head of cooperative operations
4	D	F	Third party governance manager	3.5 years	Head of procurement/sustainability
5	E	M	Environment sustainability manager	3 years	Head of operations
6	F	F	Procurement manager	16 years	Head of business technology and transformation
7	G	M	Manager quality assurance and ethical sourcing	13 years	GM sourcing support
8	H	M	Founder and managing director	18 years	
9	I	M	Group quality and sustainability manager	2.5 years	GM operations
10	J	M,F	(a) Sustainability manager (b) Senior procurement manager	2 years, 10 years	-
11	K	M, M	a) Sustainability manager, (b) Procurement & SC manager	6 years, 2 years	Head of strategy
12	L	F	Corporate sustainability manager	14 years	Head of strategy
13	M	F	General manager sustainable supply chain	Total 9 years, in the current role 5 months	Director of global sustainability and our strategic team
14	N	F	Sustainability manager	3 years	Head of corporate strategy
15	O	M	Corporate sustainability manager	2 years	Communication manager
16	P	F	Procurement manager	4 years	Operational head
17	Q	M	Operations manager	10 years	Owner
18	R	F	Sustainability advisor	12 years	Corporate head office
19	S	F	Chief financial officer and head of sustainability	-	CEO
20	T	F,M	(a)Head of sustainability (b) Supply chain manager	13 years	Head of Strategy, GM supply chain operations
21	U	F	Sustainability advisor	1 year	Senior sustainability manager
22	V	M	Quality, safety and environment manager	8 years, 2 years in the current role	Business unit manager
23	W	M	Principal sustainability advisor	13 years	GM renovation and technical

Table 3.3: Participant profile

3.6 Data Analysis

Data analysis in qualitative research involves a process of preparing, transcribing and organizing data for analysis, followed by synthesizing data (data reduction) into meaningful segments and assigning names to these segments (called the coding of data). Then there is developing themes, patterns or categories by rationally combining codes that represent similar connotations, and finally interpreting and presenting the research findings in the form of figures, charts, tables or a discussion (Creswell, 2012; Marshall & Rossman, 1999; Miles & Huberman, 1994; Wilson, 2010). The purpose of data analysis is to make sense of data by systematically scrutinizing, evaluating, presenting and interpreting the data from different sources so an improved understanding of the research topic can be developed. It is pertinent to stress here, however that, unlike quantitative research which has an agreed set of rules and procedures to analyze data, there is no general consensus among qualitative researchers as to how data should be analyzed (e.g., Bryman & Bell, 2007; Creswell, 2012; Miles & Huberman, 1994; Wilson, 2010). In the same vein, Eisenhardt (1989, p. 539) asserted that data analysis is “both the most difficult and the least codified part of the [case study research] process”.

Scholars have proposed numerous approaches to analyze qualitative data – grounded theory (Strauss & Corbin, 1998), thematic analysis (Guest, MacQueen, & Namey, 2011), analytic induction (Bryman & Bell, 2007) and content analysis (Collis & Hussey, 2014; Gillham, 2000; Schreier, 2012). There exist few analytic differences by which these data analysis methods can be distinguished (Creswell, 2009); however, Miles and Huberman (1994) suggested that, as a general rule, qualitative data analysis encompasses three basic activities: data reduction, data display and conclusion drawing and verification. Developing on the work of Miles and Huberman (1994), Creswell

(2012) proposed more precise steps that need to be followed to perform data analysis in qualitative research. These steps include:

- Organizing and transcribing the data for analysis: Preparing transcriptions and organizing (sorting and arranging the data) files.
- Exploring the data and developing codes: Reading through the data and writing notes in the margins to record general thoughts about data, and generating initial codes.
- Describing and developing themes (categories): Describing the case and its context (people, place or event), and developing themes from the data to answer the research questions and gaining in-depth understanding of the central phenomenon through description and thematic development.
- Representing, displaying and reporting findings: Presenting profound representation by constructing a narrative passage, tables and figures to explain the findings of the analysis.
- Interpreting findings: Summarizing, discussing and interpreting findings including provision of personal reflections and comparisons to literature (to substantiate or contradict prior research findings) with the aim of contributing to theory and presenting practical implications.

In this study, the researcher followed the general guidelines proposed by Creswell to perform data analysis. In the first stage, interviews were transcribed and a file management system established by which interview and documentary data for each company was separately arranged in file folders. Second, the reading and sorting of transcripts and company documents was carried out to obtain a general sense of

available information. Initially, the researcher went through all transcripts and documents, and substantive statements were underlined. Repetitions, digressions and other irrelevant material were ignored (Gillham, 2000). Margin notes and abbreviations were used to record and summarize key ideas discussed by participants around the research problem. Beginning with a detailed analysis, initial code schemes were generated and labels assigned to identify categories and sub-categories. Coding is the process of segmenting and labeling an interview script or other available documentary data sources to develop descriptions and broad themes in the data (Creswell, 2012). According to Strauss (1987, p. 29) “the goal of coding is to fracture the data and rearrange it into categories and that facilitates the comparison of data within and between these categories and that aids in the development of theoretical concepts”.

However, different coding techniques and guidelines are available as to how codes should be developed (e.g., Creswell, 2012; Miles et al., 2013; Strauss & Corbin, 1998; Wilson, 2010). Wilson (2010) proposed two approaches to coding: emergent coding and a priori coding. An emergent coding entails development of categories through critically analyzing the empirical data. Conversely, a priori coding requires identifying categories before data analysis using existing theory. Wilson (2010) argued that a combination of emergent and a priori techniques (hybrid approach) enables the researcher to take advantage of both techniques. On the one hand, a priori coding enables the researcher to specifically look for some predetermined set of codes. On the other hand, an emergent code scheme allows the researcher to develop a new set of codes by systematically evaluating the empirical data. In the present study hybrid coding scheme was utilized to capture the advantages of emergent coding and a priori coding schemes. In this regard, a coding frame was developed using relevant themes deduced from an extant literature

review of SSCM. Marshall and Rossman (1999, p. 152) asserted that “the researcher should use the preliminary research questions and the related literature developed earlier in the proposal to provide guidelines for data analysis. This earlier grounding and planning can be used to suggest several categories that can serve to code the data initially for subsequent analysis”. Conversely, new codes were also generated based on the empirical analysis of data, and this technique helped the researcher to accommodate new and interesting insights in the findings of the study.

For example, for exploration of SSCM barriers previous studies identified various barriers to SSCM implementation. Thus, those barriers which are identified in the literature were coded with same titles such as lack of control over suppliers, cost concerns, lack of government leadership. On the other hand, new codes are also established which were not acknowledged as such in the literature, for example, behavioural/psychological barriers (see chapter 4). Therefore, as the above example shows both priori coding and emergent coding techniques were utilized in this study. However, it is pertinent to mention that a large number of codes were generated from the empirical data.

In the third stage, the researcher performed in-depth exploratory analysis in which concepts and themes (categories) were generated by rationally combining the codes with similar connotations. Coffey and Atkinson (1996) suggested three steps that need to be followed after coding is finalized: (1) retrieve and re-examine coded data, (2) explore codes and categories, and (3) look for patterns and themes. Thus, for the development of themes, the researcher performed two levels of analysis: with-in case analysis and cross-case analysis (Eisenhardt, 1989). According to Eisenhardt (1989, p.

540), the process of within-case analysis “allows the unique patterns of each case to emerge before the investigation push to generalize patterns across cases. In addition, it gives investigation a rich familiarity with each case which, in turn, accelerates cross-case comparison”. However, she also acknowledged that there is no standard format to within-case analysis. Accordingly, the researcher performed a within-case analysis by which motivators and barriers to each company were identified. Similarly, the SSCM practice of each company was examined in its unique context. This process enabled the key case-specific concepts to emerge during data analysis.

At the next level, a cross-case analysis of multiple case studies was performed to develop categories (themes). Cross-case synthesis identifies patterns (Eisenhardt, 1989), by aggregating findings (concepts) across a series of individual case studies (Yin, 2014). Strauss and Corbin (1990, p. 61) defined a category as “a classification of concepts. This classification is discovered when concepts are compared one against another and appear to pertain a similar phenomenon. Thus, the concepts are grouped together under a higher order, more abstract concept called a category”. In the present study, three categories were developed as a result of cross-case analysis of multiple case studies – motivators and barrier to SSCM implementation, sustainable supply chain governance (SSCG) mechanisms and green supply chain management (GSCM). For example, in order to synthesize motivators for and barriers to the SSCM implementation category (this theme is discussed later in chapter 4), the researcher compared the key motivators and barriers to SSCM implementation across case studies. Similar concepts and sub-themes were grouped together to develop an umbrella theme or category. To carry out this process an analysis grid (Gillham, 2000) was used, which helped combine and synthesize concepts representing similar issues.

The fourth stage involved representing, displaying and reporting the empirical findings of this study (Creswell, 2012; Miles & Huberman, 1994). In this regard, the researcher used a number of tables and figures to present the findings. The purpose of manipulating these tables and figures was to summarize the findings in a coherent way and improve their visibility to the reader.

The final stage relates to articulating, interpretation and making sense of the findings of the study. Scholars have used different terms for the interpretation stage, such as “conclusion drawing and verification” (Miles & Huberman, 1994) and “lesson learned” (Lincoln & Guba, 1985). This process is challenging, as the process of interpretation entails linking categories to each other in a coherent manner to formulate a model that encapsulates key ideas into a holistic platform in the form of theory. The resulting theory needs to be critically examined with prior literature to see how contemporary findings promote understanding of the phenomena and how they contribute to the body of knowledge.

According to Creswell (2012), the process of interpretation involves the researcher examining how well study questions were answered, and integrating personal reflection and comparison of current findings with past studies to develop larger meaning about the phenomenon. The objective was to explore whether the findings of the current study confirm or diverge from past literature (Creswell, 2009). In a similar vein, Eisenhardt (1989, p. 544) claimed that “an essential feature of theory building is comparison of the emergent concepts, theory, or hypotheses with the external literature. This involves asking what is this similar to, what does it contradict, and why?”. In line with above-

mentioned suggestions the researcher integrated current findings with past literature in each empirical findings chapter (see chapters 4, 5 and 6). Furthermore, in order to present a more holistic picture (merging the key findings of chapters 4, 5 and 6) about the contribution of the present study, an effort was made in the discussion chapter (see chapter 7) to critically examine how existing findings relate to past studies. Also, guided by the theoretical framework developed (contingency theory, stakeholder theory and TCE theory) in this chapter, the action agendas for corporate reforms are also offered in the discussion chapter.

3.7 Research Quality – Validity and Reliability Criteria

The quality of social science inquiry is determined by assessing the validity and reliability of the research findings. According to Voss, Tsikriktsis and Frohlich (2002, p. 211), “it is particularly important to pay attention to reliability and validity in case study research”. Yin (2009) suggested four criteria to evaluate the quality of case study inquiry: construct validity, internal validity, external validity and reliability. On the other hand, Lincoln and Guba (1985) proposed alternate criteria that apply to naturalistic axioms to gauge the quality of social sciences research: credibility, transferability, dependability and conformability. In this study, the researcher employed the quality criteria proposed by Yin (2009) to examine the quality of case study inquiry because it is frequently used in case study research and is also specifically designed for measuring the quality of case study research. Table 3.4 shows the criteria used in this study to ensure research quality.

Research Quality Criteria	Technique Employed	Research Phases
Construct validity	<ul style="list-style-type: none"> - Use of constructs from previous study (piori coding scheme) - Multiple interviews within a case where applicable - Multiple sources of evidence (data triangulation) - Chain of evidence 	<ul style="list-style-type: none"> - Data collection - Data analysis
Internal validity	<ul style="list-style-type: none"> - Theoretical framework - Pattern matching - Theoretical triangulation 	<ul style="list-style-type: none"> - Case selection - Data collection - Data analysis
External validity	<ul style="list-style-type: none"> - Description of a clear sampling criteria - Multiple cases descriptions using tables - Replication logic 	<ul style="list-style-type: none"> - Case selection - Case analysis
Reliability	<ul style="list-style-type: none"> - Case study protocols - Purposeful sampling (e.g., members of SBC, SBN) - Case study database 	<ul style="list-style-type: none"> - Case selection - Data collection - Data analysis

Table 3.4: Criteria for research quality

According to Maxwell (2005, p. 106), validity “refers to the correctness or credibility of a description, conclusion, explanation, interpretation, or other sort of accounts”. The process of validation ensures the accuracy or credibility of the research outcomes, and therefore it is considered as a key criterion to gauge research quality (Creswell, 2012). Yin (2009) suggested that there are three types of validity which are employed at different phases of case study research: construct validity, internal validity and external validity.

Construct validity refers to “the extent to which the study investigates what it claims to investigate” (Farquhar, 2012, p. 101). According to Yin (2009), construct validity is achieved by utilizing three strategies. First, multiple sources of evidence need to be identified and collected in the data collection phase. Second, a researcher needs to

establish a chain of evidence to show the reader how a researcher has reached or established conclusions. Third, interviewees are asked to review case study drafts, such as transcriptions of interviews.

A number of scholars emphasized the need to employ the triangulation principle in case study research to reinforce construct validity of the findings (e.g., Creswell, 2009; Farquhar, 2012; Leonard-Barton, 1990; Miles & Huberman, 1994; Thomas, 2011). Triangulation refers to “the convergence of data collected from different sources, to determine the consistency of a finding” (Yin, 2014, p. 241). According to Yin (2009), triangulation is a very significant method to strengthen the validity of research findings. Similarly, Flick (2008, p. 42) argued that triangulation of the data enables the researcher “to reach to maximum of theoretical profit from using the same method”. Thus, corroborating evidence from multiple sources can be a very useful tool to shed light on a particular theme or perspective (Creswell, 2012). Consistent with these suggestions, triangulation was performed in this study to overcome issues such as respondent bias (Farquhar, 2012), poor recall and weak articulation (Yin, 2009), by cross checking and validating managers’ claims by documentary data (for details, see secondary data sources section).

Next, to establish a chain of evidence and ensure traceability of research contents, a case study database for this study was developed, which contains interview files and relevant documentary records of case companies. The purpose of using a case study database was to organize case files in case folders so that if required, specific pieces of information could be easily retrieved for external reviewers. Member checking was not performed in this study. The reason for not employing member checking was the busy

schedules of managers; most said they might not be able to review transcripts. Nevertheless, almost all of the managers expressed their desire to be given the overall findings of the study in a report format. Thus, after completion of the study the researcher will provide a summary report to managers of case companies, which will serve the same purpose as accomplishing the construct validity of the research findings.

Internal validity is an important standard to determine a causal relationship in experimental and quasi-experimental research designs as well as explanatory case studies. Yin (2009) argued that the internal validity principle is not directly applicable to descriptive and exploratory research because such research studies do not focus on assessing the causal relationships of variables. Conversely, Yin (2009) asserted that the notion of internal validity in an exploratory or descriptive case study takes a much wider perspective with regard to making inferences about a particular event or phenomenon. Techniques such as pattern matching and explanation building are particularly useful to increase the internal validity of research findings. In the present study pattern matching was employed to enhance the internal validity of findings. Cross-case analysis was employed to achieve pattern matching (Farquhar, 2012). An effort has made to match empirical themes with predicted patterns earlier identified through the literature review. Based on this, the researcher offers personal reflections in the discussion chapter (chapter 7) on how the theoretical findings are comparable with the empirical findings of this study and if not, why.

External validity is defined as “the extent to which the findings from a case study can be analytically generalized to other situations that were not part of the original study” (Yin, 2014, p. 238). Critics of case study design argue that the findings of case study research

cannot be generalized to a larger population (Farquhar, 2012). Conversely, the proponents of case study research claim that the aim of case study inquiry is not to accomplish statistical generalization but rather an analytical generalization (e.g., Leonard-Barton, 1990; Yin, 2009, 2014). Yin (2009, p. 43) asserted that “[the] analogy to samples and universe is incorrect when dealing with case studies”. Accordingly, in this study replication logic was used to develop an external validity. A multiple case study design was adopted, which allows an improved theory developed by employing a replication of similar findings across multiple cases. Leonard-Barton (1990, p. 258) stated that “multiple case studies on a given topic clearly have more external validity, i.e., generalizability, than does a single case”.

The notion of reliability refers to “the consistency and repeatability of the research procedures used in a case study” (Yin, 2014, p. 240). The reliability of case study research can be enhanced using protocols and a case study database (Voss et al., 2002). In the present study, case study protocols were developed to enhance the transparency of the research process. The core of the protocol is the set of interview questions, and in this regard an interview guide was utilized that includes a list of relevant questions and topics covered during the interviews with participants (see Appendix 1). A case study database was also established, which contains interview transcripts, documentary data and field notes.

3.8 Ethical Considerations

Ethical issues arise at different stages of research, and must be diligently and professionally managed by social sciences researchers. Ethical considerations relate to the control of ethical concerns, such as deception of participants, data protection,

informed consent, reciprocity and trust, conflict of interest, harm to participants, invasion of participants' privacy, confidentiality and anonymity. Obtaining an ethics approval is a pivotal requirement for social and natural sciences research studies at Massey University, New Zealand. Any research project at the university that involves human subjects must adhere to the human ethics requirements prescribed in the code of ethical conduct for research. The research project must be also approved by the Massey University Human Ethics Committee (MUHEC).

The potential ethical issues of this study were discussed with supervisors and the chair of the MUHEC to identify and review the research risks associated with this study. Although the study was deemed to be low risk, the researcher applied for a full application to ensure that all ethics requirements – informed consent, harm to participants, invasion of participants' privacy, confidentiality and anonymity – would be dealt with due diligence by the MUHEC before the start of the data collection stage. Accordingly, an ethical approval was obtained (see Appendix 2) and the researcher followed the conditions set by the MUHEC.

Participants were clearly informed about the terms and conditions of their participation in the study. The researcher emailed important information to participants before each interview. These documents included: First, the information sheet (see Appendix 3) that described the terms and conditions (participants' rights, voluntary nature of interviewees' participation, confidentiality of collected information and anonymity of participants) related to taking part in the study and a brief overview of the study. Second, participants were requested to sign a consent form to ensure their voluntary participation in the study and that their concerns and questions would be addressed to

their satisfaction. The consent form also clearly specified the audio recording of the interview (if a participant agreed). Third, an invitation letter (see Appendix 4) was sent to all participants stating how interviewees' participation contributed to the body of knowledge and business practice. Interviewees were also informed in the invitation letter about the approximate time they needed to participate in the study, the guarantee of anonymity, the choice of a suitable venue for conducting an interview and a request to record the interview.

3.9 Conclusion

This chapter discussed two key components of the study – the theoretical framework and research methodology. The first part of chapter proposed that the theoretical framework of this study linked three theoretical perspectives – stakeholder theory, contingency theory and transaction cost economics theory – with the objective of this study, which is to investigate the integration of sustainability practices in SCM. As highlighted in the introduction and literature review chapters, there is a paucity of empirical research in the current body of knowledge that examines SSCM integration in the corporate sector. Moreover, SSCM theory is evolving and there is also a lack of theoretical integration in the SSCM discipline; therefore the first part of this chapter was dedicated to drawing linkages between SSCM and relevant management theories. The aim was to propose a theoretical framework that guides the methodology of this research, specifically data collection and analysis processes, and relates this theoretical framework to the empirical findings in the discussion chapter of this thesis.

The second part of this chapter outlined the research methodology followed in this study. This section was to make explicit the details of the research philosophy, design,

strategy and overall research process, including the data collection and analysis methods used in the study. In particular, the interpretive paradigm was adopted as a research philosophy that provides the study's methodological base. Linked to an interpretive paradigm and the traditions of qualitative research strategy, an exploratory case study design was used as a framework for data collection that enabled the researcher to draw on an appropriate sampling frame for this study. Semi-structured interviews with senior managers were used as the main source of primary data collection. However, qualitative data were triangulated with interview data to elevate research rigour and quality. Data analysis techniques were then discussed in detail; both qualitative and documentary data were analyzed. This is followed by the critical analysis of research quality issues that relate to improving the validity and reliability of this research. Finally, the key aspects of ethical considerations embraced in this study were presented. Building on the suggested theoretical framework and methodology adopted in this research, chapters 4, 5 and 6 discuss and critically examine in detail the key findings of this study.

CHAPTER 4

Sustainable Supply Chain Management:

Motivators and Barriers

4.1 Introduction

This chapter examines the motivators for and barriers to SSCM adoption in New Zealand. A review of SSCM literature suggests there are a range of factors that motivate or impede a company's efforts in the successful implementation of SSCM. However, there is lack of consensus in previous studies concerning the factors which encourage or inhibit companies to adopt SSCM. The objective of this chapter is to empirically investigate the factors that motivate and inhibit companies to effectively implement SSCM. In particular, this chapter seeks to answer two questions:

- What factors motivate companies to implement SSCM?
- What barriers do companies encounter while embracing SSCM?

This chapter is organized into three sub-sections. The first section presents empirical findings relating to the motivators for SSCM implementation. The second section discusses the barriers to SSCM adoption. In the last section of this chapter, the conclusions are presented.

4.2 SSCM Motivators

This section addresses the first question of this thesis, and examines the motivators for the successful implementation of SSCM. In this study, 'SSCM motivators are defined as

internal organization-related factors and external conditions (or drivers) that propel companies to embed SSCM practices into their supply chain'. However, an organization's proactivity towards engagement in the adoption of SSCM practices may be driven by positive reinforcement in the form of improved reputation and profits or coercive pressures such as loss of reputation, customer boycott, and public criticism.

Scholars have categorised SSCM motivators into internal and external motivators that propel companies to adopt SSCM (see chapter 2). Internal factors are organization-specific motivators that can be further categorised into two groups – normative motivators and instrumental motivators. Normative motivations relate to the moral or ethical values of organizational members, which guide them towards promoting conservation of the natural environment and the wellbeing of society. Instrumental motivations are associated with the company's desire to improve its reputation, image and operational efficiency and reduce its costs. Conversely, external factors such as stakeholder pressure, customers' requirements and government regulations may also influence a company's decisions to engage in SSCM.

The empirical findings suggest that internal factors have a dominant role in the successful implementation of SSCM (see table 4.1). Overall, the findings indicate that internal motivators are cited 53 times in total (normative: 23 times and instrumental: 30 times) by managers. In particular, 12 managers indicate that the support of top management is a key factor implementing SSCM, while 11 managers indicate that managerial, value-based orientation is a pre-requisite to SSCM espousal. In the internal instrumental category, cost reduction, operational efficiency and risk management are cited 9, 7 and 6 times respectively by managers.

External motivators for SSCM adoption are cited 34 times by managers (see table 4.1). Within the external motivator category, the prime driver is the sustainability-related expectations of customers cited by 13 participants. This is followed by concern for image and reputation building, which is cited by 11 managers as a reason for SSCM adoption. Managers also reported regulations, public attention and NGO pressure as motivators for SSCM implementation.

Table 4.1: Frequency of SSCM motivators

Motivators	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	Total
Internal Motivators																								
<i>Normative</i>																								
<i>Value-based orientation</i>	✓			✓	✓	✓	✓					✓					✓	✓	✓	✓		✓		11
<i>Top management commitment</i>	✓	✓		✓		✓	✓		✓	✓				✓						✓		✓		12(23)
Instrumental																								
<i>Cost reduction</i>	✓	✓						✓				✓					✓	✓	✓			✓		09
<i>Operational efficiency</i>		✓							✓			✓						✓	✓	✓				07
<i>Risk management</i>	✓		✓				✓		✓		✓										✓			06
<i>Sale increase</i>		✓	✓															✓	✓		✓			04
<i>Long-term orientation/survival</i>				✓		✓						✓		✓										04(30)
External Motivators																								
Instrumental																								
<i>Customer expectation/pressure</i>	✓						✓	✓	✓	✓	✓		✓			✓	✓	✓	✓			✓		13
<i>Corporate reputation</i>	✓	✓			✓		✓							✓		✓	✓	✓	✓	✓				11
<i>Government regulation (N/I)*</i>	✓								✓		✓						✓							04
<i>Public expectation</i>	✓			✓																		✓		03
<i>Employer of choice</i>		✓																						01
<i>NGO pressure</i>			✓						✓															02(34)

*N/I- National/International regulations

4.2.1 Internal Motivators

The findings reveal that several companies in the study are influenced by internal motivating factors. The term internal motivators in this study refers to ‘organization-related factors such as enhanced profit potential, efficiency, risk mitigation, leadership support, or ethical values of organizational members that stimulate a company’s willingness to embrace SSCM practices’. These factors mobilize companies towards the implementation of SSCM. However, it is interesting to note that, overall, managers cited more instrumental motivators than normative motivators.

Normative Motivators

The findings indicate that normative motivators – value-based orientation and top management commitment – are significant factors propelling companies to adopt SSCM. The following quotations support the assertion that managerial values influence them to endorse ethical and moral business practices. As the manager of company A states:

[...] we see sustainability as a non-negotiable part of our business...our chief executive and board believe that it is the right thing to do. We also know that there is an increase in the expectations from our customers and communities that we should be doing the right thing.

A total of 11 managers in the sample believe in promoting the right approach in their companies and among supply chain network partners. For example, in the following comment the manager of company D remarks:

I never like to think of it [profitability] as a reason why you should do it. I think the reason why you should do it is a moral and, you know, sensible one. It's definitely a good thing to be able to bring in when you're having discussions with your supply chain partners to say, look you should do this because it's the right thing to do, but you should also do this because other customers are going to be looking for you to do this in future so it won't just be us.

Likewise, another manager remarks:

[...] we certainly try and do the right thing and we are acutely aware that if we don't get the team on board it's never going to work. [Company Q]

The above comments suggest that managers seem to be influenced by moral and ethical principles, and in some cases the monetary benefits of sustainability or SSCM are of secondary importance. Moreover, such managers follow ethical principles also make efforts to convince their supply chain partners to adopt a similar set of moral standards, given these ethical criteria are becoming a significant issue for the modern business environment.

In a similar vein, some managers pinpoint the sustainability values of their companies and how these values are linked to accomplishing a 'sustainable' New Zealand. The implementation of SSCM in such companies goes beyond achieving monetary advantages, and thus ethical principles override economic rationale. As one manager argues:

I think generally the company took a stand; they discussed what's important to us. We are a New Zealand company and New Zealand is important to us and also the future of New Zealand is important to us...I think it's great to be doing things that mean a bit more if you are looking at something to sustain, something out to the future and also it's great to be on the journey. (Company F)

Another one of the manager states:

We have to make a business case for everything. Whereas we can just decide that we want to do it because it's our gut feel it's the right thing to do without having to put a business case to the Board or the management team. And we tend to run our business that way... sometimes it costs us, but at the end of the day we think it's worthwhile. [Company S]

These comments of managers highlight that the ethical values of top management or the organization's team members have a positive influence on SSCM implementation. This finding is consistent with the previous research which supports that ethical motives (Bansal & Roth, 2000), caring behaviour (Jenkins, 2006; Van Marrewijk, 2003), value-based orientations (Ramus & Oppegaard, 2006) and 'a desire to do the right thing' (Lieb & Lieb, 2010; Sharfman et al., 2009), stimulate companies to embrace sustainability practices. However, in actual business settings it may be difficult to determine whether sustainability practices are directly related to the ethical motives of managers or are driven by other motives such as monetary advantage or stakeholder pressure. Thus, it can be argued that a clear distinction cannot be drawn between normative and

instrumental motivation, as in business practice it would be difficult to segregate these factors.

The findings also reveal that top management has an important role in the introduction and implementation of SSCM. The sustainability values of top leadership, especially the ethical values of the CEO or owner trickle down to his or her direct team members, and through direct team members these aspirations reach other employees, who adapt their behaviour as per the leader's desires, principles or ethical beliefs. The following remarks support the assertion that leadership support is a key factor that motivates companies to implement SSCM practices. As the manager of the company B asserts:

Our CEO is very sustainability focussed. He started to put the foundation in place and promoted the idea of sustainable supply chain [management]. This was not the priority when he joined the organization. He strongly believes that you can't be sustainable if your supply chain isn't sustainable.

Similarly, the managers of company M and company H underscore that the role of the CEO/top management in promoting sustainability strategy is significant:

As a company we want to do the right thing and we're very fortunate that we've got a CEO that is absolutely driving us towards sustainability. (Company M)

There is no doubt at all that it has to come from the top. If the boss is not on board with it or is not driving it, it is not going to happen. (Company H)

In other cases it may be an owner or key shareholder who holds pro-sustainability values that bring a change in the company's culture and the way it operates and manages its sustainability strategy and stakeholder relationships. The following comment of manager reflects this situation:

We're in a fortunate position where our cornerstone shareholder, [name of owner/shareholder] is one of New Zealand's most famous entrepreneurs and philanthropists, and he has taken a personal interest in this area for a long time, and probably in the beginning at least was one of the main drivers of sustainability values in our operations. (Company G)

The above comments by managers illustrate that both the ethical beliefs of organizational members and leadership support may drive companies towards the adoption of SSCM. These comments are in line with earlier studies, which emphasized the importance of leadership support (Ageron et al., 2011; Azapagic, 2003; Chan, 2007; Giunipero et al., 2012; Haake & Seuring, 2009; Walker & Brammer, 2009; Walker & Brammer, 2013; Zhu & Sarkis, 2004) and the managerial desire to do the right thing (Jenkins, 2006; Lieb & Lieb, 2010) while implementing sustainability practices in their intra- and inter-organizational SCM activities. Dey et al. (2011, p. 1251) argued that “top management must become committed. Sustainability begins with top management due to the need for resources and for the fact that sustainability requires a commitment that is firm wide and is not simply restricted to one department or function”.

Instrumental Motivators

Arguments have been raised in support of the ‘business case for sustainability’. Scholars have argued that companies which adopt pro-sustainability practices are often able to reduce business costs and develop operational efficiencies (Green Jr et al., 2012; Rao & Holt, 2005; Zailani et al., 2012; Zhu & Sarkis, 2004). However, there is also a perception among some practitioners that investments in sustainability initiatives may increase the costs of operations and erode a company’s competitiveness (Nidumolu et al., 2009). Thus, this debate is as yet inconclusive, and categorical relationships between sustainability and profitability are yet to be confirmed. Nonetheless, Orsato (2009) claims that contextual conditions such as organizational internal and external environmental variables determine profitability and the sustainability link.

The findings suggest that some case companies (a total of 9 managers) have implemented SSCM in order to achieve cost reductions and operational efficiency. The manager of company M refutes the impression that embracing sustainability increases business costs. The manager argues:

Well for me I think we’re proving one, is that sustainability is perceived to add cost but actually if it’s done well it actually reduces cost and our processing side of our supply chain is very much around yield, productivity and cost and so all of those, sustainability actually adds a positive new story for them.

The manager of company Q supports the view that reducing a company’s carbon footprint reduces the costs to business. The manager states that:

[...] the carbon footprint is made out of costs, and the more we reduce our carbon footprint the more we are reducing our costs...we've reduced our footprint by 29% since we started measuring it. So even if only half of that was costs, that's 15% of costs reduced and but basically our entire footprint is just costs, business costs, so if we can reduce it, then it makes sense.

Some companies have employed SSCM on an ad-hoc basis. Such companies prefer to adopt SSCM if it is able to deliver efficiency or fulfil other business needs such as customer requests. Thus, some companies are discerning in the adoption of SSCM practices. For example, the manager of company W remarks:

The focus of our company is on those sustainable supply chain practices, which will improve cost efficiency and operational performance, and any practices which are required to meet requirements for customers.

The above views of managers indicate that they perceive SSCM positively as it enables their companies to reduce costs and improve operational performance. However, it is interesting to note that managers associated green practices with costs reduction and operational performance, while social practices in the supply chain are not considered an important pre-requisite to cost reductions and operational performance. Prior studies also confirmed that companies integrate sustainability through SCM activities to attain benefits such as cost minimization and to develop operational performance (Green Jr et al., 2012) and competitive advantage (Dauvergne & Lister, 2013).

Although the findings recognize that managers view economic and operational drivers as significant factors in implementing SSCM practices, 6 managers in the sample acknowledge also that their companies have embraced SSCM to mitigate and manage business risk that relates to social and environmental supply chain activities. As the manager of company A comments:

We are quite an iconic New Zealand brand. Our reputation and image is very important to us...it's about being able to hang on an assurance to your customers and your shareholders that the products and services that you are using to develop your own product or service is not going to come back and bite them...and in my perception it's very strongly risk management and a brand protection function in the first instance, and the once you get that right there's definitely room for creating a brand difference.

The manager conceives of SSCM as a resilient risk management approach but also draws attention to the benefit of achieving brand differentiation from implementing SSCM. However, brand differentiation may be accomplished in the long term when SSCM practices are ingrained at the strategic and operational levels within a company as well as when a company is able to ensure its supply chain partners are equally dedicated to managing sustainability issues in their operations. Correspondingly, the sustainability efforts of company C are also initiated in response to growing reputation risks pertaining to sustainability. The manager of company C notes that:

Until 2010 sustainability was not really on the corporate agenda; however due to growth in that area, media publicity and associated great reputational risk, it's

considered that we needed to invest resources in the sustainability and to ultimately look to reduce our risk by reducing the environmental impact...also we have reputational risk associated to our supply chain, if we don't have good standards and monitoring measures to ensure that those standards are enforced.

The above comments of managers recognize that SSCM is promoted in their companies to protect the company's image and reputational risk. Therefore, the findings indicate that the governance of risk is no longer merely perceived as an intra-organizational issue but rather a supply-chain sustainability issue, which makes companies vulnerable to reputational risk (Keating et al., 2008; Roehrich et al., 2014), and negatively impacts performance (Buddress, 2013; Foerstl et al., 2010; Maloni & Brown, 2006; Spekman & Davis, 2004; Tate et al., 2010). It is also argued that "a well-designed risk-oriented supply chain management can put companies in a privileged position to deliver sustainable and reliable long-term benefits to all stakeholders in the value chain" (Teuscher et al., 2006, p. 1).

Some managers also draw attention to the potential sales benefits of SSCM. They suggest that implementation of SSCM practices may potentially have an indirect influence on customer purchase decisions. Proactive sustainability practices can enhance a company's image and reputation among customers (Boch, 2010; Leadbitter & Benguerel, 2014), which may be translated into favourable outcomes, such as increases in sales, good publicity and profitability for the company. The manager of company C describes sustainability and the sales relationship in the following quotation:

One of the areas that we've worked quite a lot in is within our tuna range, our own label...we offer a product that is regarded as probably the most sustainable in the whole marketplace...it [tuna] is caught by the method of holding line. There's less by-catch of albatross or of dolphin, and it's a very selective method so there's very little environmental impact associated with it. We think that's a really good sales point and we would hope that that translates into greater sales.

Long-term strategic orientation may be considered a driver for implementing SSCM strategy. Long-term orientation is described as the propensity for corporate stewardship, aimed at developing long-term relationships with society, including customers, employees, suppliers and the community to reduce risk or develop corporate resources (Breton-Miller & Miller, 2006). Some companies use SSCM to achieve long-term business performance. For example, the following comment of the manager reflects this situation:

As an organization we want to be the kind of bank for New Zealand that will continue to be around for years and years to come...it will be very short term and short-minded of us to think that we can just continue to make lots of profits now and then down the track we stuff our system, whether it be environmental problems or anything...so I think there's definitely a priority on making sure that supply chain sustainability is something that's embedded, and that it is more a thing that's embedded now. (Company D)

4.2.2 External Motivators

External motivators in this study refer to 'external pressures – primarily triggered by stakeholders' social, legal, economic, cultural, and environmental claims – that propel

companies' readiness to address societal expectations through resource allocation, improved stakeholder engagement, provision of sustainable products or services'. The findings reveal that external motivators, managers cited 34 times the 7 types of external SSCM motivators (see table 4.1). Among these external SSCM motivators, customer expectations/pressure, corporate reputation and government regulation are mentioned 13, 11 and 4 times respectively by managers. This indicates that customer expectation/pressure is a significant factor propelling companies to implement SSCM. This is followed by corporate reputation and government regulation. Apart from that, a few managers stated other drivers, such as public expectation, NGO pressure and being an employer of choice, for them to embrace SSCM.

The findings suggest that several managers (13) believe that implementation of SSCM is associated with growing customer expectation/pressure. Thus, customer requirements are perceived as a critical factor that propels most of the case companies to implement SSCM. For example, the manager of company A comments:

We know that our customers expect it and that our stakeholders and communities also expect it of us... We've used sustainability just as part of how we do business.

In a similar vein, the customers of company V expect the company to play a responsible role in society and protect the natural environment. As a result, the company is taking SSCM seriously, especially environmental sustainability in supply chains. As the manager asserts:

[...] our customers expect us to be environmentally responsible and it is the right thing to do, so as a business we do need to go with that flow and continue to be environmentally responsible.

The manager of company S indicates customer and client pressure and the competitive nature of the printing industry. This shows that customer pressure is also contingent upon the industry type and industry-specific sustainability requirements.

Well, I guess there is a customer pressure. I mean printing is a very, very competitive industry. Client pressure has been quite significant.

The manager of company J states that the company's sale representatives are being asked by customers about its sustainability policy and SSCM initiatives. In fact, customers are interested to know the performance of companies from whom they purchase their products or services.

Our corporate sales teams – you know all their customers are asking around what is [company name] doing, what's our policy, what do we do with our supply chain, so it's very much a customer-driven requirement as well.

These remarks by managers are in line with prior research, which concurs that customer expectation/pressure is a key motivator for companies to adopt SSCM practices (Lieb & Lieb, 2010; Sharfman et al., 2009; Solér, Bergström, & Shanahan, 2010; Trudel & Cotte, 2009; Zhu et al., 2008). According to Sroufe and Melnyk (2013, p. 6), “supply chain and logistics analysts, procurement personnel, sustainability coordinators, and

managers, and executives face new pressures from their customers and from regulators to reduce carbon emissions and run more efficient and ‘sustainable’ supply chains”. Similarly, Altuntas (2014, p. 101) argues that “consumers [or customers] are the strongest members of global supply chains and their demands would be much more effective in accelerating sustainability adoption in supply chains”. Furthermore, scholars have argued that sustainability improvements by brand owners can develop customer loyalty, corporate reputation as a good corporate citizen and also lead to an improved rating on retailer sustainability scorecards (Boch, 2010).

Some case companies perceive SSCM as a vehicle to enhance corporate reputation and brand value in the marketplace, while others adopted an SSCM strategy to protect corporate reputation and brand value. The manager of company G highlights that it is difficult to build the company’s brand name and reputation among its stakeholders; however reputation can be easily tainted if the company does not take the necessary steps to ensure it engages in sustainable practices.

We are New Zealand’s largest non-food retailer...we all know through history that it takes a long time to build company reputation, but it can be eroded very, very quickly and that can have an immediate impact on the bottom line.

Similarly, the manager of company R explains on its company’s global reputation and how it is linked to the supplier selection process. The following comment indicates that reputation and the international sustainability rating of a company has a link with its SSCM. Proactive companies, therefore, should pay due attention to the fact that their image and reputation can be spoiled if they do not thoroughly oversee and engage with

their suppliers in terms of enhancing the sustainability of the whole supply chain network rather than developing their intra-organizational sustainability.

[...] we have a really good reputation, I feel, in the global market as well, because we've been in the top 100 most sustainable companies since it began...we choose our suppliers if they are good for our company, and they are not going to damage our reputation ... a lot of it is about brand reputation.

The above remarks by managers are consistent with the previous research, which supports the notion that the adoption of SSCM enhances and protects corporate reputation and brand value. Several scholars have asserted that companies integrate SSCM strategies in order to protect or enhance brand image and improve reputation among stakeholder groups (Altuntas, 2014; Carbone & Moatti, 2008; Cheung et al., 2009; Oelze, Hoejmose, Habisch, & Millington, 2014; Shekari & Rajabzadeh Ghatari, 2013), as well as to develop customer satisfaction and loyalty (Hazen et al., 2012).

To achieve goals such as environmental conservation, social development and the economic wellbeing of society, governments use various tools such as regulation and taxes to control the behaviour of companies. National and international regulations can be strong drivers for companies to embed sustainability into business practices. The Organization for Economic Co-operation and Development (OECD) considers regulation an important tool for the socio-economic welfare of society (OECD, 2010). The OECD defines regulation as “any instrument by which governments, their subsidiary bodies, and supranational bodies (such as the EU or the WTO) set requirements on citizens and businesses that have legal force” (OECD, 2010, p. 10).

The findings suggest that some managers acknowledge the role of present and potential regulations in compelling their companies' to integrate SSCM. The manager of company J comments about the relationship between regulation and environmental sustainability, and how important it is for airline companies to comply with regulations such as those related to health and safety and the natural environment.

We're one of the most compliance regulated industries in the world, so that's our starting point, and sustainability came out of an environment which came out of compliance so it's a cornerstone of what we try and do first and foremost. We don't always succeed but certainly it's the highest aspiration when you're transporting people.

Moreover, the manager of company R remarks on the New Zealand Government's green procurement initiative in the past that specifically prompted companies which supply government organizations to adopt a green procurement policy.

[...] quite a lot of it can be customer driven especially with government departments, that's [green procurement] the big thing that came in probably about six years ago, came in with the Labour Government, and that was all about green procurement from suppliers. That was a big driver in us getting environmental choice in New Zealand and also carbon zero.

On the other hand, some managers acknowledge the uncertainty that surrounds the emissions trading scheme (ETS) in New Zealand. The manager of company A argues that one of the reasons for the company initiating SSCM programmes was imminent environmental regulations.

We are quite an iconic New Zealand brand and [our] reasoning is uncertainty about where the programme commenced, there is some uncertainty around the trading scheme, we thought we could be facing quite a high carbon liability, so there were strong views to start reducing that carbon liability, and also the risk factors involved in the supply chain.

Similarly, the manager of company K recounts the company's strategic planning process in which the company's management identified sustainability risk areas to business and how existing national and international regulations/legislations can potentially impact the company in terms of managing its environmental sustainability.

According to the manager:

In 2005 the business did a strategic risk review, they were looking [to find out] out what are the key sustainability risks to this business...we had the European Union introducing an Emissions Trading Scheme [ETS] and we had the domestic New Zealand ETS coming in. We had the inter-government panel on climate change (IPCC) producing a specific report on aviation's contribution to greenhouse gas emissions. So climate change was all across the media, and specifically the key message was that there is a risk to long haul tourism and trade because of carbon.

This finding of the present study is consistent with prior research which found that government regulations and legislation can be a significant driver for SSCM implementation (Ageron et al., 2011; Barker & Zabinsky, 2010; Chkanikova & Mont, 2015; Giunipero et al., 2012; Laosirihongthong, Adebanjo, & Choon Tan, 2013; Zhu et al., 2008). Furthermore, the OECD (2010, p. 9) states that “an effective regulatory

policy supports economic development and the rule of law, helping policy makers to reach informed decisions about what to regulate, whom to regulate, and how to regulate”. However, the critics argue that regulation promotes observation of the minimum standards to comply, thus limiting organizations’ capability to develop innovative solutions for environmental issues (González-Benito & González-Benito, 2006; Porter & van der Linde, 1995a). It is argued also that certain industries are more prone to government regulations than others. For example, mining, oil and gas, chemical, steel and metals, transport, and electricity are more sensitive industries with a higher level of associated environmental risk compare to industries like financial services and consumer staples (Reid, & Toffel, 2009; Reverte, 2009). Thus, the industry type is an important contingency factor, and the extent to which regulations impact on a company depends in which industry a company operates.

The findings reveal that only two companies have experienced NGO pressure. In particular, managers draw attention to recent developments in sustainable palm oil sourcing. NGOs are inducing food manufacture and large retail companies to restrain from purchasing palm oil obtained from unsustainable sources. This may be because the practices of supermarkets and large retailers are often under the radar of NGOs and public interest groups compared to small suppliers or retailers. In addition, it is convenient for NGOs and media groups to target large retailers to promote sustainability practices, which accordingly compels small suppliers to improve sustainability practices in their operations. To illustrate the situation, the manager of company C puts it:

Lots of our private label products have palm oil in them as an ingredient. Palm oil is obviously an ingredient that had quite a lot of interest around it because of [the] deforestation issue ...we have NGO's such as Greenpeace and WWF raising these issues and creating quite a lot of publicity around it...so as an organization we regard this as a high risk area.

Previous research found that companies operating in the food retail industry or other sensitive sectors are susceptible to NGO pressure (Peters et al., 2011; Wolf, 2014). These NGOs regularly monitor the activities and actions of such companies, and immediately launch campaigns against those companies that violate environmental standards or human rights (Perez-Aleman & Sandilands, 2008). Apart from the above discussed motivators, few managers mentioned that negative media publicity and public pressure can also drive companies to implement SSCM strategy.

Therefore, the findings of this study reveal that companies may be driven by normative or instrumental motivators, or both of them simultaneously may influence management to adopt SSCM. However, it is argued that different factors influence SSCM espousal in a different way, which depends on the context in which a specific company operates. These context-specific factors may be organizational-specific, such as ethical values of organizational members and top management commitment, forced by the external environment. Conversely, external environmental factors such as industry type, political regimes and regulatory frameworks, customer and stakeholder pressure, economic conditions or socio-cultural norms and values can also push companies to adopt SSCM strategy.

These findings resonate with past studies by Zhu and Sarkis (2006) and Andersen & Skjoett-Larsen (2009), which suggest that contingency variables, including industry type, corporate history, knowledge enhancing mechanisms, image and reputation, financial resources, size and company culture impact the implementation of SSCM strategy. It is also suggested that corporate SSCM motives should not be viewed as stagnant factors but rather dynamic forces that evolve over a period of time. Thus, appropriate strategy choice depends on creating a fit between the internal characteristics of a company and its external environmental factors.

It is further argued that normative and instrumental SSCM motivating factors should not be regarded as opposite to each other, but need to be viewed in a reconciliation mode. For example, normative motivations would be substantiated when investment in SSCM initiatives improves organizational sales, productivity and profitability. This would lead to strengthen managerial ethical beliefs and sustainability values, which encourage them to invest more in sustainable practices. The findings of this section are sum up in figure 4.1 below.

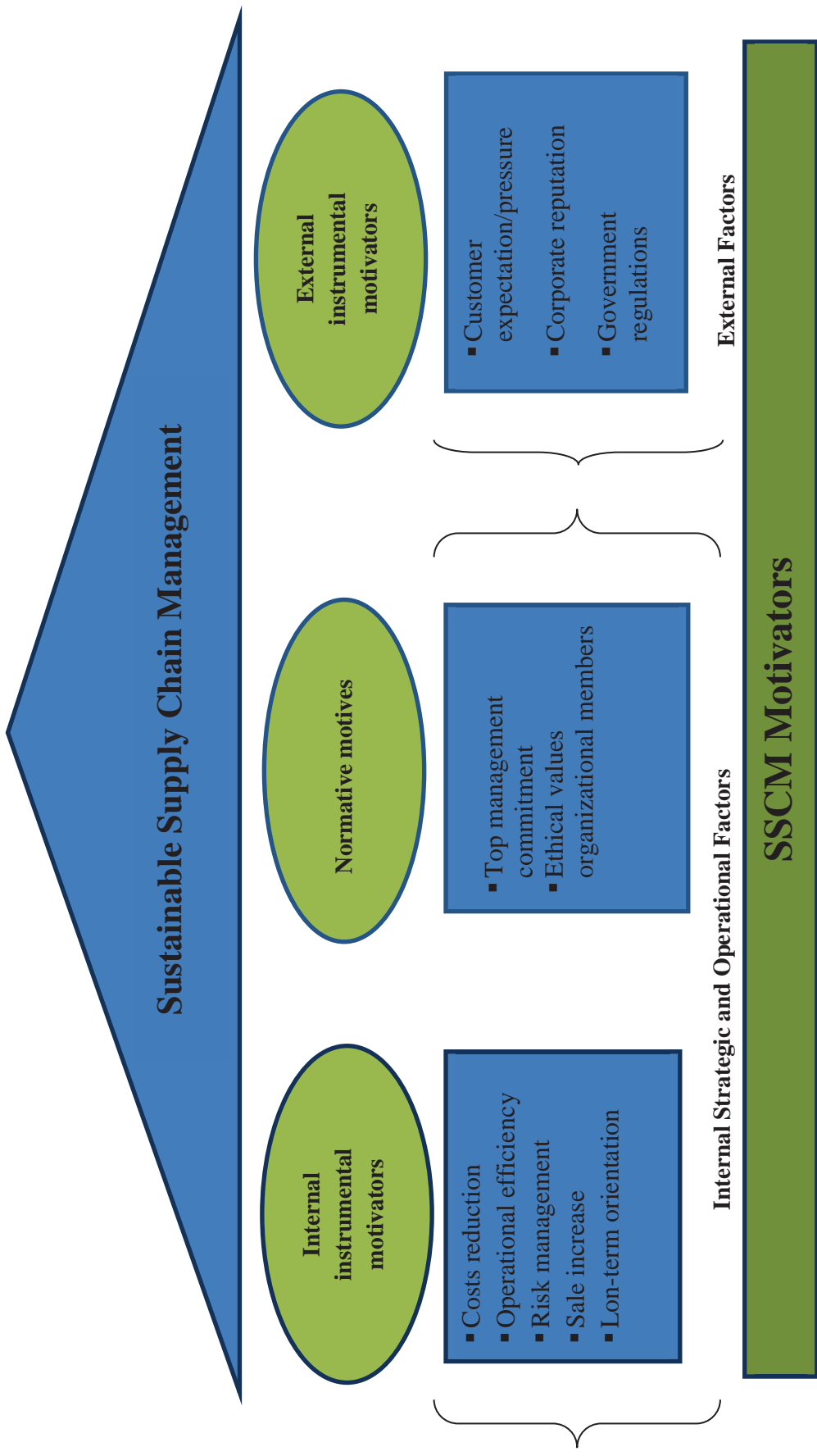


Figure 4.1: SSCM motivators

4.3 SSCM Barriers

This section addresses the second question of this chapter, and examines the factors that inhibit companies to adopt SSCM. For the purpose of this study, ‘SSCM barriers are defined as a set of internal and external forces that hinder an organization’s effort to successfully implement sustainability in SCM’. However, these forces may potentially be overcome by concerted and innovative efforts by an organization’s management and constructive interventions of external stakeholders. Previous research acknowledges that there are numerous internal and external factors that may hamper companies’ efforts to embrace SSCM (see chapter 2).

The empirical findings indicate that cost/financial concerns and strategic and structural issues such as behavioural/psychological barriers are frequently cited internal barriers to SSCM implementation. Conversely, external barriers are categorized into four types, supply-side barriers (supplier-related issues), demand-side barriers (customer-related issues), government regulations/legislation and other barriers (see table 4.2). Overall, managers mentioned various internal and external barriers 49 times. Out of a total of 48 observations, 20 citations relate to the internal barriers category, while the remaining 28 citations fall into the category of external barriers. Moreover, in the internal barriers category, managers stated 8 different factors that hinder companies’ efforts to implement SSCM strategy. On the other hand, the managers identified 12 types of barriers that fall into four external barrier categories.

Table 4.2: Frequency of SSCM barriers

Barriers	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	Total	
Internal Barriers																									
Cost concerns				✓			✓		✓			✓			✓						✓			✓	07
Difficult to establish the business case			✓																						01
Behavioural/psychological barriers			✓	✓									✓											✓	04 (12)
Strategic & structural barriers																									
Business strategy							✓																		01
Incentive systems								✓																	01
Structural issues									✓																01
Complexity				✓				✓																	01
Organizational size								✓								✓					✓				04(08)
External Barriers																									
Supply-side barriers																									
Lack of supplier ability to deliver	✓										✓														02
Higher prices by suppliers	✓																					✓			02
Poor supplier commitment						✓																			01
Limited control over suppliers							✓														✓		✓		03(08)
Demand-side barriers																									
Customers' unwillingness to share sustainability costs								✓																	01
Lack of customer/consumer interest				✓											✓						✓		✓		05(06)
Government regulations & legislation																									
Lack of government leadership				✓		✓			✓														✓		04
Weak legislation/regulation (developing nations)				✓		✓																			03
Lack of decent carbon market															✓										01(08)
Others																									
Lack of public awareness		✓							✓			✓													04
Lack of consistency in standards				✓																					01
Differences in business culture (developing-developed nations' dichotomy)						✓																			01(06)

In the internal barriers category, a total of 7 managers cited that cost is the primary concern for implementing SSCM strategy. Structural and strategic barriers are cited by 8 managers. A total of four managers also refer to behavioural or psychological barriers. On the other hand, in the external barriers category, supply-side barriers, demand-side issues and government regulations/legislation are cited 8, 6 and 8 times respectively by managers. Some managers also mention issues related to public awareness, standards and business culture as barriers to successful implementation of SSCM strategy.

4.3.1 Internal Barriers

Internal barriers refer to ‘organization-related obstacles and challenges that impede the efforts of management to engage in SSCM practices’. However, these obstacles can be overcome by proactive strategic and operational changes. The findings reveal that companies have encountered various internal barriers to SSCM implementation. Managers stated that at the company level cost/financial barriers are the main obstacle for SSCM implementation. Some managers argue that embracing sustainability is not always a cheaper option for businesses. For example, a few managers noted that, at times, implementing SSCM practices needs extra financial resources, compared to those companies employing traditional business practices. This concern sometimes creates a challenge for management in the adoption of SSCM. The following quotations describe how financial issues inhibit companies to adopt SSCM. As one of the managers of notes:

There are very limited benefits to [company name] in terms of financial [aspects]. It puts more financial burden on our suppliers by doing this...so having a supplier have an ethical approach to workplace employment doesn't necessarily add to any

direct reductions to [company name] cost structure, so it's very difficult to actually get a lot of traction on that basis. (Company E)

Similar concerns are raised by the manager of company U about sustainable purchasing practices. Time and costs related to sustainable purchasing present a challenge to supply chain managers to thoroughly integrate sustainable purchasing practices for an entire products or services range. The manager remarks:

One of the things that has always worried me about sustainable purchasing is cost and time.

Likewise, the manager of company O highlights the issue of limited financial resources. The company intends to purchase the most efficient and advanced locomotives; however investment constraints makes it difficult to achieve such goals. As the manager puts it:

Investment is obviously one of the key things...obviously we would love to be running the latest and greatest, you know, locomotives on our tracks, but we don't have the funds for that...which is quite a significant investment barrier.

The above statements by managers resonate with prior literature, which suggests that cost/financial barriers are significant obstacles to the implementation of SSCM. The successful implementation of SSCM initiatives requires investment in appropriate infrastructure, equipment, systems and processes, which may sometimes initially increase operational costs. Therefore, due to limited financial resources, companies often struggle to engage in SSCM practices (Ageron et al., 2011). Several studies

reported that higher financial costs were a significant barrier to the implementation of SSCM (Ageron et al., 2011; Min & Galle, 2001; Mont & Leire, 2009; Walker & Brammer, 2009). Walker and Brammer (2009), in a study on UK public-sector procurement practices, revealed that financial constraint was a leading barrier to the implementation of sustainable procurement practices. In a similar vein, Min and Galle (2001) found the higher costs of environmental programmes to be a serious concern for the effective implementation of GSCM practices. Furthermore, traditional procurement systems, in which multiple bids are obtained from suppliers and the contract is awarded to a low-cost bidder, contradict sustainable purchasing principles. Lower upfront costs encourage buyers to purchase a product or material which is less costly but has poor environmentally friendly attributes. Thus, short-termism entrenched in the traditional purchasing system acts as an obstacle to sustainable procurement (Harris et al., 2004).

Negative perceptions – behavioural and psychological issues – within a company can be a central challenge for the implementation of SSCM strategy (Preuss & Walker, 2011). Negative perceptions may create psychological hurdles for pro-sustainability oriented managers to introduce and implement SSCM practices. An organization including management, board, or employees holding negative sustainability perceptions often tend to adopt short-term vision while long-term business orientation is ignored or compromised. One of the key issues related to introducing sustainability within a company is managing organizational change and doing things differently compared to what was done in the past. Most people resist new initiatives and would like to stick to old ways. As the manager of company C puts it:

Behavioural barriers and behaviour change are significant issues. You have a particular practice there's been adopted for the last 20 years and to actually do something differently obviously you have to manage behavioural change... I guess behaviour change is often a significant challenge to supply chain sustainability.

In a similar vein, the manager of company D points out this issue within the company, and also with some customers which sometimes do not prefer change that has sustainability-related benefits. The manager argues:

I think there's often a psychological barrier for a lot of people who kind of see sustainability as a nice fluffy thing that we can do but it costs more money and there's no real benefit, so there's that, and you have to overcome [this] not just with your own staff but also with customers as well, because sometimes we'll make a change and they'll be like we don't want this.

Previous research indicates that managerial perceptions concerning economic uncertainty may negatively influence the implementation of sustainable procurement practices (Giunipero et al., 2012). Accordingly, it is argued that some companies are sceptical, and in certain cases reluctant, to participate in SSCM because of cultural, behavioural or psychological issues due to uncertainties associated with the desired benefits of these practices. Azapagic (2003) suggests the role of an organization's leadership is in overcoming these challenges and developing a responsible corporate culture with regard to sustainability.

Strategic and structural issues may also restrain corporate proactivity towards adoption of SSCM. The findings reveal that organizational size, business strategy, incentive and reward systems, and organizational structure at times make it difficult for companies to effectively implement SSCM.

Organizational size can be an issue for small and medium enterprises (SMEs) in implementing SSCM because of scarce resources and lack of knowledge and expertise (Oelze et al., 2014; Revell & Blackburn, 2007). Similarly, SMEs find it difficult to compete against large businesses, which naturally have the advantage of large production volumes and economies of scale that enable them to minimize operational costs even if they are using expensive technologies. Jenkins (2006) asserts that lack of resources is most frequently cited barrier for SMEs to implement sustainability practices. In addition, SMEs often operate in a very competitive environment, where profit margins are tight. This paradox could restrain the ability of SMEs' to devote sufficient resources to sustainability. For example, the manager of company Q remarks that:

Our biggest challenge is [that] the amount we buy is not only insignificant compared to other larger laundries in New Zealand, but also from a world scale we are a tiny little linen group... So our challenge is just purely volume.

Company P is not an SME but the manager compares the company to multinational corporations, which possess considerable budgets and are relatively more exposed to stakeholder groups and the public. The manager of company P argues:

Sometimes we don't always take the leadership roles because we are not a very huge company with a big budget.

However, it is argued that although organizational size is an important factor that influences the sustainability approach of the company, even SMEs can engage in social sustainability practices which do not require heavy investment. Thus, budgetary constraint can be a relevant factor in the adoption of SSCM but cannot be considered a major barrier as these smaller companies can still exercise many practices to improve their SSCM performance.

The competitive strategy of a company also influences its approach to SSCM adoption. For example, in general, if a company follows a cost leadership strategy it is most likely to strive to reduce costs as much as possible at every level of the supply chain so that low-cost products can be made available to consumers. However, this low-cost tendency may lead to sustainability compromises or a buyer may ignore shortcomings at suppliers' factories, such as working hours or minimum wages. For example, the manager of company G describes this issue:

We are a value-based retailer. Low cost price is a really fundamental driver for us. So that creates some tensions, doesn't it? If your procurement values are based on sourcing low-cost goods, from low-cost economies, then you are setting up some

challenges around the quality of the goods and possibly working conditions as well. Perhaps that low-cost position in the marketplace might prohibit us from making some choices that might otherwise be desirable. For example, we don't have the customer base to support a whole lot of high-value organic textiles, which may be ideal from a sustainability perspective, but we don't have the customer base that will support that decision.

Compensation management⁴ has a link to the implementation of sustainability. It is important to align a company's incentive and reward systems to sustainability performance in order to promote sustainability culture within a company (Epstein, 2008). If managers are rewarded for accomplishing short-term goals, then managers are most likely to adopt those strategies which improve the company's instant profitability gains. Epstein (2008, p. 132) argues that "the traditional accounting system often provides a disincentive to report potential hazards or violations of environmental laws, corporate goals, and corporate practices". He further claims that often incentive systems reward unfavourable behaviour and provide disincentive for the right behaviour which improves sustainable outcomes in the firm. The manager of company I posits:

[...] I think its acute short-termism. When directors of boards are paid on their financial performance, not in five years' time, but in one year's time, what do they want to do? They want to basically maximise profits and reduce costs.

Furthermore, organizational structure is an interesting factor that may also influence the adoption of SSCM. For example, a centralized structure with a unified sustainable procurement policy makes it easier for companies to manage and homogeneously

implement SSCM. On the other hand, the varied priorities of organizational divisions and inadequate coordination can complicate the implementation of SSCM strategy. Structural concerns and their impact on SSCM performance are described in the following comments of managers. The manager of company K remarks:

Even though we're a small organisation in terms of head counts, we are quite complex in that we have multiple divisions and we do not have a single kind of corporate procurement function. If we had that and the procurement policy covered the entire business, and it was totally aligned with our sustainability policy, wouldn't that be nice. Unfortunately that's not the way it is, but there are kind of little hurdles to overcome in terms of engaging with those divisions and trying to get people to think sustainability when they're making procurement decisions.

Another manager of company K also reveals the impact of the organization's structural issues on the successful implementation of SSCM. For example, the manager argues:

I think the biggest challenge is actually the fact that we decentralize [SSCM] ... it does make it kind of hard because you've got people in very different roles with very different focuses and very different levels of experience and expertise. So I think that's the major challenge...see, if you've got a centralised procurement function it's much easier to control that because you've got a focus group of people and one of their key focuses is sustainability.

According to Walker and Brammer (2009), a decentralized procurement structure in public-sector companies creates a problem for implementing sustainable procurement practices. It would be difficult to manage sustainability across the board in all product categories because of the decentralized procurement function. Harris et al. (2004) argue that divided purchasing responsibility presents a problem for sustainable purchasing. Although, the purchase of high-value items may be centralized, generally the purchase of low-value products is at the discretion of the decentralized division within a company. Thus, it would be difficult to apply a uniform sustainable policy in all purchase decisions.

4.3.2 External Barriers

External barriers in this study are described as ‘anticipated or prevailing environmental forces beyond the direct control of organization’s management that may create some challenges in the adoption of SSCM practices’. The findings reveal a range of external barriers to SSCM implementation. Demand-side barriers, including lack of customer interest and the unwillingness of customers to share sustainability costs, are key obstacles stated by managers regarding SSCM implementation. In ideal circumstances, customers/consumers would prefer to buy sustainable products or services; however, due to higher costs, lack of interest and lack of information, the sustainability preferences of customers are often not translated into the purchase of sustainable products or services. The following comment of manager reflects this situation:

In terms of the customers’ expectations, it’s just not as strong in this area as it needs to be...there’s no real push or financial reward for doing it for customers...so if a customer is quite happy to work with one bank or the other

bank without even asking the question then what's the value for [name of the company]. (Company E)

Similarly, the manager of company W notes that at present sustainability is not demanded by customers.

At the senior level – or governance level – of [name of the company], they don't see sustainability in the marketplace as a barrier for selling [name of the product]...they do not want to impose that additional cost and complexity to the business until they are forced to, where they are no longer able to send their product to particular markets. So they have seen no evidence that they are getting pushed back from the markets.

The manager of company S draws attention to the issue of intense business competition and price war in the market among competitors, which drive customers to go for the cheaper options rather than the sustainable ones. The manager describes:

Our competitors are chopping the price far down until there's nothing in it. We've lost few accounts like that because the customer only is interested in money; they are not interested in the long-term payback.

Similar concerns regarding lack of customer demand for sustainability are underlined in the previous research (e.g., Bansal, 2002). Some scholars argued that there is a lack of customers' demand for organic products or services (Doonan et al., 2005; Faisal, 2010; Seuring & Müller, 2008), which may discourage many producers from providing these options in the market. Similarly, Young et al. (2010) suggest factors such as lack of

information and time, as well as higher prices, may discourage consumers from purchasing green products. Accordingly, it is argued that for many companies to implement SSCM practices there needs to be a strong push from the market and customers.

With regard to supply-side barriers, some managers point out that supplier-related issues, such as a lack of supplier ability and higher prices by suppliers for sustainable products, services or raw materials, impede SSCM implementation efforts. The manager of company A remarks on the higher prices of sustainable options and the inability of suppliers to provide needed services:

[...] obviously pricing is quite a strong driver, and ability of suppliers. A number of companies turn up service to sustainability in their request for proposals (RFPs), but actually when it comes to delivery, may not be able to deliver what they've promised, and other entities may attempt to charge a premium for the same outcome...I think that presents a bit of a barrier.

The manager of the company V highlighted the issue of higher costs of raw material which makes the company less competitive as the extra costs of the products get transferred to customers. Thus, customers may refrain from purchasing expensive product and sometimes go for cheaper options available in the market. As the manager states:

Renewable raw materials are a very, very small part of the supply chain now and so they're a premium product and for us to manufacture them costs us seven times

as much as the crude oil based material. Obviously we can't stomach that ourselves, that will get passed onto the customer, which then gets passed onto the consumer so if the consumer demands it we are more than ready to step up to provide it but it will depend on what the market is asking for.

Similar supplier-related issues are reported in previous research, including the lack of green suppliers and developers (Balasubramanian, 2012), the lack of supplier commitment (Walker et al., 2008) and the higher prices of sustainable products by suppliers (Walker & Brammer, 2009). It is argued that in order to overcome these issues, there is a need to develop collaborative relationships with supply chain partners. These concerns can be resolved only when supply chain network members develop close relationships with each other rather than deteriorating into hostile and opportunistic behaviour. Some scholars argued that “the creation of truly sustainable supply chains to a certain extent depends on the ability and interest of these companies [large businesses] to work with CSR issues, extending their own factory walls” (Andersen & Skjoett-Larsen, 2009, p. 83).

Government regulations play a central role in compelling companies to streamline their social and environmental impacts in SCM operations. However, inadequate regulation or lack of government interest may decelerate the process of sustainable development at both the national and international levels. The sentiment is reflected by the following comment of manager:

I don't know how much attention our senior management are paying to the fact that it's not much of a priority to the government. It's easier to get that support

[from top management] if you can point to the government saying this is really important, whereas if they're actually saying this is not so important and we don't care about that, then it becomes a much harder sell. (Company D)

One manager argues that although consumers wish to purchase sustainable products or services, when it comes to making a decision to purchase between sustainable (expensive) or cheap products, the consumer often prefers to opt for the low-cost items. Thus, in general, consumers who buy low-cost options still dominate the market, and those companies which provide sustainable choice often lose in the short run because some sustainable products may be relatively expensive. In this regard, the government should play an active role in streamlining market behaviour through proactive regulations so companies that provide sustainable products or services should be given a fair chance to compete. The manager of company W explains why it is important for the government to intervene in the market to promote sustainability among competitors:

I think that one of the problems we have is the market, if you go and ask the marketplace what do you want? We want more sustainable products...yes. Are you going to buy the cheap product or the expensive product that's sustainable? We're going to buy the cheap product. I don't necessarily believe the pressure from the marketplace backs the philosophy of the marketplace, and I don't know that huge changes across the board are going to happen unless that pressure quite possibly is regulated. You know you need drivers from the top to say everybody is going to follow these rules so the competition is maintained. If we attempt to follow these rules and our competitors don't, it's quite possible we'll push ourselves out of the market.

Previous research indicates that the proactive role of government can be a strong driver for improving SSCM. However, the lack of regulation may reduce the pace of SSCM adoption (Cheung et al., 2009; Faisal, 2010). It is argued that in order to stimulate the demand for SSCM, the government needs to promote public and customer awareness programmes. Such initiatives would be helpful in raising consumer awareness, which in turn lead to increase the adoption of SSCM by the corporate sector.

A few managers also mention the regulatory and legislative challenges of developing nations. Governments of developing nations often fail to control the behaviour of companies regarding sustainability impacts, due to poor governance and poor monitoring mechanisms. As the manager of company E remarks:

When they talk about the supply chain, the biggest concerning area is not necessarily our New Zealand suppliers, but it's our suppliers coming from countries where the legal framework is just not anywhere near the same standard, but it's what you have in New Zealand and Australia or in Singapore. So in some of those countries you find you've got some ethical ... debates on what's actually [happening], how it meets that part of it.

To sum up, sample companies encountered a range of barriers and challenges for the effective implementation of SSCM. The empirical findings indicate that the barriers of SSCM can be organization-specific issues or they may relate to the external environment of the company. The salient internal barriers include cost/financial concerns, strategic/structural barriers and negative perceptions. On the other hand, external barriers involve demand-side barriers, supply-side barriers and government

regulation of the SSCM approach. Furthermore, the findings also reveal that companies encountered more external than internal barriers to SSCM implementation. Figure 4.2 below summarizes SSCM barriers discussed in the chapter.

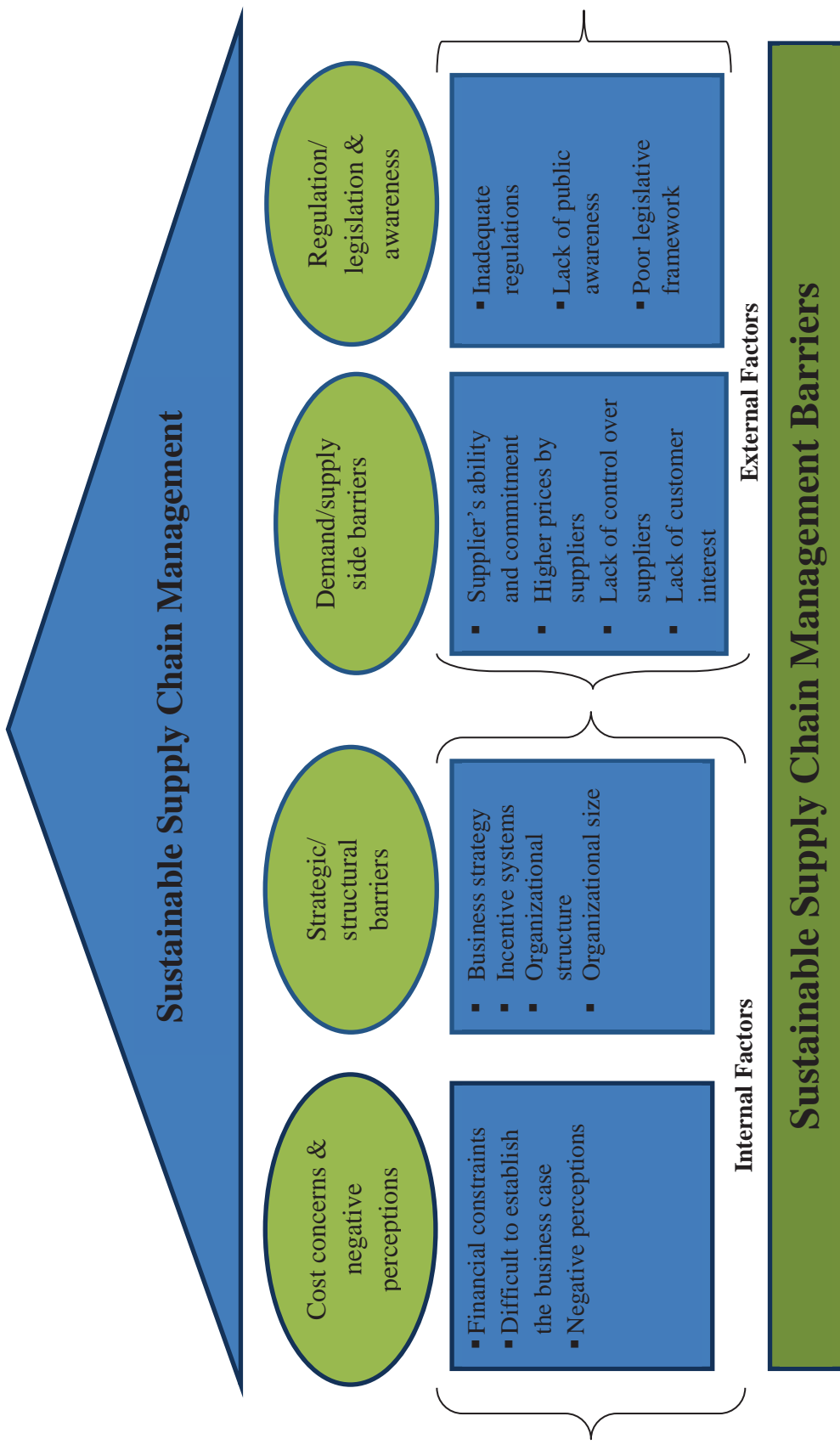


Figure 4.2: SSCM barriers

4.4 Conclusion

This chapter examines the motivators and barriers to SSCM implementation. On the whole, it is promising to note that sample companies experienced more motivators than barriers to SSCM adoption. Instrumental drivers are cited more than normative drivers, because of the presence of instrumental motives at both the internal and external organizational levels. This may be also because most of the companies interviewed are private-sector organizations, where a prime objective is to maximize economic performance simultaneously with fulfilling their ethical role in society. It is argued in the chapter that contextual factors are significant reasons determining the response of companies to SSCM. Motivators to SSCM should not be viewed as stagnant factors but rather as dynamic and constantly evolving over a period of time.

It is further asserted that normative and instrumental SSCM motives should not be regarded as opposite reasons for companies to adopt SSCM. It is suggested that normative and instrumental dimensions of stakeholder theory need to be viewed in a reconciliation perspective in which both perspectives substantiate each other for better sustainability at firm and supply-chain levels. On the other hand, interviewed companies cited more external barriers than internal ones. This indicates that possibly it would be easier for companies to adapt to changes in the internal environment given fewer obstacles at the internal organizational level. Finally, the findings of this chapter will be further discussed in detail in relation to stakeholder theory and contingency theory in the chapter 7.

CHAPTER 5

Sustainable Supply Chain Governance

5.1 Introduction

This chapter examines how companies are governing their supply chain operations and managing relationships with supply chain partners to achieve sustainability. Prior literature has examined different private, voluntary governance mechanisms by which companies promote SSCM. However, few frameworks or models available in the existing body of knowledge specifically classify companies based on their sustainable supply chain governance (SSCG) approaches. This chapter aims to fill this gap by achieving the following objectives: first, to identify and critically investigate SSCG mechanisms used by companies to promote sustainability in their upstream supply chain practices; second, to demonstrate the sustainable procurement process by which companies implement SSCM; and third, to develop a sustainable supply chain governance (SSCG) model.

5.2 SSCM Policy

Sustainable supply chain management (SSCM) policy is a central element in the implementation of SSCM. According to Sisco et al. (2010), a company's clear vision for an SSCM programme provides strategic direction to its internal and external stakeholders, which helps define and promote a company's commitment to SSCM. Mamic (2005) argues explicitly in favour of top leadership's involvement and continued support in the development and implementation of the SSCM vision. Furthermore, SSCM policy specifies an organization's overall philosophy and management approach to environmental, social and economic issues in the organizational supply chain (Sisco

et al., 2010). In particular, SSCM policy spells out the organizational SSCM commitment in improving supply chain sustainability (Mamic, 2005), the scope of the SSCM strategy, organizational compliance with relevant local and international laws and regulations and an organization's key priority areas (Sisco et al., 2010). For example, the SSCM policy of company D states two key approaches it uses to manage its SSCM impacts:

First, working with our strategic suppliers to ensure more of them become compliant with our sustainability principles. Secondly, continue to identify sustainability opportunities within our existing processes, whether it is streamlining a process to cut down on transport impacts, moving to a more environmentally-friendly product, or working in partnership with a supplier on a socially beneficial initiative. (Company D, website)

In a similar vein, the manager of Company E remarks that the company has a graded approach to SSCM. The SSCM policy of the company is applied consistently to all countries in which it operates. Accordingly, the way company manages its SSCM programme in New Zealand is similar to the way it gets implemented in Singapore, Hong Kong, Samoa and other parts of the world.

Our SSCM policy outlines a set of standards we expect from all of our suppliers, to meet as a condition of doing business with us...the aims of our SSCM strategy are to improve the social and environmental performance of our supply chain, and protect [company's name] reputation by ensuring suppliers have strong internal CSR processes and governance systems in place.

Company T has a similar, globalized SSCM policy which applies to all its subsidiaries.

As the manager comments:

[...] SSCM policy applies at the group level...we demand high sustainability standards of all our suppliers. These are set out in our code of ethical purchasing ... we work with our suppliers to help them meet our ethical, health and safety, social and environmental standards and improve their performance through monitoring, assessments and improvement activities.

However, one of the managers (company K) states that the company has an SSCM policy but the policy is not uniformly applied to the different business divisions within the company. Some divisions are more advanced than others because the company has a decentralized procurement function. Klassen and Vereecke (2012) also note that centralization enhances improvements and standardization in implementing social and environmental programmes within a company and across supply chains. They further argue that centralization fosters cooperation, which in turn leads to fully captured social or environmental risks. For example, the manager of company K states:

The whole business is aware of the sustainability policy and the action plan but I would suspect different areas of the business are at different levels of maturity around supply chain engagement, and we understand our supply chains are at different levels of maturity as well. So is it comprehensive in that every single tender has to go through this process which includes elements of sustainability before the contract is awarded? No, we're not that advanced.

For some companies their SSCM policy is a segment of the overall business policy and SSCM fall under a broader rubric of sustainability strategy. For example, the manager of company A comments on the company's policy as:

[...] we see sustainability as a core part of our business, which is fundamental to our group...we see ourselves as integral to New Zealand's future and by being a sustainable business in that sense, we are actually able to continue to contribute to New Zealand's future. We have a number of focus areas; primarily we've got five around being a good employer, around listening to customers, to deliver, to find innovative solutions, around partnering with the suppliers to understand our supply chain and manage impact, around engaging with communities and around working to protect the environment.

Some companies define their SSCM policy into a very narrow sense relating it to a specific organizational function or stakeholder such as the manager of the company G commented on the company's SSCM policy:

First of all the policy is communicated to all our suppliers...we publish that policy to all the suppliers...we say to all of our suppliers if you are receiving a purchase order from [name of the company] these are the standards that we expect you to comply with as part of our terms of trade.

Moreover, companies adopt various SSCG mechanisms to execute SSCM policy. The selection of an appropriate SSCG mechanism depends on the business requirements of a buying company. Some companies use a hands-off approach to their supply management, in which little or no interaction with suppliers is needed when companies procure their products or services. Other companies use a more engaged or customized process management approach, referred to as a hands-on approach, while managing relationships with their upstream supply chain members (see chapter 2). The findings reveal that interviewed companies adopt both of these approaches in managing their upstream supply chain operations. The next two sections discuss in detail the SSCG approaches adopted by the companies interviewed. An SSCG model is then presented, based on the empirical findings of this study.

5.3 SSCG Systems – Hands-off Approach

The findings reveal that buying companies utilize various types of certification schemes. Early adopters of SSCM predominantly use the hands-off approach to mitigate their supply chain procurement risk (Klassen & Vereecke, 2012). Runicka and Reichel (2014, p. 86) state that “standards or [certifications] are just the starting point to enable analysing the scope of all impacts of organizations and to concentrate on minimization of those that are the most negative at the moment”. On the other hand, the focus of MNCs is relatively broad, and these MNCs have more diversified SSCG mechanisms in place, which take advantage of third-party certification schemes in combination with other SSCG mechanisms such as supplier monitoring and auditing programmes.

It is pertinent to note that a company’s choice of an SSCG approach depends on contingency variables such as industry requirements, geographic location, size (Tate et

al., 2010), product type, the risk associated with the product or service and the availability of resources. For example, the findings suggest that companies operating in the food retail, general merchandise retail and food manufacturing sectors particularly, direct their suppliers to obtain relevant certification or reports produced by independent third-party auditors (see Appendix 6). Preferred certification schemes include certified sustainable palm oil (GreenPalm certified) – a certification based on the Roundtable on Sustainable Palm Oil (RSPO) initiative, Environmental Choice New Zealand certification, British Retail Consortium (BRC) global standard for food safety, SEDEX (Supplier Ethical Data Exchange) certification, SMETA (SEDEX Members Ethical Trade Audit) reports, BSCI (Business Social Compliance Initiative) reports, WRAP (Waste Resources Action Program) reports, Safe Quality Food (SQF) Program and the Australian and New Zealand composting standard. The growing use of these certifications, especially third-party certifications, has changed the traditional governance regime where governments enforce and oversee issues such as food safety and quality to voluntary, private, regulatory regimes where such responsibilities are relocated to third-party certifying bodies (Hatanaka et al., 2005).

Some of above cited certifications are product-specific certification schemes, such as GreenPalm certification, which deals with the production of sustainable palm oil, while other certifications have a relatively broad focus that take into account a range of social, environmental and economic aspects related to products or processes under which a product is produced. However, the choice of certification by a buying company depends on the associated risk with the product or supplier as well as on industry requirements. The sustainability manager of company C argues in support of certification schemes:

I'm a big advocate of good certification and it saves an awful lot of work. You rely on the standard which is the result of good research and development by the authority that has developed that standard.

Deforestation of the tropical forest in Indonesia is a growing concern for environmentalists today. Although palm oil is one of the key factors of economic contribution and employment for poor rural communities in Indonesia, growing a plantation of palm oil often comes at the expense of tropical forest deforestation, loss of biodiversity and habitat and the excessive discharge of greenhouse gases (Worldwatch Institute, 2015). The Worldwatch Institute (2015) estimates that in the production of palm oil Indonesia emits more greenhouse gases than any other country besides China and the United States. As a result of this growing ecological concern, various NGOs and environmental lobbying groups, such as Greenpeace, World Wide Fund (WWF) and the Roundtable for Sustainable Palm Oil (RSPO) (Schouten & Glasbergen, 2011), are discouraging large food retailers and manufacturers from procuring unsustainable palm oil. In view of these recent developments in the palm oil industry, the sustainability manager of company C explicates the company's stance:

The palm oil industry has set up a RSPO and they developed a certification programme. As an organization, we regard this as a high risk area and we engaged our suppliers couple of years ago...we said to our suppliers that this is what our content is about – sustainability – and where we want to move to by 2015 [is] to have complete visibility over how much palm oil we use actually sourced from a sustainable plantation that has correct certification. As an example, we know now

we have to have complete visibility over 92 percent for the actual palm oil that has the correct certification.

The manager of company I comments on the company's latest change of policy regarding the procurement of palm oil:

[...] our company supports the production of certified, sustainable palm oil. We have recently updated our sourcing guidelines for our suppliers and we source our products from active members of the RSPO.

The manager of company C reports another example, where Greenpeace launched a name-and-shame campaign against one of its tissue paper suppliers. Greenpeace criticized the tissue paper manufacturer for its deforestation of native forest. With regard to this incident, company C supported its supplier and suggested it obtain relevant certification to overcome the concerns of Greenpeace. However, producers often lack such assistance or capacity building support from buyers or certifying bodies (National Research Council, 2010). This is one of the key limitations of certification schemes, according to the research council (2010); that they are unable to promote collaboration between certifying bodies and buyers or suppliers/producers. As the manager of company C states:

There was media publicity from Greenpeace last year saying that they [the supplier] did not regard the actual product as a sustainable resource and that it was being sourced from the native rain forest. So we engaged with the supplier and said in order to reduce the reputational risk associated with your brand we need

you to get certain certification, and the choice was made that we would ask them to get the environmental choice New Zealand eco-label.

Food safety, quality and security has been an important issue for large food retailers and manufacturers (Klassen & Vereecke, 2012), and food retailers often demand that their suppliers be certified by an independent, third-party organization. For example, the manager of company C posits that:

We source products or ingredients from countries where there is perceived higher risk. We require suppliers to meet the British Retail Consortium (BRC) standards, which was started in the UK but it's seen as a global standard now for suppliers to actually meet. Once suppliers have gone through that certification and met that standard, we are comfortable dealing with them. It makes us more comfortable about how risk is reduced.

The manager of company I comments also in favour of certification, which demonstrates that a supplier follows relevant standards in different product categories:

We've got established suppliers that have to go through various assessments. So a minimum we say is that you have to comply with the foodservice GLOBAL.GAP [Good Agricultural Practices] standard, British Retail Consortium (BRC) standard, or [the] Safe Quality Food Program (SQF).

Another manager states that having correct certification is an essential requirement to conduct business, especially with large buying companies. These buyers require

suppliers to present either certification or relevant audit reports by reliable, independent, third-party organizations (Klassen & Vereecke, 2012). Large companies also encourage their first tier suppliers to follow a similar procedure for their lower tier suppliers upstream in the supply chain. The cost of attaining third-party certification is usually borne by the suppliers. At the same time, the transaction and compliance cost of attaining certification is often mentioned as a prime barrier to the implementation of sustainable certification (National Research Council, 2010). Therefore, third-party certification appears to be a practical option for large retailers or buyers because it guarantees the product is obtained from a reliable source, and they do not need to bear the costs of attaining relevant certification as suppliers pay registration, enforcement and auditing fees to a third-party organization (Hatanaka et al., 2005). As the manager of company I puts it that:

Certainly the likes of Kraft and Nestlé are moving down the SEDEX route and are insisting that their suppliers go through an audit. So it's a trickle-down effect of the big guys kick the medium guys, the medium guys kick the suppliers and it's very much a push. So we are now asking our suppliers to register on SEDEX. You pay a registration fee; you've got to go through the audit programme.

General merchandise retail companies also use certification to govern and control the behaviour of their suppliers. Company G asks its suppliers to present certification as evidence of social or environmental compliance at the time of the supplier selection process for the purpose of audit waiver. The supplier needs to provide evidence of third-party labour standards or environmental reports undertaken from international retailers or brands such as SEDEX (Supplier Ethical Data Exchange), SMETA (SEDEX

Members Ethical Trade Audit) or BSCI (Business Social Compliance Initiative) reports (Hoejmose & Adrien-Kirby, 2012; Klassen & Vereecke, 2012). According to Brammer et al., (2011, p. 18), a similar standard is used by MNCs such as Unilever, which encourages its suppliers to use the SEDEX platform, “which offers standardized evaluation methods and makes audit data widely available. This reduces duplication between buyers, freeing up resources for supplier development and other improvement”.

The sustainability manager of company G comments:

When they [suppliers] register their factories we offer them an opportunity to apply for an audit waiver, which means they can furnish an existing third-party report, a form of certification and say, hey, we meet their internationally recognised standards.

Apart from the certification schemes discussed above, many other certification and socially or environmentally sustainable management systems (Marshall, McCarthy, Heavey, & McGrath, 2014) are used by the companies interviewed when procuring products or services (see Appendix 6). Some of these social or environmental certifications are generic, and so can be used by any sector or company, while other certification is more specific to a particular industry. For example, company E and company T require their suppliers to be Occupational Health and Safety Advisory Services (OHSAS) 18001 certified. OHSAS 18001 is an international occupational and safety management system certification. On the other hand, company T requires its suppliers to submit a recent audit report on the Social Accountability (SA) 8000 standard or the Ethical Trading Initiative (ETI) base codes as a minimum requirement. Both initiatives are intended to improve social sustainability standards in the workplace

and provide a general approach to risk mitigation (Marshall et al., 2014; Runicka & Reichel, 2014). In a similar vein, company D promotes the purchase of Fairtrade coffee for its entire business setup. The company has more than 5,000 employees and purchases only coffee and tea that is fair trade-certified for its staff members. However, generally such social sustainability initiatives are encouraged in public procurement (e.g., Preuss, 2009) rather than in private sector procurement programmes.

The findings further reveal that environmental certification is increasingly utilized by buying companies to promote sustainability in their upstream supply chain operations. For example, company R uses International Organization for Standardization (ISO) 14001 certification as a benchmark in its purchase decisions, especially for its core products. Company T also requires its suppliers to be ISO 14001 (Klassen & Vereecke, 2012) or Eco-Management and Audit Scheme (EMAS) certified (Preuss, 2009). Runicka and Reichel (2014) argue that these process-based certifications help companies to reduce waste and pollution as well as promote best environmental practice. Alternatively, some companies acknowledge and accept local, New Zealand-based environmental certification such as Environmental Choice New Zealand (product- or service-specific eco-label), CarbonZero (carbon offsetting certification or a product or service that has zero net GHG emissions) and Enviro-mark (process-oriented environmental certification). Several interviewed companies, especially those that operate in the banking, insurance and printing business sectors, mention that they purchase only Forest Steward Council (FSC) or the Program for the Environment of Forest Certification (PEFC) certified paper in their business operations.

Another interesting requirement is highlighted by the management of company T – the equipment purchase policy regarding conflict-free minerals. The company encourages its suppliers to use the Electronics Industry Code of Conduct (EICC) guidelines, because the issue of conflict-free minerals (e.g., tin, tungsten, tantalum and gold) is a growing area of interest for the information and communication technology (ICT) sector. ‘Conflict minerals’ is the term given to minerals from mines that directly or indirectly finance or benefit armed groups in conflict regions (The UN Global Compact, 2014). The trading of conflict minerals funds rebel armies, fuelling conflict and human rights abuses (The UN Global Compact, 2014). These minerals are used in various electronic devices, including mobile phones. Company T strongly supports the policy of conflict-free minerals and encourages its suppliers to have Conflict Free Smelters Initiative (CSFI) certification. The UN Global Compact (2014) also supports the CSFI programme to enhance the traceability of materials used in the production of electronic devices.

To sum up, the interviewed companies actively use hands-off mechanisms to promote sustainability and reduce business risk. The degree to which companies demand certification from suppliers, however, depends on the business context and industry requirements. The findings suggest that some sectors use the hands-off approach more actively than others – for example, the food retail and general merchandise sectors – while others do not employ these tools at all. The next section discusses the hands-on approach, in which buying companies go beyond certification standards and adopt a tailored approach for the management of their SSCM practices in their upstream supply chains.

5.4 SSCG Systems – Hands-on Approach

In the previous section, the hands-off approach to SSCG is discussed. This section discusses the hands-on approach, a more rigorous and customized approach (Gimenez & Tachizawa, 2012; NZBCSD, 2003) to SSCG, often used by large companies, especially MNCs, to control and govern their SSCM practices.

The hands-on approach to SSCG is a direct method which enables buying companies to individually interact, coordinate, collaborate and control sustainability behaviour and the practices of the supplying companies (Gimenez & Tachizawa, 2012). This approach is often used simultaneously with the hands-off approach as neither of these approaches or systems is sufficient by itself to address the complexities of governing SSCM. However, the hands-on approach to SSCG often requires considerable time, resources and efforts by buying companies to formulate, implement and control SSCM practices across the supply chain network (Boström et al., 2014; Gimenez & Tachizawa, 2012). Using the empirical findings of this study, the subsequent discussion first describes the sustainable procurement process (see figure 5.1), by which companies formulate, implement and control the hands-on approach. Second, a SSCG model is proposed, which classifies companies into different stages based on two dimensions – pro-sustainability orientation and SSCM maturity.

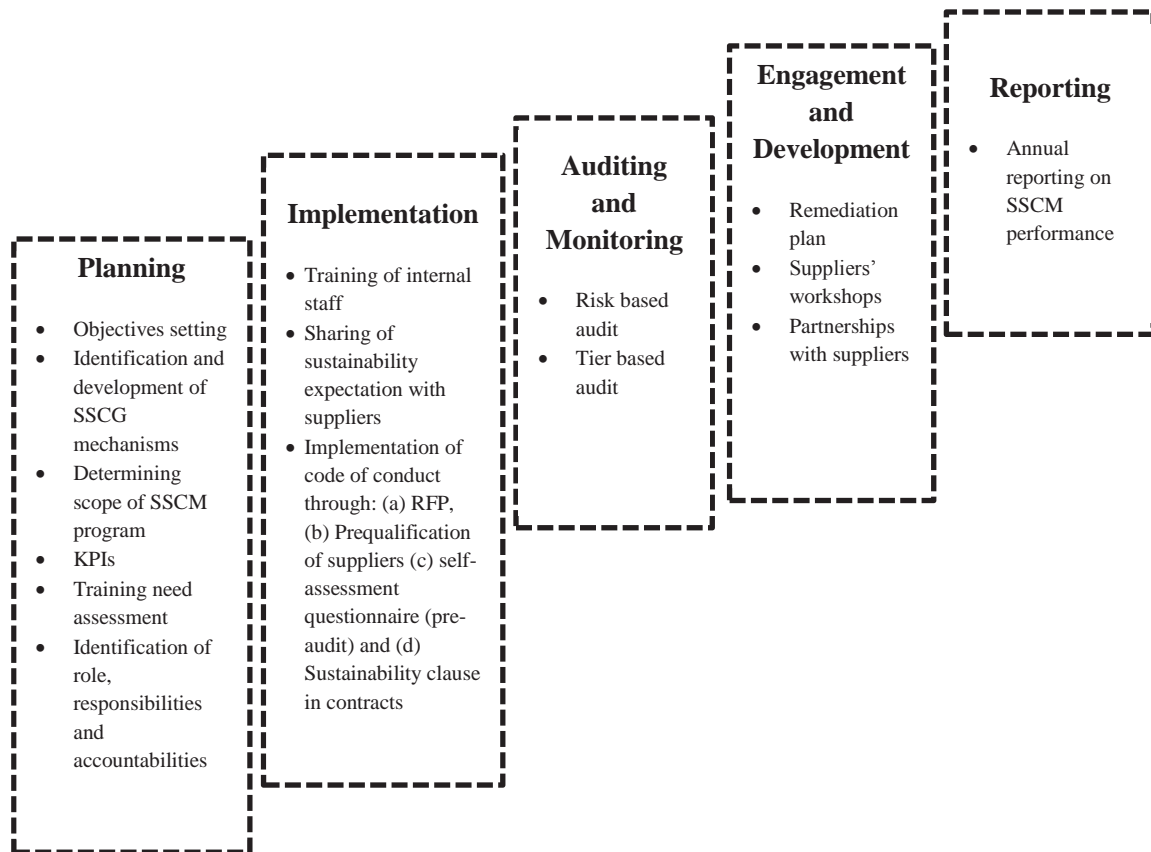


Figure 5.1: Sustainable procurement process

5.4.1 Sustainable Procurement Process

The sustainable procurement process entails five steps by which companies execute their SSCM strategy in their supply chain network. The process includes five phases: planning, implementation, monitoring and auditing, development and engagement and reporting (Brammer, Hojmosse, & Millington, 2011; Foerstl et al., 2010; NZBCSD, 2003; Sisco et al., 2010). However, some SSCM activities overlap and may be performed more than once in different phases of the sustainable procurement process. For example, training may be provided to organizational staff or supply chain members

in the implementation phase but may also be given through workshops during the development and engagement phase of the supplier's post audit. The following discussion details the sustainable procurement process by which companies execute their SSCM strategy, using the empirical findings of this study as well as the relevant literature available on the implementation of SSCG mechanisms.

Planning

In the planning phase, a company establishes its action plan and meaningful expectations by which SSCM policy will be implemented (Brammer et al., 2011). The planning phase involves formulating a detailed action plan, through which SSCM policy can be integrated into the existing business practices of the company, and establishing sustainability standards for upstream supply chain partners. Essentially, in the planning phase a company identifies and defines its objectives, standards, tools (e.g., supplier self-assessment questionnaire), key performance indicators (KPIs) (Brammer et al., 2011; NZBCSD, 2003), the scope of the SSCM strategy, training needs assessment and a clear auditing structure (OECD, 2001) as well as the roles, responsibilities and accountabilities at the intra- and inter-organizational levels (Mamic, 2005). This phase also specifies expected performance outcomes to be accomplished after SSCM implementation. Objectives, KPIs and tools developed in the planning stage provide a concrete foundation for keeping performance on track during the implementation and control phases of the sustainable procurement process.

Key sustainable procurement standards and expectations are generally expressed by an SSCM code of conduct. According to the Organisation for Economic Cooperation and Development (OECD) (2001, p. 3), “codes of conduct often represent just the first step

in a process of improving management processes in support of legal and ethical compliance”. Codes of conduct involve private, voluntary, regulatory systems which suppliers need to fulfil in order to conduct business with a buying company (Egels-Zandén & Lindholm, 2014). Codes usually involve key principles, criteria and indicators for monitoring and verification (Blowfield & Dolan, 2008) of suppliers’ ethical and socially responsible business conduct (Hoejmose & Adrien-Kirby, 2012; Jiang, 2009b; Roberts, 2003). These guidelines encompass areas such as labour standards, health and safety standards, governance, risk management, environmental responsibility and emergency response plan, and other standards regarding suppliers’ social or environmental stewardship behaviour (Jiang, 2009b; Mamic, 2005; NZBCSD, 2003). However, Mamic (2005) notes that the formulation and implementation of a code of conduct is a complicated matter, as established criteria or templates that can be homogenously applied by all companies do not exist. In fact, “there is no ‘one-size-fits-all’ approach to implementation [of code of conduct] and ... firms tend to tailor implementation measures to the type of commitment and to their own circumstances” (OECD, 2001, p. 8).

Sisco et al. (2010) assert that codes of conduct are essential components of SSCM strategy; they provide a shared vision and reliable working guidelines for internal and external supply chain members in communicating and implementing uniform SSCM expectations. These codes are communicated to suppliers or vendors so they have a clear understanding of what a buying company expects from them. Some companies prefer to communicate these expectations at the time of the RFP (requests for proposal) or RFQ (requests for quotations) stages and the pre-qualification of suppliers, while others integrate SSCM standards into suppliers’ contracts (Sisco et al., 2010). Large

companies often publish suppliers' codes of conduct or SSCM policy online to provide clear obligatory guidelines for current and potential suppliers (Sisco et al., 2010). The manager of company J argues that:

What we did is we based the code of conduct at a high level, it's really a statement of intent in what we see working with our suppliers.

Similarly, the manager of company G comments that SSCM policy and codes of conduct are important pieces of information formally communicated to suppliers at the start of the sustainable procurement process:

First of all the policy, the policy is communicated to all our suppliers. So we say to all of our suppliers, if you are receiving a purchase order from the [company name], these are the standards that we expect you to comply with as part of our terms of trade.

In a similar vein, the manager of company E states that codes of conduct provide a set of standards for suppliers, which must be fulfilled if they wish to establish a business relationship with the company:

We have a framework in place and we have a governance structure in place. And essentially in order to do business with [company name] you must comply with what we call the supply code of practice.

The above views clearly validate the importance of supplier codes of conduct for buying companies. However, the content of codes differs from company to company, depending on the needs of the buying companies and the sector in which the company operates (OECD, 2001). The manager of company G comments that different sectors have different standards:

We are sourcing at a lot of different levels, and different industries typically have different [sustainability] standards as well. For example, footwear and apparel factories, many of those factories are small factories, right... Someone making electronics or perhaps flat-pack furniture will be quite different for a larger factory, more capital, high capital value plant and things like that.

The findings further reveal that some of the sample companies draw on multi-stakeholder forums to formulate their codes, such as ILO conventions (e.g., forced labour conventions, minimum age convention), the Universal Declaration of Human Rights, OECD Guidelines for Multinational Enterprises and the United Nations Global Compact Principles (Andersen & Skjoett-Larsen, 2009; Gilbert et al., 2010; Leipziger, 2010; Runicka & Reichel, 2014; Sisco et al., 2010). In the development and refinement of suppliers' codes of conduct, some companies also consult other stakeholders and non-state actors (Von Geibler, 2013), such as NGOs, communities, industry associations and customers (see Appendix 6).

Sisco et al. (2010, p. 17) argue that “companies who engage early and regularly with stakeholders have the opportunity to take a proactive approach to these issues and to partner with stakeholders rather than discovering through the activist campaign”. The

aim for these multi-stakeholder dialogues is to develop codes that are acceptable to relevant stakeholders, and later at the implementation phase contributing stakeholders provide their active participation, efficacy and support in observance of these codes (Auld, Bernstein, & Cashore, 2008; Brammer et al., 2011). Brammer et al. (2001) further suggest that cultural issues and challenges as well as the use of multiple communication channels such as websites and printed documents must be considered during the supplier dialogue process. The findings reveal that few large companies, especially MNCs, also publish their supplier codes in different languages for strategic suppliers located in developing countries. These initiatives are well documented on company E's website:

[Our] supplier code of conduct was developed collaboratively with key internal and external stakeholders, and endorsed by the International Business Leaders Forum (IBLF) ... It aligns with our [company name] global sourcing policy and corporate responsibility framework, and is in keeping with our support of the OECD Guidelines for Multinational Enterprises and the UN Global Compact.... It is published in a number of languages – English, simplified Chinese, traditional Chinese, Vietnamese and Bahasa Indonesian.

This finding echoes the literature. which suggests that when a company has foreign operations, “communication and training need to be sensitive to regional or local dialects, non-verbal expressions, traditions of interpersonal communication, and the nuances associated with translation and interpretation as well gender, age, religion or tribal customs” (Mamic, 2005, p. 84). Most companies, however, do not follow such rigorous methods in developing and communicating their codes with their stakeholders.

Company U and company T follow a comparable approach by which codes are developed and refined over time. These companies utilize international principles such as ILO standards, the UN Universal Declaration of Human Rights, the UN Convention on the Rights of the Child and UN Global Compact guidelines for MNCs, and they also consult with local communities, consumer associations, human rights and the Equal Employment Opportunity Commission, suppliers and NGOs in developing the codes. The following extract from company U's SSCM progress report highlights this multi-stakeholder dialogue approach:

In developing our SSCM policy, in addition to utilising the international principles to which we subscribed, we consulted our community consultative council, suppliers and NGOs.... This engagement method has systematically refined our SSCM model and continues to do so today.

On the other hand, company F is more focused on OHS and the environment side of sustainability. The company has strong requirements regarding compliance to OHS and environmental standards. The manager of the company F argues in support of the company's code:

Well, we do have a code of conduct. We've got like our [name of the supplier code policy document], which is our way of doing things... and we have set requirements around health, safety, security and environment and all those sorts of things, our golden rules, our life saving rules. All of those are built into our agreements with our suppliers.

Although there is growing recognition that the implementation of supplier codes holds great potential to improve the control and governance of SSCM issues (Mann et al., 2014), many scholars have challenged their efficacy in terms of humanizing sustainability concerns in supplier operations (Blowfield & Dolan, 2008; Egels-Zandén, 2007; Locke et al., 2007). For example, Egels-Zandén and Lindholm (2014) examine the multiple-factory audit of 43 garment factories performed by the Fair Wear Foundation. They found limited efficacy of codes of conduct and corporate auditing mechanisms in improving workers' rights in supply chains. They further argue that although codes marginally improve outcome-specific standards, such as the exclusion of child labour and forced labour, they do not identify and address the process rights' violations, including freedom of association or discrimination, in suppliers' factories. On the basis of these findings, Egels-Zandén and Lindholm (2014, p. 1) assert that “auditing is fundamentally flawed” and a weak governance tool, and they challenged the multi-billion investment by corporations in the development and implementation of codes and auditing schemes. In a similar vein, Egels-Zandén (2007) reported limited compliance by suppliers with MNC codes of conduct in the toy manufacturing sector; in fact, more than two-third of suppliers were found to be breaching the majority of standards. On the basis of the findings, they argued that “suppliers successfully deceive toy retail monitoring organizations by decoupling the formal monitored part of their organization from the actual operation part of their organization” (Egels-Zandén, 2007, p. 45).

Another element in planning is developing traceability systems that create visibility in extended supply chains by aggregating data from multiple tiers of a company's supply

chain. The international organization for standardization (ISO) defines traceability as “the ability to identify and trace the history, distribution, location and application of product, parts and materials, to ensure the reliability of sustainability claims, in the areas of human rights, labour (including health and safety), the environment and anti-corruption” (The UN Global Compact, 2014, p. 6). The aim of these systems is to monitor, analyse and improve the sustainability performance of supply chain partners. However, implementation of the traceability strategy may be too costly and a time-consuming process because it requires rigorous analysis of the entire supply chain portfolio to map risks or identify hot spots. This might be the possible explanation as to why most companies do not use this technique. One company in the sample that employs this technique is company G, which formally conducts visibility analyses of its supply base. With regard to promoting transparency in the supply chain, the sustainability manager of company G comments on the company’s factory registration programme:

Well, the first piece here is getting visibility in supply chain.... We are actually buying through agents or trading houses. But the manufacturing itself where all the environmental and social impacts are occurring – and that needs to be managed – is in factories. And in the traditional model most retailers buy through trading houses or agents and don’t necessarily have a lot of visibility of the factory process. So one of the things that we have initiated, which is about five years old now, is what we call a factory registration programme. And all our private label suppliers have to disclose their factories.

Implementation

The implantation phase involves putting SSCM policy into practice, to achieve desired outcomes set in the planning phase. Sustainability practices such as suppliers' codes of conduct and other standards established in the planning phase are implemented in the company's procurement process (Soundararajan & Brown, 2014). However, central to SSCM implementation is the training of relevant staff members involved in the execution of SSCM activities, and therefore the target audience for training must be identified in the planning phase of the sustainable procurement process (Mamic, 2005). Mamic (2005, p. 84) further argues that in implementing the suppliers' codes of conduct, "multiple layers of communication and training are required for both domestic and foreign audiences and both processes should occur at a level of sophistication and technicality that is appropriate for the recipient". It can be argued that SSCM policy cannot be implemented if staff members and supply chain members do not possess appropriate skills and knowledge of the SSCM tools, procedures, systems and other mechanisms necessary to accomplish desired SSCM outcomes. With regard to the training of relevant personnel, the manager of company T explains:

At the local level our supply chain team do yearly training on the code of ethical purchasing, and they go through a process of vetting some of the bigger New Zealand/Pacific contracts, but a lot of it happens at the group level for us.

The findings reveal that companies adopt different SSCG mechanisms to implement their SSCM strategy or suppliers' code of conduct (see Appendix 6). Some companies integrate SSCM requirements in RFP announcements while others embed these

expectations in supplier contracts (Marshall et al., 2014; Sisco et al., 2010). The manager of company A comments:

When we RFP they [suppliers] will also be asked – in addition to the description of the product or service they can supply – they will also be asked to supply us with their sustainability and environmental policies, whatever information they might have.

However, most participants mentioned that their companies use these SSCG mechanisms simultaneously. For example, SSCM standards are shared during RFP or can be transposed into a supplier's contract (Sisco et al., 2010). But it is important to note that the sustainability clause in a supplier's contract has an important function; it allows the buying company to have legal protection against any violation by its supplier during provision of the product or service. For example, the manager of company T states this requirement as:

At the group level, we've got a code of ethical purchasing. So we've actually got a code which sets out...what we require our suppliers to meet from a sustainability point of view. So that goes into all of our contracts. We have a process whereby at group level...they vet every single supplier who comes through.

In a similar vein, the manager of company B explains that initially a company's SSCM expectations are disseminated to suppliers through RFP; the same standards are then embedded in the suppliers' contracts. The manager describes the process:

So, for new suppliers or contract renewal, the sustainability evaluation is just part of whole [procurement] process...our SSCM requirements go into RFP and we also tend to put it in the [suppliers'] contract...The contract will have various things in it from a code of conduct.

On the other hand, a manager from company N indicates the company has a sustainability clause for national suppliers only, while for the procurement of minor product or service categories, sustainability is not given much priority:

Only the national suppliers...have sustainability in their contract and then they have KPIs around different sustainability performance.

The manager of company K remarks that the company shares its sustainability expectations with suppliers but these requirements are not mandatory in terms of supplier selection. For example, the manager comments that:

We have asked them [suppliers] to provide enough information around sustainability activities... [but] we don't necessarily discount an organisation that doesn't have [the] same sustainability approach [as] our company. So it's not currently a part of our evaluation criteria.

The above comments clearly illustrate the fact that there is no uniform method of implementing SSCG mechanisms. The SSCG tool chosen and applied by a company depends on business requirements. However, a company with a mature SSCM

programme follows a range of SSCG mechanisms simultaneously, which increases the quality of the actual SSCM implementation.

A supplier's self-assessment questionnaire is another way by which supplier's codes are implemented (Marshall et al., 2014). Some companies prefer to adopt an upfront assessment of suppliers before getting into a relationship with them. The aim of such a preliminary control strategy is to make sure that business relationships are developed only with those suppliers that exhibit sound sustainability practices in their operations (Sisco et al., 2010). However, the reliability of information gathered through a self-assessment questionnaire depends on the level of trust between buyer and supplier as well as on a supplier's competence to collect and analyse needed information from disparate parts of the organization (Sisco et al., 2010). Boström (2014) cautioned the use of over simplistic heuristic tools, such as a supplier's self-assessment questionnaire, because confidence and blind trust in suppliers' unsubstantiated claims, as well as simple, immaterial monitoring, may be detrimental to the buyer's reputation. Several interviewed companies use suppliers' self-assessment questionnaires upfront in their procurement process. For example, the manager of company E states that completing a self-assessment questionnaire is an essential requirement for all suppliers:

All suppliers are expected to meet the requirements of our codes as a condition of doing business with us, and they are encouraged to complete our self-assessment questionnaire to rate their performance.

Other companies use this tool, which is based on category spend or a risk management approach (Sisco et al., 2010), for their strategic suppliers. Thus, only key or strategic

suppliers are required to complete a self-assessment questionnaire. Strategic suppliers “are often those that the company sources directly from, has significant spend with and/or views as critical to production” (Sisco et al., 2010, p. 25). Foerstl et al. (2010) posit that suppliers’ assessment and monitoring require the significant time and resources of a buying company. They suggest that a buying company needs to prioritize its efforts and concentrate on those suppliers which pose significant risk and are most likely to cause reputational damage to the buying company. The manager of company T reports the company’s preliminary audit process as:

[...] the supplier selection process is clearly communicated to our suppliers...we carry out assessments to identify new suppliers that are high risk, based on the product or service supplied and the degree of association with our brand and customers. Suppliers identified as high risk are selected for on-site assessments by our auditors and independent audit firms to identify any instances of non-compliance with the code of ethical purchasing.

Company U adopts a similar process, where completion of the SSCM questionnaire by a supplier is considered an important part of the tender process. The company uses a supplier self-assessment questionnaire where the annual spend is greater than \$3 million or a higher risk in terms of product type. The questionnaire contains 120 questions, which covers areas such as human rights, the environment and compliance to legal requirements. From this assessment, suppliers receive their comparative performance rating against their peers operating in the same sector. As the manager of company U remarks:

[The] supplier questionnaire is used to identify how the supplier is going against a cohort of similar organisations in its field and if the supplier is in the top quartile of that cohort.

Similarly, company A uses a category spend and risk type approach, and a supplier's questionnaire is used only for strategic suppliers. The manager acknowledges that the company's self-assessment tool is working very well and the response rate is fairly high. The manager also recognizes it would be practically impossible to use this type of assessment for all suppliers, given that the company has thousands of suppliers and the process is time consuming and costly. The manager of company A asserts that:

We're looking across our range of suppliers and really identifying those that we believe have risks to us. And they need to be over a certain spend threshold, but that threshold's quite low and it's really on a risk basis ... we've had quite a high response rate. About 90 percent of the clients that we ask returned, and also we found that about 75 percent of our good suppliers already have supply management practices in place, and of that 75 percent, 50 percent tell us that they are doing as much as they can. So we've got examples of some of our suppliers being absolutely exemplary through to some suppliers definitely needing some help.

The most striking finding to emerge from the data is that perceived supplier risk is a key factor determining the choice of an appropriate tool and the level of scrutiny involved in the supplier selection process. It is argued, therefore, that perception of risk associated with a particular supplier, product or service is an important contingency variable in

SSCM implementation. Higher perceived supplier risk leads to rigorous scrutiny, while low risk indicates less formal sustainability checks from buyers.

Audit waiver schemes are yet another useful method for the initial screening of suppliers. The findings indicate that few companies use audit waiver schemes for suppliers on a case-to-case basis. In the pre-qualification stage, suppliers are asked to provide an audit report conducted by a third-party organization. If a supplier holds a valid up-to-date third-party report then an audit waiver is granted to that supplier, and that supplier does not need to go through a factory audit at the beginning of the supplier selection phase. The manager of company G explains this process:

The way that works is when suppliers register their factories. We offer them an opportunity to apply for an audit waiver, which means they can furnish an existing third-party report ...we do a desktop review and in some cases, not all, we will accept that report. If we don't, if there's sort of no waivers applied for or if we reject the application, then we go ahead and schedule our own audit.

Most of the interviewed companies consider commercial criteria, including quality, costs, flexibility, ability of the supplier to deliver, supplier innovative capability, management approach, product returns rate and customer satisfaction reports (Krause, Vachon, & Klassen, 2009), to be a central priority in their procurement decisions, while social and environmental criteria are given secondary priority. The managers of company V and company G emphasise that their companies give more weight to commercial aspects during the procurement of products or services than to social or environmental aspects.

Certainly, the first thing that we would analyse is cost and the environmental aspects of it would be, while important, not the key priority.

Obviously the first criteria are commercial right. They [suppliers] have to have competency, they have to have capability; they have to be supplying or proposing to supply a product that we think our customers want.

In some cases, interviewed companies have transactional arms-length relationships with multiple suppliers rather than long-term partnership-based relationships with a particular supplier. The following comment of the manager reflects this situation:

Where possible, we try to have several suppliers to provide ... cost efficiency and competition rather than [be] dependent on particular supplier for an input unless there's a key technology. So generally food labelling is captured by key technology so options for other suppliers are more limited in that area. (Company W)

Procurement decisions also depend on the type of product or service a company is procuring and what options are available in the market. Therefore, SSCM strategy is not uniformly applied in the procurement of products and services. The manager of company J describes this:

When selecting suppliers it really depends on what we're looking for. The criteria of the selection are various and it probably depends on what options are within the market.

The contingent nature of procurement decisions is best explained in the example provided by the manager of company C. Here, the environmental sustainability capability of the supplier is an evaluation factor vital to the buying company in the supplier selection process.

[...] we are tendering our waste services through our stores and within that tender we are saying to perspective waste services companies, if you want to service our stores you have to be able to implement a new waste minimization plan, which will reduce the amount of waste we send to [the] landfill, and will actually recover more of our waste for recycling.

Some managers assert that the governance of supply chain is a complex task, especially when there are hundreds or thousands of suppliers from which a company is procuring its products or services. The manager of company C remarks:

Our supply chain is so diverse and so spread, and so fragmented. We have probably around 2,000 suppliers and sitting underneath that group of suppliers will be multiple factories... so we have to prioritise ... and the way we do that is we apply the Pareto principle... we choose factories or suppliers who are mature to us, are commercially significant and also where we have influence, and that's where we apply the filter.

Thus, to deal with the issue of complexity, companies often utilize the Pareto principal (Brammer et al., 2011). The principle suggests that “80 percent of the company’s spend

in the supply chain goes to 20 percent of its suppliers” (Brammer et al., 2011, p. 29). This means that sustainability screening is only applied and monitored at the Pareto group level, which is based on business volume, because it would be extremely difficult for companies to screen all their suppliers. The manager of company C further notes that the issue of complexity is related to the extended supply chain. The company policy is to procure its products from those suppliers which have relatively a simple and transparent supply chain where visibility of supply can be warranted. The manager argues that:

The more complicated and longer the supply chain the higher the risk...we recently had an issue where we put out a tender for the supply of a certain product for our own [private] label. It was a material that did have quite a lot of risk associated with it from an environmental perspective and so I made the recommendation that we should be with the shorter supply chain because we would have more assurance around the environmental credentials.

This above comment resonates with the literature, which suggests that by reducing the middleman from the supply chain and collaborating directly with small suppliers the buyer can help reduce the risk associated with suppliers and increase the revenues of small companies (Boström et al., 2014; Chkanikova & Lehner, 2014; Sisco et al., 2010). Furthermore, Schaltegger and Burritt (2014, p. 237) argue that “less step in the supply chain and less geographical spread (i.e., the supply chain steps are geographically nearer to each other) will often lead to a reduction of sustainability problems”. A good example of supply chain optimization is Nestlé, which removed five layers of suppliers within its cocoa supply chain to address the issue of child labour at cocoa farms, by

building the capacity of farmers through training and enhanced farm practices. This strategy helped Nestlé to improve the standard of living of farmers by making sure the value of the cocoa reaches the farmers, and also reducing the business risk associated with lower tier suppliers (Barrientos, 2011; Sisco et al., 2010).

Alternatively, companies which procure products, particularly from developing countries, reported the issue of weak regulatory frameworks in those countries. Although in some developing countries essential laws and regulations address sustainability, the implementation of regulation is relatively poor. The manager of company E asserts:

[...] in our supply chain the biggest concerning areas is not necessarily our New Zealand suppliers, but it's our suppliers coming from basically countries where the legal framework is just not anywhere near the same standard [what we have in New Zealand].

The manager of company G also acknowledges the issue of weak regulatory regimes in developing countries. Poor regulatory regimes present challenges for auditing programmes for buyers due to the discrepancy between the regulatory framework and industry norms. The manager posits that:

The way industries work in developing countries in the export sector, they don't operate to the same expectations that say manufacturing environments or industries in the West would operate...there's a discrepancy between the regulations in those economies and the way that industry actually practices ... that represents a challenge obviously for any monitoring or assurance programme

where the actual industrial norms are less than or different from the legal framework.

Cultural difference is another important factor that plays a significant role in trading relationships between buyers in developed and suppliers in the developing nations (Parmigiani et al., 2011; Sharfman et al., 2009). For example, in some Asian countries the business culture is more relationship based than objective. From the buyer's perspective, this issue requires sensitivity to local culture and norms as well as an understanding of actual production settings. Without understanding these issues, it would be difficult to materialize any positive SSCM outcomes (Boström et al., 2014; Loconto, 2014).

Furthermore, the earning aspiration of workers is different in some Asian countries; that is, the willingness of workers in these countries to earn and repatriate and save that money for the future enables them to work longer hours. Under such circumstances, it is important for management to understand and accommodate these cultural differences in order to develop trust-based relationships with their suppliers. If Western business expectations were forced onto suppliers in developing nations without adaption, this would create an industry-wide audit falsification (Locke, 2013; Soundararajan & Brown, 2014). For example, Jiang (2009b) notes that in some developing countries suppliers keep two or more sets of books/records to conceal evidence of the violation of workers' rights, such as minimum wage rates and overtime payments. The manager argues:

There's a real tension there between the way a lot of Western brands are operating in these environments, and you know how local industry responds ... the cultural

response to those expectations, which is seen as unreasonable [by suppliers/workers of developing countries], patronising, a form of cultural imperialism and also hypocritical; the cultural response to that has been to beat those brands at their own game. [Company G]

The finding is consistent with findings in past studies; for example, Boström et al. (2014), who argue that a lack of understanding of cultural differences promotes information asymmetry and suppliers' opportunism, where it would be difficult for buyers to implement a sustainability programme in its true spirit. The manager of company G explains this scenario as:

The business culture [of developing countries] itself is very different to Western culture. For example, the Chinese business culture is relationship based. It's about friendship, it's about connections, more so than in the West we have a much more objective approach to procurement, it's more formal, and it's purely commercially based and so forth ... we in the West might think is desirable we do our 40 hours, perhaps we're going to do 20 hours [of] overtime. In many sectors in the export industry in China if you are only offering work 60 hours a week you could not retain the workforce.

Monitoring and Auditing

Once the implementation phase is actioned and suppliers start supplying to a buying company, it is essential to continually monitor the activities of suppliers according to the terms and conditions set out in the supply contract. The auditing and monitoring phase generally involves “development of corrective action plans with supplier factories

– detailed lists of areas requiring improvement and timelines for their execution” (Mamic, 2005, p. 84). According to Boyd, Spekman, Kamauff, and Werhane (2007), formal monitoring is performed with the aim of achieving legitimacy by signalling a buyer’s SSCM commitment to its stakeholders and to gauge the supplier’s compliance to SSCM implementation. However, “compliance-based approaches to monitoring have resulted in concerns about costs, disruptions to production of suppliers, doubts about the accuracy of the information collected and potential risks to the safety of workers” (Sisco et al., 2010, p. 35).

Boyd et al. (2007) argue that issues such as a lack of monitoring standardization, depth and breadth of auditing as well as monitoring frequency make it challenging for stakeholders to assess the performance of different supply chains. They further stressed that some level of monitoring is warranted for legalization purposes; however, excessive use of monitoring is detrimental to the buyer–supplier relationship, affecting the mutual trust and commitment of both parties (Boström, 2014). Also, a recent study by Mann et al. (2014), found that the auditing and monitoring procedures of buying companies often lack clarity and depth in description about their audit procedures. They note that companies’ statements about their audits do not clearly show how regularly audits are conducted, or details of enforcement mechanisms.

Companies can use a range of monitoring techniques to ensure suppliers’ compliance to a purchase agreement and ethical code of conduct. The structure of the auditing mechanism of a buying company depends on its requirements and the degree of risk-associated procurement. For example, “an information technology company may find that many of its highest risks are focused on the raw materials that are used in the

manufacturing of its products. It would therefore want to focus its supply chain sustainability program at the base of its supply chain program” (Brammer et al., 2011, p. 29). Therefore, the findings indicate that some large companies have a dedicated auditing function, which is responsible for the enforcement and compliance of SSCM standards (Dickson, Eckman, & Loker, 2009; OECD, 2001). For instance, a company may have permanent roles or positions for the monitoring of the activities of suppliers. This policy is highlighted on company E’s website:

It is our policy that operational contract managers regularly monitor the supplier’s performance against the contract, including compliance with the code. If the supplier is found to be non-compliant, the contract manager may seek the development of a remediation plan by the supplier.

The manager of company E also states that once a supplier goes through initial due diligence, and a contract is negotiated with the company, the company assigns a commercial manager to carry on due diligence work while the supplier performs the actual work. The manager comments that:

Once the contract is in place ... it gets handed over to the business manager. Most of the time, our critical suppliers get managed by someone within our team, such as a commercial manager or relationship manager, who is responsible for kind of a portfolio of critical suppliers that they manage.

On the other hand, other companies rely on third-party verification systems to monitor the activities and practices of their suppliers (Dickson et al., 2009; OECD, 2001). Such audits are generally conducted by NGOs or independent agencies (Soundararajan &

Brown, 2014). An audit may be a simple desktop audit or comprehensive onsite audit of a supplier's facilities or factory. The choice of the audit depends on existing or potential associated risk as well as any incidents of non-conformance by the supplier in the past.

The manager of company E mentions that:

Our suppliers' audits are conducted by an independent, third-party auditor using protocols developed against the ISO 26000 standard.

Although it is generally recognized that an independent third party provides impartial, accurate and valuable information regarding working conditions or labour standards in the suppliers' operations (Soundararajan & Brown, 2014), concerns have been raised about the credibility of third-party auditing companies (Blowfield & Dolan, 2008), and there is a lack of consensus as to what constitutes best auditing practice due to the subjectivity involved in auditing practices. For example, the vested interests of third-party auditing organizations may undermine the accuracy of the verification outcomes. These companies may manipulate actual performance or results of audits in order to entice their client to retain their business and nurture current relationships (OECD, 2001). The OECD (2001) documented the issue of lack of uniform auditing standards as follows:

In the absence of widely accepted audit standards, even well-known people or companies using or offering audit services can have different views on what comprises reasonable audit practice. In many fields of corporate responsibility (especially supply chain issues), disagreement on reasonable behaviour by firms and on audit practice is pronounced. Some progress toward consensus on basic issues will be necessary before effective audit

practices – that is those that are acceptable, credible and useful to a broad cross section of information users – can emerge. (p. 12)

Furthermore, companies often engage in two types of auditing, based on the depth of verification involved. The first type relates to risk-based auditing where companies audit those suppliers where high risk is involved, or it may be a strategic supplier with a high trade volume in the first tier of suppliers (Sisco et al., 2010). Risk-based auditing can be used at the implementation stage when companies are selecting their suppliers; the same method can be applied at the monitoring and auditing stage when suppliers begin to provide products or services to a buying company. The manager of company E describes the way the company conducts its audit and the complexity involved with auditing the entire portfolio of the company:

We don't necessarily go and audit the entire portfolio. You take a risk approach to try and manage that; to something that you can do because trying to do 15,000 [suppliers] would be an extreme cost to [company name].

The second type of auditing technique is a tier-based auditing method (Sisco et al., 2010). This method requires an organization to go beyond monitoring its immediate first-tier suppliers (Mamic, 2005). A focal company that adopts this method encourages its direct supplier to take responsibility for their suppliers or their supplier's supplier. In practice this approach is very difficult; it would be practically impossible for large companies to manage the ethical behaviour of their second- or third-tier suppliers, as their first tier may involve hundreds or thousands [for MNCs] of suppliers. Some scholars have recommended a gradual approach where a buying company initially

implements a code of conduct at the first tier of suppliers and then solicits “their support in implementing the code of conduct further down the supply chain” (Mamic, 2005, p. 86). The findings reveal only 3 companies in the sample that use this method, and then only to a certain degree, as they only encourage their suppliers to monitor the activities of their suppliers rather than making it compulsory for their suppliers to audit them for sustainability. The manager of company U argues in favour of tier-based auditing:

The requirements are universal, measurable, unambiguous and transferable. Hence we ask our suppliers to adopt similar principles with their key suppliers, to truly tackle sustainability throughout our supply chain.

The frequency of an audit varies from company to company. For some companies, audits are carried out regularly to monitor the activities of suppliers, while others conduct audits less frequently given the cost and effort involved in conducting a detailed examination of suppliers. The finding is consistent with the findings of past studies (e.g., Boyd et al., 2007), which reported that the frequency of auditing varies among companies, and this lack of uniformity makes it difficult for stakeholders to compare different companies’ auditing performance. The manager of company A indicates that:

We have conducted this audit programme twice now in the past four years, so it’s kind of [an] intensive piece of work.

The findings further reveal that most interviewed companies have a strict policy regarding supplier non-compliance. It depends on the nature of non-compliance; for example, if the incidence of non-conformance is minor a supplier goes through a

remediation programme where they are given sufficient time to subdue an issue (Dickson et al., 2009). On the other hand, if the non-compliance is of an extreme level involving zero-tolerance issues the buying company discontinues its relationship with the supplier. This reflects Brammer et al.'s (2011, p. 37) and Boyd et al.'s (2007) recommendations to terminate business relationships with a non-compliant supplier who does not hold similar values to that of the buying company, and who, despite repeated notifications and warnings, fails to comply with “zero-tolerance” sustainability issues. The manager of company G describes the company’s policy on zero-tolerance issues:

[...] if a factory [repeatedly] fails at the time of the audits, we discontinue the relationship with the factory. We do have a bottom line and our ethical values supersede the commercial ones. We’ve made some big decisions over the years where we have actually taken some commercial pain by suspending a relationship or even embargoing product that we have already purchased; that we’ve found out retrospectively came from an unethical source.

Some interviewed companies conduct audits for specific elements such as health and safety or quality assurance. The audit systems for such companies are more customized and look for key aspects important to the company rather than being an inclusive audit which examines all aspects of sustainability. The manager of company L describes the company’s audit mechanism:

We do audit them [service companies] regularly and do site visits from a health and safety point of view and from a waste management point of view as well, just because some of the waste products are hazardous.

Similar views are expressed by other managers about the scope of their audit programmes. The manager of company J notes that the company has robust quality audit systems but social and environmental audits are not conducted in the same spirit.

The manager states:

We have got some fantastic quality audit systems...if you look in our aeronautical space, particularly our engineering because of the compliance requirements of the industry that we have. We also have a huge amount of quality audits in the catering space and logistic space because we have to. But when it comes to auditing on sustainability, it's not something that we have a regular structure around or it's not really black and white yet.

It is argued that, regardless of the type of monitoring/auditing procedures used for compliance purposes, higher levels of monitoring may create distrust and frustration in the buyer–supplier relationship, and accordingly, suppliers may adopt retaliatory or deceitful behaviour that reduces implementation of SSCM compliance. In this regard, a supplier may feel bullied by a buyer due to over-interference in internal business affairs. They may also experience a lack of autonomy and tend to “engage in non-productive, even harmful, activities just to show dislike for the bully's actions” (Boyd et al., 2007, p. 346). In a similar vein, Jiang (2009b) argues that market governance systems, such as overdependence on audits, are not sufficient and are a relatively weak form of governance. Under conditions where compliance-based governance mechanisms only are utilized suppliers would attempt to pass only the enforced minimum requirements during the supplier audit stage while their focus would not be to improve sustainability. Thus audit and monitoring activities must be complemented by mutual adaptation activities and open and honest communication among supplier, buyer and factory

workers (Jiang, 2009a, 2009b; Parmigiani et al., 2011; Soundararajan & Brown, 2014). On the other hand, if compliance-based mechanisms are overused and collaboration with suppliers is compromised, there is a possibility that “audits can drive dishonesty, a lack of openness, and even fraud, when suppliers feel forced to provide the ‘right’ answer or face serious implications (e.g., the threat of substitution)” (Jiang, 2009b, p. 88).

Supplier Development and Engagement

Some level of engagement takes place at all phases of the sustainable procurement process – including planning, implementation and auditing of supply management – but the continuous development of supply chain members requires active engagement with these members. Essentially, an open-learning feedback loop provides an opportunity for supply chain partners to actively coordinate with each other to come up with new and innovative solutions for SSCM issues through training and knowledge acquisition activities (Oelze et al., 2014). Boyd et al. (2007) emphasize that a buying company can improve SSCM compliance by sharing the financial and non-financial motivations of suppliers. Similarly, Soundararajan and Brown (2014) argue that buying companies should utilize both financial and non-financial incentives, such as changes in price structure, improved information and risk sharing, coaching and mentoring to develop buyer–supplier trust.

Accordingly, in the supplier development and engagement phase there is a further opportunity for focal companies or buyers to collaborate with their supply chain members and recognize the efforts of their suppliers by initiating recognition and reward schemes. These schemes may be useful in terms of encouraging the morale of

suppliers to continually provide innovative solutions, which can minimize negative sustainability impacts across the supply chain network. These schemes also benefit suppliers to improve their competitiveness in the marketplace as more buyers develop relationships with suppliers that excel in their respective field or supersede their counterparts in sustainability performance.

Sisco et al. (2010) identify two forms of engagement with suppliers: broad engagement and deep engagement. Broad engagement involves setting and communicating expectations to suppliers as well as asking suppliers to assess their own performance. Conversely, deep engagement includes remediation and capacity building of suppliers through resource provision, training and support activities. This also involves developing long-term partnerships with suppliers to improve their sustainability performance. A number of scholars have emphasized that, to accomplish improved SSCM performance, companies need to develop harmonious relationships with supply chain members by promoting effective collaboration and cooperation mechanisms (e.g. Akamp & Müller, 2013; Brockhaus et al., 2013; Gimenez & Sierra, 2013; Jiang, 2009a; Seuring, 2011; Sharfman et al., 2009; Vachon & Klassen, 2006b; Vachon & Klassen, 2008; Zimmermann & Foerstl, 2014).

Sharfman et al. (2009) further argue that the level of corporate proactivity and trust between a buyer and its suppliers enhances SSCM performance. It is pertinent to note that a single actor or company does not hold all the resources nor can it control all the activities along the supply chain, as is supposed by traditional SSCM perspectives; a modern SSCM perspective suggests the need for cordial trust-based relationships in the supply chain network (Frostenson & Prenekert, 2014), which improve a company's

performance (Zimmermann & Foerstl, 2014). In a similar vein, Soundararajan and Brown (2014, p. 16) assert that “powerful and resourceful global buyers must attempt to change the nature of their relationship with their suppliers by moving beyond this established arms-length relationship towards a closer one underpinned by commitment and mutual trust”. Some scholars have gone further and challenged the effectiveness of the collaborative paradigm. For example, Lund-Thomsen and Lindgreen (2014) note that although a collaborative paradigm may potentially rectify some shortcoming of traditional compliance-based paradigms it unfortunately would be unlikely to alter the power relationship in global supply chains or improve the working conditions of workers. This is because of the constraints imposed by ever-increasing competition among suppliers which force suppliers to remain viable in providing a cheap source of production that makes them less likely to invest in the upgrading of working conditions. In other words, production would be shifted to localities where a cheap labour advantage was still available to international brands.

Boyd et al. (2007) emphasize the significance of establishing procedural justice in achieving SSCM – through mutual respect, shared goals and trust in buyer–supplier relationships. They argue that the buying company must not overuse quantitative monitoring mechanisms and evaluate the performance of a supplier solely on quantitative metrics and measures; rather, buyers need to understand the underlying key driving forces such as motivation, level of trust and commitment and openness of information sharing, which are critical to improving the sustainability performance of a buyer’s supply base. Thus, greater monitoring rooted in a transactional relationship should be replaced by a procedural justice paradigm between buyer and supplier. The

investment in procedural justice improves SSCM implementation through buyer–supplier commitment. Boyd et al. (2007) state that:

With the heightened commitment comes the greater likelihood that common goals will emerge and both parties will work towards a common vision, decreasing the likelihood of the opportunistic behaviour monitoring is intended to minimize. Heightened commitment means the supplier is more likely to be responsive to the needs of the buyer, and also to be flexible in its interpretation of contractual commitments in the face of changing environmental conditions. (p. 347)

Some scholars have gone further, to argue that there is an emerging need for an organization to have collaborative relationships with a wide range of stakeholders, including non-state actors, rather than just suppliers in developing SSCM (Frostenson & Prenekert, 2014; Von Geibler, 2013). For example, Frostenson and Prenekert (2014, p. 1) assert that supply chains “should be managed not only in close connection to suppliers, but also with regard and respect to other constituents that may be crucial to any sustainable approach (for example non-governmental organizations, trade unions, business organizations)”.

The findings suggest that most companies collaborate for commercial or economic reasons only, while others frequently use broad engagement mechanisms (see Appendix 6). In practice, only a handful of companies adopt deep engagement mechanisms (Boström et al., 2014). Several managers highlighted the significance of developing long-term partnerships with suppliers for sustainability but the findings indicate that,

actually, only a limited number of companies practice the deep-engagement approach. This resonates with previous research that found a lack of supply chain integration in which companies tend to use mandated SSCM implementation rather than a more collaborative approach with supply chain partners (Brockhaus et al., 2013; Soundararajan & Brown, 2014). Soundararajan and Brown (2014, p. 12), in a recent study of the garment sector in India, reported that “buyers impose these [standards or certifications] parameters without consulting any of their suppliers or without specifying or helping out their suppliers on how particular parameters can be implemented”.

There are few exceptions in the data, such as company G, that formally conduct training and workshops for suppliers as well as an informal communication with them to improve their capacity building for sustainability. The manager of company G describes the process of supplier development:

More recently we started to do development work, where we send suppliers to workshops, and at the end of every audit typically the factory is given a corrective action plan. The factory is expected as a condition of business continuity to execute those corrective actions over a period of time. So the auditing itself does generate development or improvement of standards...it does have an educational sort of function.

This is consistent with the literature that suggests that cooperation with suppliers involves training and developmental activities, which can potentially improve suppliers’ compliance to SSCM by raising the capability, knowledge and awareness level about

best practice (Andersen & Skjoett-Larsen, 2009; Sisco et al., 2010). Jiang (2009a, 2009b) argues that responsible buyers demonstrate joint responsibility and mutual reward sharing with suppliers for improving SSCM. In contrast to dictating or imposing their demands onto suppliers, responsible buyers view themselves as a part of the problem and the solution at the same time. Sisco et al. (2010) have provided a number of examples of companies, such as Levi Strauss & Co., Nestlé, and HP, which have initiated training and consulting services for suppliers on SSCM. However, it is important to note that very few companies in this study invest their time, resources and relevant support, such as technical assistance, developing suppliers' capability and awareness regarding SSCM implementation.

The buyer–supplier partnership and an effective communication loop between a supplier and a buyer are imperative for implementing the deep-engagement approach. For example, company E encourages two-way dialogue and a partnership approach with its suppliers. The company considers that effective engagement with suppliers improves the likelihood of procuring sustainable products or services by developing long-term relationships. This approach is acknowledged by the company on its website as:

We encourage two-way dialogue and work in partnership with our suppliers to develop an understanding of best practice in each category – and work out how, together, we can extend it across our supply chain.

A similar remark is made by the manager of company E about the company's approach to supplier engagement and development practices. The manager states that:

[...] once we have identified evidence of not complying with that code of practice then the intent is to work with the supplier as much as possible to overcome whatever the concern was on that particular piece of remedy, that particular activity, and minimise that risk in the supply chain.

Some companies use advanced technologies to help them interact and collaborate effectively with supply chain partners in the accomplishment of joint sustainability objectives. For example, company T uses a machine-to-machine eco-system model, which enables the company to measure environmental sustainability outcomes, such as use of resources, and to collaborate effectively with business partners who manage areas such as fleet tracking or energy management services to achieve desired targets. The manager of the company argues in favour of the supply chain partnership:

SSCM is about building longer term partnerships or trying to create shared value or actually starting to work in a more collaborate fashion about how we solve problems.

The manager of company K also recognizes the benefits of developing good relationships with suppliers. By collaborating with the waste management company and sharing expectations with the supplier, the company is able to compost a large amount of waste which previously went to the landfill. As the manager posits:

We're looking at introducing a trial for recovering waste out of the airline because we've done an audit of the waste. We realise that 70 percent of that waste could be composted – and so why is it going to landfill? So, engaging with a supply

chain member who understands that and wants to work with you, has totally transformed the way we're managing waste in the terminal.

Companies usually prefer to adopt a partnership approach when developing the capability of their suppliers. Some managers comment that as New Zealand is a small country and has a limited number of suppliers for certain products or services, it is essential to have long-term partnerships with suppliers. The manager of company E comments on this issue:

New Zealand is small and it's important that we have good relationships with our suppliers.... so it's kind of us saying look let's help you out, we can help each other out and we're doing it in partnership, and as result kind of lifting everyone up to the same level which I think is really important.

The findings further reveal that some companies work closely with their suppliers and recognize the significance of developing shared mind-sets; however, their collaboration is focused purely on the commercial side of the business rather than developing the social and environmental sustainability of suppliers. The management approach of such companies is fragmented, ignoring the central premise of sustainability which is rooted in simultaneous triple bottom line (TBL) improvements (Brown, Dillard, & Marshall, 2006; Elkington, 1998). Managers, on the other hand, concede they are in process of learning new things about sustainability from suppliers, as sustainability expectations become more important. As the manager of the company J explains:

When we're engaging suppliers and we are giving constructive feedback, we do try to actually communicate better with our suppliers and actually treat them more

like a supply partner rather than a customer type approach. That's changed a lot over the last five to seven years...but again too I think particularly to be quite honest in the sustainable space we're actually learning a lot from suppliers rather than telling them what to do.

The manager of company V acknowledges that the company supports a collaborative approach with its suppliers. In addition, trust-based relationships often provide commercial benefits to both suppliers and buyers in terms of managing their business commitments. For example, the manager comments that:

We've developed personal relationships with a lot of our suppliers. A good example would be one of our packaging suppliers. Recently they had some major problems on their site with one of their machines. The fact that they were open with us – there's good ongoing communication backwards and forwards – meant that we could manage our production around their issue. That minimises the impact to their business and there's the costs to them, it minimises the impact to our business and the cost to us. So it's more efficient having those partnerships and good working relations in place.

A focal company's relations depends upon the type of supplier and a particular product or service that supplier is providing to the company. If the product or service is not critical to the company then the nature of relationships are arm's length transactional in nature where they each work for their own self-interest. Conversely, companies tend to adopt collaborative relationships with strategic suppliers whose support is critical to the success of buying companies. The manager of company F remarks:

[...] some suppliers you don't need to catch up with all the time. You're very transactional and you're not doing a lot. Whereas some of our suppliers, who are transporting our fuel around the country, you would be getting in touch with them a lot more often...we deal with them on a more regular basis and quite often have contact.

Reward, incentives and recognition programmes hold significant value in terms of motivating suppliers to embrace the continuous improvement approach (Andersen & Skjoett-Larsen, 2009; Jiang, 2009b; Parmigiani et al., 2011; Soundararajan & Brown, 2014), and to come up with innovative sustainable products or services. However, the findings suggest that very few companies have reward and recognition programmes for their suppliers. Most of the companies mentioned that suppliers who are compliant with their SSCM policies continue to receive purchase orders. On the other hand, some managers acknowledge that they are in the initial phases of SSCM implementation and therefore such schemes are not yet established due to issues such as resource constraints. The manager of company A comments on his company's incentive policy:

I don't believe the New Zealand supply chain is advanced enough for that [incentive programmes for suppliers] at this stage. Given that we are one of the few companies in New Zealand asking these questions [self-assessment questionnaire] from our suppliers at this stage. We haven't gone as far as setting up an awards programme or anything like that for our suppliers at this stage... also we don't have the full resources to deal with, to do an audit programme over our entire supply chain.

Company F, on the other hand, considers its suppliers in the annual awards. This award scheme is basically for company staff but key suppliers are also nominated for awards.

The manager notes that:

We have some award process at the moment. We have them for our staff but suppliers can also be nominated for those same awards. What we are actually looking at doing this year is separating it out a little bit and looking at having a separate one for suppliers.

It is worth noting that companies which have relatively mature SSCM programmes provide a regular structure for positive reinforcement for their suppliers. The aim of such initiatives is to encourage suppliers to come up with innovative solutions that reduce the sustainability impacts of the entire supply chain network. This is clearly acknowledged by company T on its website:

Sustainability is a key pillar in the way we measure our suppliers' overall performance. Our sustainability assessments enable us to identify problem areas with our suppliers and prioritise specific areas for improvement as well as rewarding best practice through our annual supplier sustainability awards.

SSCM Reporting

The public disclosure of the SSCM performance is an essential element of the sustainable sourcing process. SSCM reporting is a valuable tool, which can be used to demonstrate a company's commitment to sustainability and responsible business behaviour to its stakeholders. SSCM reporting involves a mix of qualitative and

quantitative information, which is often disseminated using different communication channels, such as stand-alone sustainability or environmental reports, a sub-section in an annual financial report or on companies' websites (Kozlowski, Searcy, Bardecki, & Edgeman, 2015). Increasingly, stakeholder groups expect companies to publicly report their SSCM performance and become more transparent (O'Rourke, 2014; Tate et al., 2010) – especially companies operating in a sensitive industry where the presence of unethical supply chain practices are considered relatively high or where in the past companies were criticized for poor working conditions, such as the apparel and sporting goods industries. Sisco et al. (2010, p. 62) state that “public reporting can be a tool to stimulate and enhance sustainability and transparency in the supply chain. It also demonstrates the management of environmental and social impacts and the assurance of good governance in the supply chain to both internal and external stakeholders”. Moreover, companies can utilize various guidelines, such as the Global Reporting Initiative (GRI), the ISO 14000 series and the Social Accountability 8000 Standards to report their sustainability performance (Lozano & Huisinigh, 2011).

Surprisingly, however, the findings reveal that the majority of interviewed companies undertake weak to moderate levels of public reporting of their SSCM performance (see Appendix 6). Only a few companies in the sample (e.g., companies E, G, U, and T), have a systematic and relatively mature SSCM reporting structure. Other companies in the sample that report their SSCM performance do not provide a holistic overview of their SSCM impacts, covering all economic, social and environmental dimensions. It is also significant to note that the reporting companies tend to focus more on environmental and economic aspects of SSCM; and social impact reporting is relatively scarce. For example, only a few interviewed companies annually report the non-

conformance of their suppliers and actions taken against those suppliers unable to meet the sustainable procurement goals. Kozolwski, Searcy, Bardecki and Edgeman (2015) examined corporate sustainability reporting in the apparel sector, and reported that a great deal of reported sustainability information was associated with SSCM performance. On the other hand, O'Rourke (2014) argues that, globally, companies are increasing their focus on SSCM practices but need better measurement and reporting of SSCM impacts in the entire supply chain. Similarly, Mann et al. (2014) found that only a few companies publicly report code of conduct enforcement on their websites, which is essential to improve the visibility and accountability of companies' SSCM performance to stakeholders. They also suggested that frameworks such as GRI should be used for the purpose of public disclosure.

5.5 Sustainable Supply Chain governance (SSCG) Model

This section introduces the sustainable supply chain governance (SSCG) model (see Figure 5.2). The model is developed in view of the empirical findings of this research and the prior SSCM body of knowledge, and extends previous models suggested by Baumgartner and Ebner (2010) and Gimenez and Sierra (2013). Baumgartner and Ebner (2010) apply the maturity levels of companies, and propose four types of company strategies – introverted strategy, extroverted strategy, conservative strategy and visionary strategy. They argued that as the degree of a company's maturity increases from a rudimentary level to a sophisticated level on the maturity grid, the company tends to become more proactive, and as a result their sustainability performance improves. However, the corporate sustainability strategies proposed by Baumgartner and Ebner (2010) relate to a general sustainability context rather than a SSCM context. Thus, one of the aims of this study is to transform Baumgartner and Ebner's (2010)

corporate strategies into the SSCM context using the empirical findings of the current study.

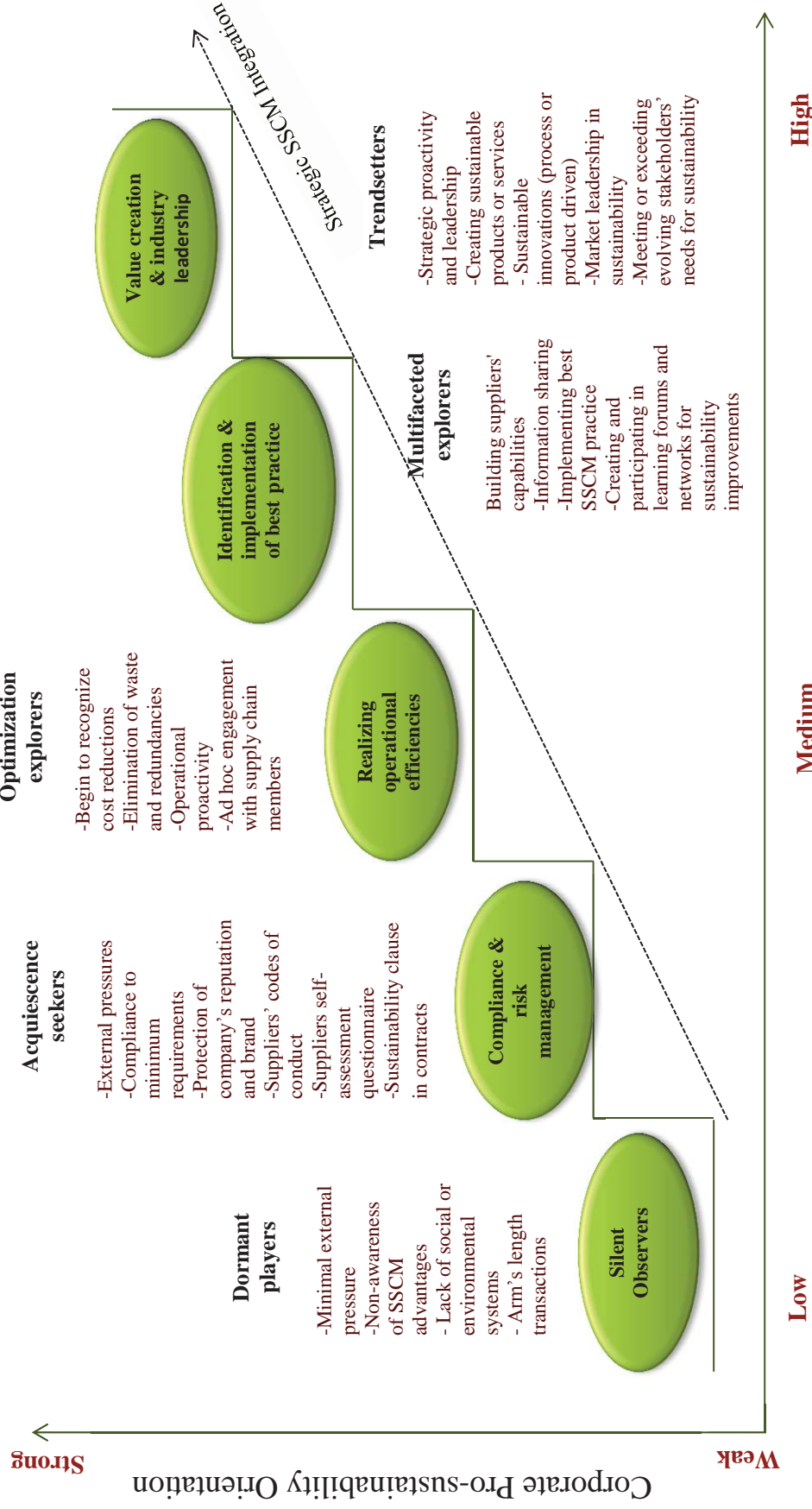


Figure 5.2: Sustainable supply chain governance (SSCG) model

According to Baumgartner and Ebner (2010), companies that follow an introverted strategy, generally focus on risk mitigation and adhere to mandatory business or legal requirements only. Extroverts, on the other hand, tend to accomplish legitimization and credibility in society by promoting their sustainability commitment to stakeholders, but responsibility for sustainability management often resides in the PR or communications department. Moreover, those companies that adopt a conservative strategy put an emphasis on achieving operational efficiencies by improving internal process and strict cost reduction measures. Such companies often employ sophisticated technologies, such as improved environmental and occupational health and safety systems, to achieve operational optimization. For such companies, society-related sustainability issues and self-promotion are of less importance. Finally, companies that pursue a visionary strategy have high levels of sustainability commitment, and their response to internal and external sustainability issues is holistic and more systematic than all previous strategies.

Gimenez and Sierra (2013), on the other hand, identified four supply chain governance strategies. These strategies are inactive, reactive, active and proactive. According to Gimenez and Sierra (2013), companies use two forms of hands-on governance mechanisms – supplier assessment and collaboration. Those companies that adopt an inactive strategy tend to have a low application of supplier assessment and collaboration, while companies that follow a proactive strategy have a profound application of assessment and collaboration governance mechanisms (Gimenez & Tachizawa, 2012).

The SSCG model for this study involves two dimensions: corporate pro-sustainability orientation and SSCM maturity. Corral-Verdugo et al. (2009, p. 36) define pro-sustainability orientation at the individual level as “the willingness [of the lead individual] to ensure the long-term reciprocal sustainability of human-nature interactions, and thus predict individual pro-environmental behaviour in everyday life situations”. This definition can be transposed into a business context, and the corporate pro-sustainability orientation in this study can be defined as the willingness of a lead company to integrate social, economic and environmental sustainability practices at the operational, strategic and supply chain levels to achieve internal operational excellence and improve stakeholder value across the supply chain network.

Conversely, the maturity dimension of this model reflects the incremental but continuous development of a company’s SSCG systems. A low level of SSCM maturity indicates that a company has little understanding and strategic proactivity for the implementation of sustainable sourcing systems and mandatory rules and laws only are valued by the company. A high level of SSCM maturity indicates that a company has well-developed SSCG systems (both formal and informal) in place to support its SSCM strategy (Baumgartner & Ebner, 2010). However, it is pertinent to note that when conceptualizing sustainability maturity, Baumgartner and Ebner (2010) have not clearly stated the evolving nature of sustainability maturity in a company and how it transforms over time. Therefore, in this study SSCM maturity is conceptualized as a dynamic construct, which is influenced by two factors. First, the level of SSCM maturity improves with time as well as resources deployed by a company for the development and implementation of the SSCM strategy. Second, the level of SSCM maturity is constrained by the company’s sensitivity to stakeholders’ claims. For instance, a

company may have mature and well-developed SSCG systems, but issues such as an unforeseen financial crisis or lack of stakeholder interest may diminish the company's propensity to practise or invest resources in a SSCM strategy.

The SSCG model in this study represents five progression stages – dormant players, acquiescence seekers, optimization explorers, multifaceted explorers and trendsetters. The dormant players include companies that have a weak, corporate pro-sustainability orientation and low SSCM maturity. Dormant players usually embrace an inactive SSCM strategy (Gimenez & Sierra, 2013), and tend to have a 'least bother attitude'. Such companies, therefore, encounter minimal stakeholder pressure or are unaware of the advantages of SSCM. In the case of the former, dormant players can fall into the small or medium enterprise (SME) sector, which may not have sufficient understanding, knowledge, resources or finances available to implement an SSCM strategy, or may be striving to maintain an existing position by focusing on economic or commercial performance. Accordingly, these companies generally lack social and environmental sustainability systems at the intra-organizational level (Baumgartner & Ebner, 2010), and they have minimal concern for sustainability issues at the inter-organization supply chain level (Gimenez & Sierra, 2013). The primary focus of dormant players is to fulfil their economic responsibilities and commercial risk management duties (Baumgartner & Ebner, 2010), while staying within the prescribed legal framework. Thus, inter-corporate involvement is very low and often arms-length transactional relationships are preferred over long-term collaborations with supply chain members (Vurro, Russo, & Costanzo, 2014; Vurro, Russo, & Perrini, 2009).

The second stage of the model represents acquiescence seekers, which follow a compliance and risk management approach. This type of company can be placed between the introverted and extroverted strategy forms proposed by Baumgartner and Ebner (2010), because acquiescence seekers attempt to mitigate the sustainability risk by compliance to the law and regulations as well as making profound efforts to achieve legitimization by communicating their sustainability commitments to society. Acquiescence seekers have weak to moderate tendencies on the dimension of corporate pro-sustainability orientation and are rated low to medium on the SSCM maturity dimension. They tend to encounter a moderate degree of stakeholder pressure, and SSCM commitment is generally communicated to stakeholders through their SSCM policy. SSCM systems and strategies within such companies are not advanced, or are in the process of development, but participation in SSCM practices is often adopted as a reactive response to stakeholder pressure. The chief purpose of such companies is to protect their brand value and reputation; as a consequence a likely response of acquiescence seekers would be to adhere to legal requirements at the intra-corporate level. While at the supply chain level these companies encourage or sometimes force their suppliers to observe top-down sustainability standards (Vurro et al., 2009), supplier development and training is often lacking and SSCM benefits sharing is disproportionate among supply chain members (Brockhaus et al., 2013). Suppliers especially, bear the cost of acquiring certification or a third-party audit, and no monetary contribution is made by the focal company (Marshall et al., 2014).

Acquiescence seekers also dictate sustainability standards to the supplying company. Accordingly, suppliers' codes of conduct are translated into the supplier's self-assessment questionnaire and the sustainability clauses in contracts to ensure that

suppliers fulfil these requirements in the supplier selection process (Soundararajan & Brown, 2014). Formal, top-down communication is preferred over two-way dynamic communication, and the level of information sharing about implementation of best SSCM practice is low between buyer and supplier companies (Brockhaus et al., 2013). It is argued that although sustainable sourcing mechanisms offer a valuable control mechanism for acquiescence seekers to streamline the behaviour of their suppliers, these mechanisms unfortunately do not allow them to have a profound engagement with their supply chain members. According to Mamic (2005), having a code of conduct and other governance mechanisms is not adequate; however, attaining tangible benefits out of such mechanisms requires the transformation of the organizational vision into corporate values and culture.

Companies that fall into the third stage of the SSCG model are the optimization explorers. Optimization explorers resemble companies which adopt a conservative strategy (Baumgartner & Ebner, 2010), and which have only recently re-examined their policy to include aspects of SSCM in their business model (Marco & Paolo, 2014). Optimization explorers rate moderate on the corporate pro-sustainability orientation dimension and they have a medium SSCM maturity. According to Marco and Paolo (2014, p. 10), “it is interesting to note that even if sustainability is not part of the language per se, operations and supply chain activities highlight positive elements of both environmental and social sustainability. These companies demonstrate not to have a clear understanding of sustainability, even if their business presents elements of sustainability”.

These companies utilize mandatory SSCM governance mechanisms such as codes of conduct, but the sole purpose of collaboration with their suppliers is to reduce their costs and develop operational efficiencies. These collaborative efforts are typically performed on an ad-hoc basis; and in certain cases, such relations bring advantages, such as reductions in waste, energy and other resources, or recycling, through the lean manufacturing method (Marco & Paolo, 2014) in their operations. However, the essential purpose of optimization explorers is to achieve economic sustainability or operational excellence rather than social or environmental improvement (Marco & Paolo, 2014). In fact, environmental or social improvements are an offshoot of enhanced economic performance such as waste and energy reduction in supply chain operations. Therefore, on one hand, such companies make efforts to reduce their risks by adopting formal SSCG mechanisms, and on the other hand they collaborate with supply chain partners to improve their economic bottom line. The element of ad hoc operational collaboration (Vereecke & Muylle, 2006) for operational excellence makes optimization explorers relatively more advanced than acquiescence seekers. Also, on the environmental sustainability performance scale, optimization explorers grade higher than acquiescence seekers, as lean manufacturing systems often result in improved environmental outcomes such as waste, water and energy reduction.

Multifaceted explorers fall into the fourth category in the SSCG model. Companies that belong to this categorization are in continuous search for the best SSCM practices. The chief aim of multifaceted explorers is to balance economic, social and environmental responsibilities by implementing the best SSCM practice. Multifaceted explorers hold moderate to strong propensity on the dimension of corporate pro-sustainability orientation and they are rated medium to high on SSCM maturity dimension. These

companies tend to actively collaborate with their supply chain partners and develop long-term partnerships, often based on trust (Brockhaus et al., 2013; Marco & Paolo, 2014).

According to Brockhaus et al. (2013, p. 176), “the main motivation for companies to engage in collaborative sustainability efforts is the opportunity to gain long-term competitive advantage for the whole supply chain”. Marco and Paolo (2014) and Boström (2014) claim that for successful SSCM implementation, companies need to maintain a balance between formal and informal governance mechanisms but preference should be given to collaborative approaches. Gimenez and Sierra (2013) also argued in favour of using both (formal) and informal (collaboration) governance mechanisms because the application of SSCM governance mechanisms in combination improves a company’ environmental performance. In a similar vein, Lee and Klassen (2008) report synergetic linkages in collaborative relationships between buyers and suppliers, which improve the resources acquisition and capability development of supply chain members. On the other hand, some scholars have emphasized the significance of supplier development and collaboration over suppliers’ assessment; they argue that relying on formal governance mechanisms such as assessment is neither sufficient nor effective on its own (Akamp & Müller, 2013; Gimenez & Tachizawa, 2012; Jiang, 2009a; Reuter et al., 2010; Soundararajan & Brown, 2014). Foerstl et al. (2010), however, reported that the application of supplier assessment and development provides two benefits to a buying company: first, these mechanisms help a buyer to mitigate corporate reputational risk; and second, they help a buyer improve its operational performance.

Accordingly, these companies promote open dialogue and information sharing in implementing SSCM practices with their supply chain partners (Parmigiani et al., 2011; Sharfman et al., 2009). Participation in learning forums and multi-stakeholder collaboration is often considered a norm by multifaceted explorers, where suppliers, trade associations, competitors, advocacy groups and other stakeholders share their experiences and knowledge for improvement of SSCM practices (Marshall et al., 2014; Oelze et al., 2014; Sisco et al., 2010). Knowledge sharing is adopted for the development and implementation of joint standards, joint assessment and auditing as well as for joint capability building for suppliers (Sisco et al., 2010; Vurro et al., 2009). In summary, to improve their SSCM performance, multifaceted explorers are in persistent search of the best SSCM practices, and they implement and promote these practices to gain competitive advantage for entire supply chain network.

The final stage of the SSCG model represents those companies that are trendsetters in SSCM. These cutting-edge companies have dedicated considerable time and effort developing SSCM capabilities and they therefore possess a high level of SSCM maturity. Trendsetters are graded strong on corporate pro-sustainability orientation and high on SSCM maturity dimensions. The vision of these companies is to accomplish stakeholders' value creation and industry leadership by embracing tenets such as flexibility and adaptability to multiple voices (Marshall et al., 2014; Parmigiani et al., 2011; Vurro et al., 2009). Moreover, SSCM is considered an issue of strategic importance to these companies (Vereecke & Muylle, 2006), and in all business decisions the SSCM strategy has the topmost priority. Trendsetters show a high level of commitment to sustainability (Baumgartner & Ebner, 2010; Vurro et al., 2014), and are in constant pursuit of novel, innovative opportunities that deliver improved SSCM

outcomes, such as the development of sustainable products and processes (Klassen & Vereecke, 2012; Marshall et al., 2014), as well as transforming the entire SSCM landscape by introducing and experimenting with new governance mechanisms. These innovative and relational capabilities (Parmigiani et al., 2011) of trendsetters makes them exemplary players in the advancement and implementation of SSCM strategy, and thus gives them leverage over all the other SSCM ‘actors’ discussed above.

In trendsetter companies, sustainability practices and values are deeply ingrained in the organizational culture through intra-organizational collaboration. Moreover, these values and aspirations are not only communicated to supply chain partners but genuine efforts are made to transpose these values to the business practices of the supply chain network by effective inter-organizational collaboration (Vurro et al., 2014), which are often trust-based, long-term relationships, and shared value creation with suppliers (Boström, 2014) and non-state actors in supply chains (Frostenson & Prenekert, 2014; Vermeulen, 2013).

Trendsetters value a mutual reward, risk and cost sharing structure (Boström et al., 2014; Locke, 2013; Soundararajan & Brown, 2014), as well as knowledge and information sharing (Parmigiani et al., 2011) to achieve trust between supply chain members over opportunistic behaviour in which a lead company retains the SCM benefits, and where suppliers are not left to confront their financial, technical or resource problems by themselves. In this regard, Sisco et al. (2010) argue that leading-edge companies often help other companies, such as suppliers or contractors, with limited resources by sharing best practice and the development of consistent standards. This can be achieved through regular reporting of SSCM performance (Tate et al.,

2010) using Global Reporting Initiative (GRI) guidelines or Social Accountability 8000 standards (Lozano & Huisingh, 2011), or through participation in multi-stakeholder collaborations (Gray & Stites, 2013; Vurro et al., 2009). The aims of such companies redefine SSCM by sharing their knowledge of successful SSCM initiatives to create uniform industry expectations around those best sustainability practices. By promoting such practices, trendsetters endeavour to create a win–win situation where not only suppliers (Seuring, 2011), but all key supply chain stakeholders can benefit from improved SSCM outcomes (Vurro et al., 2014). The dominant positions of the interviewed companies in the SSCG model are presented in figure 5.3. The figure depicts the generic mapping of companies on the SSCG model, based on corporate pro-sustainability orientation and SSCM maturity dimensions. However, it is important to acknowledge that companies are mapped based on the author’s personal judgement of how and to what extent companies are proactively engaging towards achieving SSCM performance. In addition, the interview transcripts and companies’ documentary data have been carefully scrutinized in order to perform mapping process. Nonetheless, there may be a possibility of minor variances when the same process is performed by other researchers.

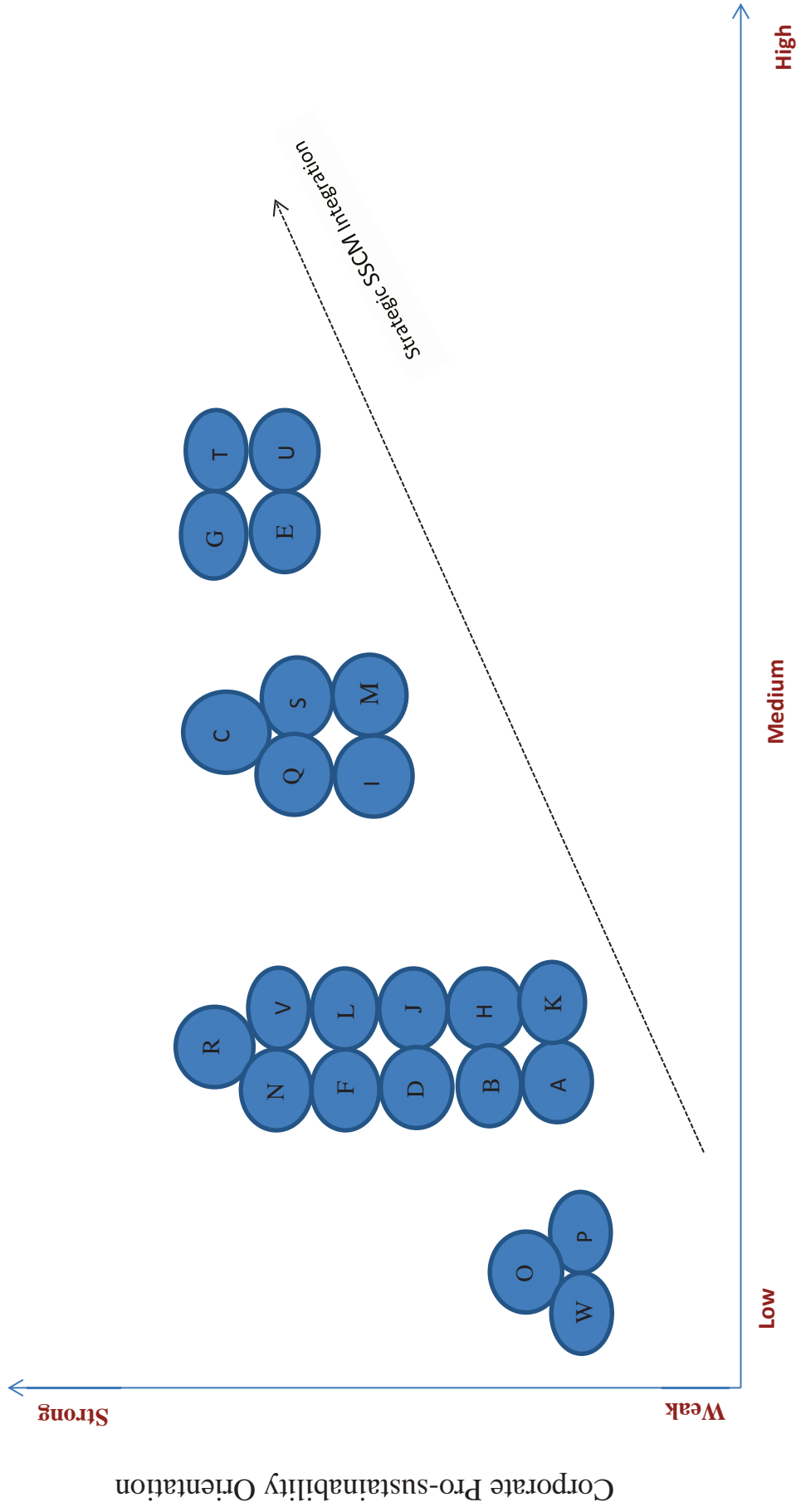


Figure 5.3: SSCG mapping

5.6 Conclusion

This chapter examines how companies govern their supply chain operations and manage relationships with supply chain partners to achieve sustainability. The findings suggest that companies use various forms of SSCG mechanisms, which fall into two broad types of SSCG approaches – hands-on and hands-off governance. It is argued in the chapter that the choice of an appropriate SSCG mechanism depends on contingency variables, including perceived level of risk with a supplier or product, industry requirements, regulatory regimes, geographical location, cultural differences, complexity of supply chain and availability of resources. It is further argued that a hands-off approach is a relatively weak form of SSCG as it does not allow buyers to actively collaborate with their supply chain partners to improve SSCM. Yet, the hands-off approach is widely used in certain sectors, such as retail and merchandizing, to mitigate upstream supply chain risk. Similarly, a hands-off approach that uses third-party certified product or service can be a useful tool for companies in the preliminary stages of SSCM implementation. It is found that third-party certified products or services allow such organisations to mitigate the sustainability risk; however, such certification offers limited opportunities for mutual learning and development between buyers and suppliers.

Large focal companies and MNCs use a hands-on approach, which is customized to the buyers' requirements. The hands-on approach is often used in combination with a hands-off approach. The choice of an appropriate mix between hands-off and hands-on approaches depends on business requirements, associated risk in procurement settings and a company's overall sustainable procurement policy. The chapter analysis details

the sustainable procurement process, including planning, implementation, monitoring and auditing, development and engagement and SSCM reporting. An effort is made to provide a detailed description of the process by which companies execute their SSCM policies. Furthermore, critical analysis of various SSCM tools, such as codes of conduct, supplier self-assessment questionnaire, sustainability clause, auditing, monitoring and engagement techniques and SSCM reporting, is presented in relation to the literature. The aims were to provide an in-depth analysis of the efficacy of such tools and offer new and interesting insights to the reader. It appears from the findings that companies use a variety of SSCG tools, but in general monitoring, auditing and broad engagement tools are preferred over collaboration, development and deep-engagement activities. On the other hand, other companies still adopt traditional arms-length, transactional approaches to procurement, and commercial drivers are motivators for such companies.

Finally, the chapter introduced an SSCG model based on the current findings and using two dimensions – corporate pro-sustainability orientation and SSCM maturity. The model classifies companies into five distinct phases based on their corporate pro-sustainability orientation and SSCM maturity. An effort has been made to clarify how companies can move from one stage to another using different SSCG mechanism. Interviewed companies were mapped on the model to examine the SSCM approach of these companies and to determine the current progress of interviewed companies.

CHAPTER 6

Green Supply Chain Management

6.1 Introduction

This chapter investigates the fourth research question of this study with specific reference to the environmental SCM perspective: How do companies manage environmental issues in SCM? In chapter 4 the motivators and barriers to SSCM are discussed, while chapter 5 examines the SSCG mechanisms companies use to manage their SSCM performance. This chapter focuses on the ‘green’ or environmental SCM theme, which emerged from the analysis of data. The concept of green supply chain management (GSCM) is relatively well-researched in the global context; however, there is a dearth of empirical research on GSCM in New Zealand. Accordingly, this chapter aims to fill this knowledge gap in the literature, and has the following objectives, to:

- examine the environmental practices companies are using to accomplish GSCM performance
- identify the level of adoption of GSCM in New Zealand
- evaluate the effectiveness of GSCM for improving corporate environmental performance and competitive advantage.

To achieve the above objectives, the chapter is organized into three sections. The first section presents the chapter overview; the second focuses on the implementation of GSCM initiatives and strategies and its linkage with SSCM performance and competitive linkages, and a conclusion is provided in the last section.

6.2 Overview of the Chapter

There is a growing recognition in modern societies, among researchers and practitioners alike, that poor corporate environmental management is one of the causes of ecological imbalance. Such ecological disproportion contributes to a host of environmental sustainability issues including global warming, loss of biodiversity, deforestation, climate change, pollution, shortage of natural resources and ozone layer depletion (Esty & Winston, 2009; Kopnina & Blewitt, 2015; Senge, Linchtenstein, Kaeufer, Bradbury, & Carroll, 2007). To address these ecological issues, companies are under intense stakeholder pressure to internalize their environmental impacts by adopting resilient environmental strategies (Coyle et al., 2015; Franchetti et al., 2009; Simons & Mason, 2003; Tsoufas & Pappis, 2006).

However, several scholars argue that such environmental efforts must be holistic and should extend beyond corporate intra-organizational (internal) operations (e.g., Linton et al., 2007; Zhu, Sarkis, & Lai, 2008). In fact, a company's environmental impacts are predominantly associated with its SCM practices (Coyle et al., 2015). According to Linton et al. (2007, p. 1080), “supply chains must be explicitly extended to include by-products of the supply chain, to consider the entire lifecycle of the product, and to optimize the product not only from a current cost standpoint but also a total cost standpoint. Total cost must include the effects of resource depletion and the generation of by-products that are neither captured nor used (pollutants and waste)”. Therefore, proactive companies are increasingly adopting GSCM practices to improve their environmental performance and competitive advantage. In essence, these practices are focused on areas such as waste management, effective and efficient utilization of resources and cutting green-house gas (GHG) emissions.

The findings reveal that companies use a variety of GSCM strategies and practices to enhance environmental performance. The sub-themes relating to GSCM are characterized into four green strategy bundles: green product design and life cycle assessment (LCA), green procurement, green operations and manufacturing management (also known as cleaner production), and green logistics and distribution management (see table 6.1). However, the adoption of GSCM practices varies depending on contextual business environment factors (Albino, Balice, & Dangelico, 2009), including industry type and organization size. For example, companies operating in the financial services sector have relatively low environmental impacts with regard to logistics and transport activities, and accordingly such activities are not considered key priority areas or hot spots in the supply chain. On the other hand, for companies that operate in postal services or the transport sector, greening the logistics and transport impacts is a matter of prime significance.

The following section discusses in detail the GSCM strategies of companies and how these strategies impact on their sustainability performance. The distribution of the adoption of GSCM practice by the sample companies is shown in table 6.1. It is important to note that table 6.1 indicates only the number of companies involved in such practices. How profound or rudimentary their involvement is in a particular GSCM practice is not depicted here, although it is discussed in detail in the analysis of findings.

Table 6.1: Distribution of GSCM practices' adoption in the sample companies

GSCM Practices	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	Total (Sample engaged)	Percentage	
	Green design, LCA & green procurement																									
LCA	✓		✓					✓										✓				✓	✓	6	26%	
Green procurement	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		20	87%	
Green operation/manufacturing																										
Waste reduction	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	23	100%
Energy efficiency	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	22	96%
Water reduction	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓		✓		✓	✓	✓			✓	✓	16	70%	
GHG/carbon reduction	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	22	96%
Resources minimization	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	21	91%
Lean manufacturing/JIT									✓	✓							✓		✓			✓	✓	6	26%	
Green packaging initiatives	✓		✓						✓				✓				✓					✓	✓	7	30%	
EMS & policy	✓	✓	✓	✓	✓	✓	✓			✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓		17	74%	
Green certifications/awards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	20	87%
Green buildings and store design			✓	✓	✓		✓				✓			✓											5	22%
Machinery/equipment upgradation		✓	✓		✓	✓							✓	✓	✓				✓	✓		✓		10	43%	
Carbon neutrality				✓	✓		✓							✓			✓		✓					7	30%	
Video conferencing				✓	✓									✓				✓						3	13%	
Reduction in air travel				✓	✓								✓			✓								4	17%	
Green awareness programmes for staff	✓	✓			✓					✓								✓	✓		✓			7	30%	

(Continued)

Table 6.1: Distribution of GSCM practices adoption in the sample companies

GSCM Practices	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	Total (Sample engaged)	Percentage	
Green logistics/distribution management																										
Recycling programme	✓		✓				✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	17	74%
Reverse logistics/product end-of-life management	✓							✓				✓				✓	✓	✓	✓	✓					8	35%
Green fleet and transport efficiency	✓	✓			✓		✓	✓	✓		✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	14	61%
Fleet enhancement and renewal	✓	✓						✓	✓	✓					✓				✓		✓			✓	7	30%
Driver/pilot training programme	✓	✓								✓						✓			✓					✓	6	26%
Network redesign & logistics optimization	✓	✓	✓			✓	✓	✓	✓	✓			✓		✓	✓	✓	✓	✓	✓			✓	✓	15	65%
Green warehousing									✓									✓	✓						3	13%
Green logistics technologies	✓	✓							✓						✓		✓	✓	✓				✓	✓	7	30%
Fuel efficiency initiatives	✓	✓				✓	✓			✓			✓	✓	✓		✓	✓	✓	✓					10	43%
Environmental collaboration with SC partners	✓	✓	✓				✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	17	74%
Green transport modes	✓														✓				✓				✓		4	17%
Carbon offset programme		✓								✓			✓												3	13%
Sustainable fuel trial/use	✓	✓				✓				✓					✓		✓								6	26%

6.3 GSCM Initiatives, Strategies and Performance Outcomes

6.3.1 Green Product Design and LCA

Green design or design for environment and life cycle assessment (LCA) strategies relate to environmentally conscious product design (Ashby et al., 2012; Coyle et al., 2015; Glavič & Lukman, 2007; Hervani et al., 2005) and green processes (Tsouflias & Pappis, 2006). The aim of these strategies is to promote cleaner production by integrating environmental thinking early in the SCM process (De Bakker, Fisscher, & Brack, 2002; Eltayeb et al., 2011; Handfield et al., 2001; Sarkis, 2003). This is usually achieved by screening, analysing and mitigating harmful environmental impacts throughout the life cycle of a product, including sourcing or material selection, production, packaging, distribution and consumption, as well as end-of-life cycle management stages (Eltayeb et al., 2011). Similarly, LCA is a useful planning tool which is applied to identify and analyse the environmental impacts of a new product or service throughout the life cycle of the product (Glavič & Lukman, 2007). However, it is important to note that these strategies are generally adopted by the manufacturing sector.

The findings suggest that only a handful of companies acknowledge the use of green design and LCA strategies. In the sample, only 6 of the 23 companies acknowledge the application of green design and life cycle analysis approaches in their product development process (see table 6.1). One of the reasons for this limited application of green design principles may be because not many sample companies belong to the manufacturing sector. Moreover, companies are at different levels of maturity in relation to the implementation of these approaches. Some companies utilize green design principles and LCA for their core products only, while other companies embed

these environmental requirements when a customer requests them or imposes these environmental specifications onto a supplying company. For example, company A has recently started LCA for its core bulk mail product in support of external LCA advisors, while company V performs LCA on its new products when it launches a product into a new market or replaces existing product for environmental reasons or at a customer's request. This finding resonates with the findings of Hagelaar and van der Vorst (2001), which found that external factors such as competition, government regulations and customer preference may affect the implementation of LCA.

Moreover, LCA is a costly, technical and complex process (Norris & Yost, 2001; Thomas et al., 2003), and companies often lack capacity and knowledge, so they need to appoint external consultants to perform the LCA analysis for them. As Hagelaar and van der Vorst (2001) assert, the implementation of LCA is influenced by internal organizational factors including the availability of finances, knowledge of LCA approaches, availability of relevant technology and co-operation among various departments within a company. Therefore, in practice it may be difficult for manufacturing companies to adopt an LCA tool for their entire product range. For example, the manager of company V comments that:

We've recently changed one of the designs of [plastic packing] tray that we send out to the supermarket. In doing so we've pretty much halved the material content of that tray, and the advantage of that is that you get a selling point from that LCA. Light weighting reduces the cost of the product...however, in terms of our existing ongoing products, we don't generally do that as it's a very, very

expensive process so we don't generally do that unless the customer requests it of us.

Accordingly, as indicated by the manager of company V, embedding suitable green design choices fosters the elimination of waste and materials and develops efficacy. This is in line with the GSCM literature which supports that the integration of design for material reduction and design for resource efficiency approaches enables a company to accomplish environmental and operational advantages (Eltayeb et al., 2011; Thomas et al., 2003; Zsidisin & Siferd, 2001). However, it appears from these findings that the cost of implementing LCA sometimes outweighs the savings accomplished through the reduction of waste, materials and other redundancies. Thus, contextual factors, including customer demands, availability of finance, regulations, capacity and knowledge of green design approaches, play a significant role in the adoption of these approaches.

Company W uses an environmental LCA technique for its entire product range, by applying the publically available specification (PAS) 2050 carbon footprint methodology. The company started a PAS 2050 programme supported by the New Zealand Ministry for Primary Industries. It is stated on the company's website that:

[Company name] has adopted global best practices...to develop full product lifecycle carbon footprint for each of our product...[as] consumer demand for healthy and nutritious products continues to grow across the world and [company name] is focused on meeting this growing demand while applying best practices

production and supply chain systems to be environmentally responsible.

[Company W]

Thus, this indicates that the international carbon footprint standard enables the company to measure, prioritize and manage its environmental footprint over the entire life cycle of its products and services (Piecyk, 2012), including production, storage and warehousing, shipping, retailing, consumer consumption and disposal.

In a similar vein, company R follows a product stewardship approach to minimize its environmental impacts through all phases of the product life cycle. Key environmental issues are examined in the initial stage of product development. These issues include product recyclability, disassembly, remanufacturing, material recovery and the exclusion of toxic or environmentally sensitive materials in production. Furthermore, the LCA is performed to calculate GHG emissions throughout the life cycle of the product. Thus, the application of innovative design principles ensure that products are manufactured in a way that enhances their recyclability and end-of-life management by applying designs for recycling and designs for disassembly approaches (Gertsakis et al., 1997; Gupta, 1995; Kopnina & Blewitt, 2015). The manager of company R states:

We take full responsibility for our products...it's through the whole life cycle that we do the studies about a machine. We have a policy that we have to recycle the product so therefore it's got to be easy to pull apart for recycling.

In summary, the findings indicate that the implementation of green design and LCA strategies is limited in the sample companies – and companies that incorporate these

practices are at different levels of maturity. Furthermore, the adoption of green design principles depends on contingency factors, including customer demands and willingness to pay for such improvements, the availability of financial, technical and knowledge resources, the density of a company's product line and product types, and product standardization as well as collaboration between supply chain partners for greening the supply chain. Supply chain partners especially, both internal and external, should be agree on the espousal of these practices because the application of green design requires collaboration (Albino et al., 2009). The higher cost of LCA is another important factor determining the integration of green design methods in the production processes. If customers or markets welcome such modifications, manufacturers may be more willing to adopt these practices. Moreover, government support may be instrumental in the implementation of these practices, as in the case of company W, making it more likely that companies will embrace green design practices. Tsoulfas and Pappis (2006) argue that “if producer has no responsibility for reuse, recycling or disposal, there is little incentive to design products that are durable, easily dissembled for recycling, or biodegradable”. Therefore, the role of government in promoting relevant regulatory and non-regulatory measures is imperative to promote environmental responsibility among producers.

6.3.2 Green Procurement

Green procurement is concerned with scrutinizing procurement decisions through an environmental sustainability lens and implementing those practices which enhance corporate GSCM performance. The previous chapter discusses in detail a sustainable procurement process and sustainable supply chain governance (SSCG) mechanisms (see chapter 5). A brief discussion on green procurement strategy is relevant in this chapter

also, as it is an essential component to GSCM. The aim of green procurement is to reduce environmental impacts, at the same time ensuring supply chain disruptions can be effectively managed and efficiency can be achieved through appropriate procurement decisions (Coyle et al., 2015; Krause et al., 2009).

Encouragingly, the findings suggest that companies are reasonably proactive in implementing green procurement, and 20 companies in the sample mentioned their engagement in green procurement. However, the implementation of green procurement is not consistent across the sample companies and sectors (e.g., some companies are advance than others). In fact, each industry has its own set of environmental procurement requirements that vary across industry sectors (see Appendix 6). This finding resonates with the findings of Tate et al. (2012) and Hoejmoose and Adrien-Kirby (2012) that found environmental purchasing practices of companies differed by industry, perhaps due to the different levels of environmental pressure imposed by stakeholder groups towards environmental sustainability in each industry, and other market factors such as competition. Some companies have a mature green procurement structure, while others execute green procurement on an ad-hoc basis.

Furthermore, procurement decisions regarding greening the supply chains are contingent and case-specific, and depend on the procurement of product or service type. This finding is consistent with the findings of past studies by (Plugge & Bouwman, 2013) and (García-Rodríguez et al., 2013), which argue that the implementation of green procurement policy is subject to contingency variables. The findings reveal that companies with an established green procurement structure utilize a combination of hands-off and hands-on governance mechanisms for their procurement decisions (see

Appendix 6). The literature supports the use of both SCGMs and hands-off (Runicka & Reichel, 2014) and hands-on (monitoring and collaboration) approaches to create synergetic effects on environmental performance (e.g., Foerstl et al., 2010; Gimenez & Sierra, 2013; Lee & Klassen, 2008; Marco & Paolo, 2014).

On the other hand, companies with less mature procurement structures are rather selective. They apply environmental sustainability screening to procurement decisions only when they purchase a key technology, product or service; otherwise such standards are not uniformly applied to procurement decisions. Against the ad-hoc integration of environmental sustainability to procurement decisions, some scholars have argued for a more strategic role for sustainability in the procurement function (Krause et al., 2009; Zsidisin & Siferd, 2001). This means that purchase decisions, especially strategic decisions, must be appropriately scrutinized using sustainability criteria along with commercial standards – and where possible, priority should be given to sustainable sourcing.

The findings of the current study provide ample evidence that commercial standards have a dominant role in corporate procurement and often outweigh environmental sustainability criteria. However, companies are more willing to embrace a specific green product (technology, product or service) if that product retains an established/standard technology, which can potentially enhance operational efficiency, reduce costs and provide environmental advantages at competitive rates. For example, the installation of LED lighting and smart meter solutions, video conferencing, hybrid vehicles and global positioning technology (GPS) are likely to be adopted as these technologies provide immediate environmental and economic performance improvements. Several scholars

have emphasized the use of these methods in terms of improving the efficiency and environmental performance of supply chains (Grant et al., 2013; Hoffman, 2005).

Furthermore, green procurement can be a preferred strategy for companies that promote carbon offsetting programmes and hold green certifications, such as carbonZero, New Zealand. Such companies have to offset their carbon emissions by purchasing verified carbon credits, and accept an extra costs burden if they are unable to manage or mitigate their carbon emissions. Companies holding green certifications are, therefore, relatively proactive in promoting green procurement and purchasing green products or services, which enable them to reduce their environmental footprints and improve their sustainability performance.

6.3.3 Green Operations and Manufacturing Management (GOMM)

Green operations and manufacturing management (GOMM) is the third theme emerging from the interview data. The findings reveal that GSCM practices under this theme focus on developing intra-organizational environmental performance, and can be further classified into two broad categories: lean management and green management. The findings show that 6 of the 23 companies are involved in implementing lean manufacturing practices. In certain cases it is difficult to segregate lean and green practices; for example, where green and lean practices are applied simultaneously in organizational operations, the reciprocal use of these practices makes it difficult to separate the interfaces. However, it is clear from the findings that lean and green practices are generally complementary, as indicated in the literature (Dües et al., 2013; Larson & Greenwood, 2004), and lean practices provide the foundation upon which

green practices are developed and implemented throughout an organization's internal operations.

For example, company I draws on lean practices, such as efficient inventory, warehousing and transportation optimization systems to manage its high volume, low weight food products. Flexible inventory management systems, as well as logistics and warehouse-sharing with subcontractors, helps enhance operational efficiency and reduce costs. Similarly, company W has a strong focus on lean manufacturing that has enabled its economic and operational performance. The following comment of manager reflects this position:

At the moment sustainability is managed through the economic drivers and so our focus is on costs and resources efficiency, reducing waste food or food deterioration. The industry also has had a strong focus on lean manufacturer methodology ... [because our products] are grown in a high cost structure environment in New Zealand, so the industry is very vulnerable to where costs rise faster than the return in the market ... so they're focused on driving costs down and trying to maximise the price premium. (Company W)

Lean manufacturing practices adopted by the company are aligned with industry requirements. For example, the primary goods industry operates in market conditions of high volume, low variety and predictable demand with supply certainty (Carvalho et al., 2011). Adopting lean practices is appropriate under these conditions. This is in contrast to an industry that operates in a market of high variety, low volume and uncertainty due to customer requirements or other market factors such as turbulence, risk, and volatility

(Agarwal, Shankar, & Tiwari, 2007; Carvalho et al., 2011). This finding substantiates the significance of contingency theory and the subjectivity of corporate decisions on contextual elements, which shapes the choice of a suitable corporate strategy.

Company Q and company S, on the other hand, are using lean and green sustainability approaches concurrently. Company Q uses a performance measurement system that enables it to cut its emissions and natural resource usage, which in turn reduces its operational costs. The manager of company Q states:

I think doing the lean and sustainability together has meant that we just measure exceptionally well. We know where we're at every day and I think that's the key for us is just that, that measurement...we measure how many kilograms we process every day, and how much water we use, how much power, how much gas, how much labour – all those things we use every day is measured. So we quickly see the benefits of doing something smart.

Company S is also simultaneously utilizing green and lean strategies. The manager comments:

The other initiative we've taken along that route is lean manufacturing, which is about being efficient at what you do so you don't waste, that is waste of time, waste of labour, wasted effort, wasted raw material, wasted process, time, all that sort of thing. So we've sort of got a lean manufacturing programme ... and all our staff gets trained on that.

Eco-efficiency and EMSs

The findings highlight that companies are involved in a range of green management practices that are linked to the principles of eco-efficiency. The notion of eco-efficiency encompasses the principle of ‘doing more with less’ (Kopnina & Blewitt, 2015; Simons & Mason, 2003), by introducing ‘Re’s’ approaches, including reduce, reuse, rework, refurbish, reclaim, recycle, and remanufacture (Coyle et al., 2015; DeSimone & Popoff, 2000). Generally, companies integrate these principles through environmental management systems (EMSs), by which they identify, analyse and implement green practices to accomplish their desired environmental goals (Steger, 2000). The central focus of the EMSs is to develop a systematic process by which companies minimize their energy use, resource utilization, waste management and carbon footprints. In the interviewed sample, 17 companies referred to the application of EMSs (both certified and non-certified) in reducing their environmental impacts. The corporate environmental aspirations are often reflected through environmental policy and implemented by a relevant EMS programme. The purpose and focus areas of the EMS programme is best described by company T, for example, on its website:

We have environmental management systems in place to manage our energy use and carbon emissions as well as a range of other environmental impacts, such as electronic waste from our network equipment, office waste, emissions of ozone-depleting substances and water use.

The following discussion examines various green operational strategies undertaken by sample companies as part of their GOMM implementation to accomplish environmental and competitive advantage. These strategies are discussed in view of general GOMM

focus areas, including energy management, conservation of natural resources, carbon management and waste reduction.

Energy management is an essential component of corporate environmental strategy. Energy reduction is considered a key goal of EMS and eco-efficiency initiatives. Encouragingly, this area is relatively well represented in the interviewed sample: 22 companies mentioned their energy efficiency initiatives. Some of these are standard practices adopted across the sample companies, which include the installation of LED (light-emitting diode) lighting, smart meter technology for energy efficiency, regular energy assessments, monitoring and auditing systems, sensor-based technologies (e.g., automatic switch-off devices) and efficient air-conditioning systems. The above-mentioned energy efficiency tools not only enabled companies to reduce their carbon footprint but also allowed them to achieve low-to-medium economic advantages (Grant et al., 2013), while other, ‘frontrunner’, companies utilized sophisticated energy management systems that delivered improved economic and environmental outcomes. Hoffman (2005) argues that reduction in energy use is driven by both simple lighting upgrades and complex and sophisticated energy management solutions.

For example, company M has implemented a comprehensive energy reduction programme for its New Zealand-based operations. The LED lighting technology has contributed significantly in cutting electricity usage within the company’s operations, including its dry stores, cold stores, commercial buildings and production processing areas. Some direct advantages reported by the installation of LED lighting technology involve longevity of bulbs life, better lighting control and costs efficiency. These

advantages make LED lamps about 30 percent more efficient than traditional lighting devices.

Similarly, companies S, G and C have replaced fluorescent lighting with efficient LED lighting to save energy consumption; this change has delivered low-to-medium cost reductions. On the other hand, company K is working closely with its key supplier to manage its energy consumption. The supplier has implemented various projects, such as the replacement of outdated lights at the airport, upgradation of heating, air conditioning and ventilation systems through which the company has realized its costs and carbon-reduction benefits. Integrated building management practices are strongly supported by the World Economic Forum (2009) and Esty and Simmons (2011), to attain decarbonisation and cost savings in business operations. The manager of company K states:

We are taking energy efficiency seriously...we've probably invested close to half a million dollars over the past couple of years around improving the energy efficiency of heating, lighting, ventilation and air conditioning...that particular project is saving us probably around \$70,000 a year...we're now looking at expanding it into the arrivals area and first floor departures area. And that's really the way the sustainability projects are working, proving the concept in a particular area of the business, and then rolling them out and that's it.

On the other hand, some companies use environmental management software, smart meters, facilities' monitoring systems and the upgrading of inefficient technologies or machines to reduce energy usage. For example, company D has implemented

environmental management software, through which energy consumption data is regularly supervised via the facilities' monitoring system. These initiatives have resulted in an accumulated reduction of energy use of 1,062 MWh in the 2010/2011 year. Company V also prioritizes energy management while making purchase decisions, and equipment such as compressors and other electrical and electronic devices are examined from an energy reduction perspective. For example, the manager of company V comments:

[...] the key priority areas would firstly be direct impacts on our day-to-day production, so energy use is very, very high on our priority list. For example, we're currently in the process of looking at replacing a compressor. We do look for the most energy efficient option.

This finding is in line with Meehan and Bryde (2010) who found that companies' sustainable procurement focus is mainly on the environmental dimension of sustainability, particularly energy and eco-efficiency. Another example of energy efficiency is that of company S, which saved about \$150,000 in 2010 by implementing energy efficiency initiatives such as the replacement of florescent lighting, the replacement of inefficient equipment with new energy-efficient machines, application of sensor technology and a staff education programme on energy efficiency. A primary reason behind the implementation of these initiatives is that the company has various environmental certifications, and needs to actively work towards reducing its environmental footprint to keep these certifications up to date. The manager of the company recalls these developments:

I guess back in 2006, my brother who is the Managing Director and I were having a conversation about triple bottom line reporting and we decided that...we wanted to sort of be one of the best in our industry at that. So we started off going through the environmental certification route...and that helped us in terms of understanding and reducing our environmental impacts and operational costs.

On the other hand, company C determines its potential energy consumption needs when a supermarket is constructed. Facility design and installation of equipment are viewed from environmental and economic perspective so energy consumption can be minimized throughout the life cycle of the supermarket operation. The manager of the company explains:

When we build our supermarkets we look to the amount of energy they're going to use throughout their life. We're putting energy-efficient measures into the actual build itself, such as placing daylight skylights in the roof, we assess whether LED lighting will be a better solution, it's a more cost-effective solution, we're looking at the different types of refrigeration technology...in the supermarket now in order to save energy.

The notion of environmental scrutiny of product and process design in the early stages of the supply chain is also advocated by several authors, such as Eltayeb et al. (2011), De Bakker et al. (2002), and Sarkis (2003). On the other hand, company O and company T are focusing their efforts on reducing energy use in their data centres and throughout their entire operational network. For example, these companies use virtualization technology, which helps companies consolidate resources and save energy

by introducing resilience, reliability and scalability in the network to rationalize the energy use and carbon reduction of the operational network (Hoffman, 2011). Similarly, Albino et al. (2009) studied environmental and green product development strategies of companies in the Dow Jones Sustainability Index (DJSI). They found that the telecommunication sector is relatively advanced and takes a holistic stance over implementing green approaches, compared to other sectors such as energy, healthcare, industrial and utilities. For example, company T recognises the significance of rationalizing network efficiency, and has implemented a virtualization technology for achieving network performance. As the manager of the company states:

We had a lot of focus on reducing our energy consumption and carbon footprint, particularly in our data centres and our network operations...[and] we have achieved savings by improving [the] efficiency of our network.

In a similar vein, the manager of company O remarks on the reduction of energy consumption in the company's data centres:

We have a lot of servers in the data warehouses and have done things like virtualization to try and reduce the number of servers that we need to have. If I take an example, we've recently implemented a programme of having our cabling, you know one of those infra-red cameras taking images to see if the energy is dissipating more than it should so that we prevent energy loss and also fire.

The conservation of natural resources is a key to improving environmental sustainability. The findings indicate that some sample companies use environmentally

friendly raw material sources and implement eco-efficiency methods such as dematerialization and the material substitution principle for greening their supply chains. For example, company V is focusing on minimizing the use of inputs (e.g., polystyrene) and the material substitution method to develop green credentials for its packaging products. For example, the manager asserts that:

Being a plastics manufacturer we are using crude oil-based raw materials and so ... we look at using lesser or recycled quantities of polystyrene. Something we're also looking at is alternative products such as sustainable plastic which are corn starch plastics. We've also looked at possibilities around paper pulp as a raw material.

Company S, on the other hand, is experimenting with alternate material sources in its printing facility. The company encourages its suppliers to run trials of vegetable-based inks so the environmental performance of the printing process can be enhanced. The manager indicates that:

We've done trials with our ink suppliers to make sure that we can get the highest percentage vegetable-based ink...we [also] try to work with them to recycle or dispose of it in an environmental friendly way. The canisters from the digital machines, they get returned to the supplier and they dispose of them in the correct manner.

Similarly, company C has implemented improved modern flooring design through which the use of harmful chemicals can be eliminated or reduced. As the manager remarks:

We put down a polished concrete floor which means that it doesn't need as much cleaning with harsh chemicals, so all of these [now] go into the design of the new stores.

Several scholars have suggested dematerialization (reduction in energy and material inputs) and material substitution (a complete replacement by sustainable substitutes) as proactive strategies to reduce corporate and supply chain environmental impacts (e.g., Glavič & Lukman, 2007; Lindahl, Robèrt, Ny, & Broman, 2014; Maxwell & Van der Vorst, 2003; Van Berkel, 2007). Maxwell and Van Der Vorst (2003) further argue that reduction in material inputs can significantly impact on cutting costs, waste streams and negative environmental impacts as well as enabling a company to improve its competitive advantage. However, dematerialization or material substitution strategies generally require the application of innovative design principles and technology development (Lindahl et al., 2014).

Carbon management is an integral element of corporate eco-efficiency and cleaner production strategies. In this regard, sample companies have introduced a range of projects and initiatives to reduce their carbon footprints. A total of 22 companies reported they have implemented practices in the last few years to reduce their carbon footprint. However, the investment in carbon reduction initiatives and the degree to which emissions have been reduced depends on factors such as company type, the choice of carbon reduction practices adopted and the sector in which company operates. For example, companies in the financial services industry generally do not have significant carbon emissions compared to the transport, oil and gas, shipping and manufacturing sectors, which own relatively substantial carbon footprints in their

production, logistics, distribution and supply chain operations. Nonetheless, the findings indicate that most interviewed companies operating in the financial services industry attained either a relevant carbon neutral certification or had an active carbon offsetting programme to mitigate their carbon emissions. The website of company D acknowledges industry-specific differences:

We are in a financial services industry, so our direct environmental impact is relatively low; however we recognize that our operations do leave a footprint and it's important for us to minimise both our direct and indirect impacts on the environment.

It is clear that although the company does not contribute to a large amount of GHG emissions it uses tools, such as carbon management software, which is consistent with the ISO 14064-1GHG protocol standards. The software permits managers to retrieve up-to-date data which improves the visibility of environment-related information. Better visibility of environmental impacts in turn enhances a manager's capability to mitigate carbon emissions and energy use. Carbon management software also enables the company to align itself with the requirements of carbon neutral certification. One manager remarked that "the primary focus of the company is to reduce carbon emissions as much as possible, but emissions that cannot be avoided are offset through the purchase of carbon credits". In this regard, the company also runs sustainability education training to enable its employees to understand how they can contribute to the company's carbon neutral status by changing their consumption behaviour.

Four companies referred to their engagement in the carbon disclosure project (CDP). The CDP (a voluntary initiative) is a UK-based organization that works with companies and a range of stakeholder groups towards fostering the notions of green economy and sustainable world. The purpose of CDP is to bring together members, signatories and stakeholders and work closely with them on mitigating environmental risks associated with issues such as climate change, GHGs emission, deforestation, water use and supply chains (CDP, 2015). According to Piecyk (2012), on the one hand, CDP works on disaggregation of GHG data along the vertical lines of business such as business units, activities, processes and products to enhance managers' understanding of the carbon-generating activities of business. On the other hand, carbon measurement is extended horizontally across supply chains involving the operations of various network partners and companies. However, it is argued that the widespread application of these approaches in the near future be potentially limited due to high costs associated with performing carbon auditing and uncertainty related to consumers' response to the carbon labelling initiative (Piecyk, 2012).

Company N has achieved carbon-neutral status and follows a comparable carbon management approach. As the manager of the company N puts it:

We continue to adapt to a low carbon future. This is about investing in responsible environmental management across our operations, including how we operate and manage our use of consumables and utilities, and working with our suppliers to achieve more sustainable outcomes for our business, customers, partners and communities. This has helped us to be carbon neutral since 2012.

On the other hand, company B and company R collaborate with one of the sustainability research organizations, Landcare Research (a Crown research institute), and purchase carbon credits from this institute. Landcare Research invests the carbon credits from purchasing companies in forest regeneration programmes. The manager of company B remarks on these developments:

We look at maintaining the flora and fauna of New Zealand. We have an environmental policy which sets our aspirations around all the emissions. So we've been monitoring our emissions for three years now. We also offset all of our emissions so we are effectively carbon neutral but we haven't been certified so we can't say it.

A number of companies reported taking environmental initiatives through which they mitigate their carbon emissions. These initiatives include the green fleet policy, the business travel policy and priority parking for vehicles with more than two occupants, provision of bike racks in offices and the development of videoconferencing facilities. For example, companies B, E, G and H have a green fleet policy. These companies prefer buying hybrid vehicles for office use or domestic freight. For example, the manager of company E comments:

In terms of the vehicle fleet, there's an active policy there to only purchase four-cylinder vehicles, so keeping the size of the vehicles down to improve fuel efficiency.

Company B encourages its staff members to use green cabs to offset its carbon emissions. Alternatively, some companies have installed videoconferencing facilities in

their offices that significantly reduces staff commuting. Company T and company D have a business travel policy and the companies have equipped offices with videoconferencing technology. Staff members can communicate in different ways, including voice, video and web-based conferencing. The use of videoconferencing technology has resulted in reduced air travel, which has lowered the total GHG emissions of companies. According to Esty and Simmons (2011), the use of videoconferencing and green taxi companies, corporate green fleets, provision of bike racks and promoting carpooling are proactive environmental strategies that lead to greener offices and enable companies to reduce their carbon footprints.

Green building and store design are other ways companies can reduce their energy and water use and GHG emissions (WBCSD, 2007). For example, the three main buildings of company D are green-star New Zealand-certified. These green-star buildings are designed, constructed and equipped with environmentally friendly accessories (e.g., energy efficient dishwashers, water-efficient sanitary systems, sensor-activated taps and LED lighting), and so contribute to the reduction of water, energy and GHG emissions. Similarly, company R and company C utilize green design with skylight roofs and large windows in some of their warehouses and supermarkets respectively, which moderate the need for electricity during the day. Thus, implementing green building design modifications retain significant potential to reduce energy usage and decarbonisation of SCM activities (Grant et al., 2013; Marchant & Baker, 2012; World Economic Forum, 2009). Furthermore, electric lights need periodic cleaning; otherwise the efficiency of the light is reduced by 15 percent, which is not the case with natural light, which is perceived to be more comfortable with no recurring, associated costs of energy usage (Marchant & Baker, 2012).

Waste management and recycling strategies have a critical role in the development and implementation of GSCM. Waste is generated during various supply chain stages, including raw material extraction, transportation, production, packaging and the consumption of products. However, pro-environmental strategies, such as reverse logistics, closed loop SCM and recycling can potentially reduce waste and enable companies to accomplish the greening of supply chains (Grant et al., 2013). Sampled companies have implemented several waste management initiatives but the level of sophistication of these programmes, as well as the waste management strategies applied, differs depending on the nature of the business or industry. These programmes range from simple recycling initiatives to advanced product end-of-life management solutions.

The literature recognizes a range of waste management strategies; these include innovation and partnerships for waste management, the use of green, intermodal, transport mode options, product and process redesign, remanufacturing, refurbishing, recycling, repair, recovery, materials substitution, waste segregation, disassembly, extended usage and returnable packaging (Dües et al., 2013; Esty & Simmons, 2011; Grant et al., 2013), and may relate to lean or green paradigms. However, green waste management practices, more than lean practices, generally require the implementation of sophisticated, integrated and complex systems and initiatives. Many of the companies interviewed demonstrated their engagement in waste management activities; however, very few of them follow an integrative waste management approach.

Company M is one such company. The company recently introduced a collaborative waste management programme as part of its overall eco-efficiency programme, and was

able to recycle approximately 94 percent against a targeted 90 percent of the waste in its New Zealand's operations. To manage waste, the company initiated an innovative recycling and waste minimization programme in collaboration with supply chain partners and other stakeholders such as research institutes, in which the company reduced over 3,900 tonnes of waste. The company also developed a partnership with a local recycling organization for the recycling of its thousands of used tires. This partnership has enabled the company to recycle more than 2000 tonnes of tanker tyres each year, and used tyres are transformed into innovative products such as Astro Turf (artificial turf) rather than going to the landfill. The metal off the tyres is also recycled locally and is used in the manufacturing of other useful products. The manager of company M explains the waste management approach of the company:

Waste management is a key focus for us in terms of reuse and recyclables and so that's kind of the pillars...we ensure the business is taking into account the sustainability lens, so not only making it from a cost-effective [perspective] but what's right for the long term...[from a] global [sustainability] perspective.

Similarly, the manager of the company B states:

We introduced a new internal waste management programme with the aim of decreasing the waste we send to landfill...and over 80% of our waste now goes to recycling or composting.

Company G not only focuses on reducing its store and network waste but also encourages consumers to use fewer plastic bags. Few of the companies in the sample, however, employ this type of approach where they work with their customers or

incentivise them to reduce waste or promote resource conservation. As the manager of the company G puts it:

We've got a plastic bag conservation programme as well. We decrease plastic waste by incentivising consumers not to use plastic bags, and that comes in the form of less plastic bags and we sell them...and we give the profit on the sale of those bags to charity as well.

Company G also achieved about 70 percent plastic recovery from recycling initiatives, and reclaimed plastic is transformed into other useful products such as reusable pallets and cable reels. The waste management efforts of company T fall into three categories – network waste, office waste and electronic (recycling) waste. The waste in these categories may result from the refurbishing of retail stores, office use (e.g., packaging material and paper waste) and electronic products (e.g., printer toner cartridges, mobile handsets, modems and IT equipment). The company is committed to reuse and recycle more than 95 percent of the waste from its network operations. For example, the manager of company T comments:

I have to report on a six monthly basis to [the] group and that process effectively sets in KPI...like, for instance, you know we have targets around 95 percent reduction of our waste in terms of what comes out of the network. We've also got a target around reducing our carbon footprint. And those are two of our very, our largest material impacts.

Company L adopts a somewhat similar approach to waste management; however the manager emphasizes the alignment of the waste management programme to the procurement process by critically reviewing procurement decisions from a waste perspective. For example, if the end-of-life management aspects of a product are well examined at the product design stage then waste can be substantially reduced when it comes to the recycling or end-of-life management of a product. The company employed the same principle to its network waste; over 900 broadband rollout drums across the country have been recycled in recent years. The drums are shredded and go back to parks and playgrounds where they are reused. As the manager of the company asserts:

[...] if we can get it right at the beginning of the supply chain, then we can manage it all the way through to the end...for example, to reduce our waste, we need to manage that at the beginning of the supply chain, work with our suppliers, keep the packaging down, get the transport down, you know that sort of thing and then I don't need to deal with the waste at the end because I have already eliminated it at the beginning.

The manager of company O supports the above argument, emphasizing the need for upfront evaluation of potential supply chain waste rather than leaving it to later supply chain stages:

Our [sustainability staff] focus on getting the business units to understand the value of waste and the...lost opportunity. So what they are throwing away and how they can actually look back up the supply chain and actually cut that waste

down rather than just looking at opportunities for recycling...it's about designing waste out.

In a similar vein, company R has established a partnership with one of the country's largest recycling centres in New Zealand, and in 2010 recycled more than 47,000 toners. The company provides the toner recycling service free of charge to its customers, and customers' used machines are also refurbished for resale when possible. Those that cannot be refurbished are recycled for parts (up to 98 percent recyclable in New Zealand). In addition the company does not charge customers for the disposal of unwanted electronic appliances or e-waste; this helps customers to reduce their individual carbon footprints and provides an end-of-product life management solution at no cost.

Company S actively collaborates with its suppliers to reduce its waste to landfill. The company uses big rolls of fabric that clean ink off the machines, one of the biggest sources of landfill waste. For example, the manager indicates that:

I spoke to the people that we do our composting with and they took it [rolls] away for trial and they said that ... it's quite good for the type of texture to add to the composting waste. So by dealing with the supplier we found out a better way of how to dispose of it. So I guess just slowly working through most of the products we use to work out the best way of getting rid of the waste, making sure it can be disposed of, recycled or composted rather than into land fill.

Some of the sampled companies have employed efficient production and operation methods to reduce their water usage and waste management. For example, company I installed a counter centrifuge system with the support of the New Zealand Government, a technology that helped the company to recycle a large amount of waste water. Furthermore, the application of the counter centrifuge system facilitated the recovery of some of the starch from cutting the potato chips, which the company sells to other manufacturers to make compostable packaging or animal feed. Such an application is making it viable for the company to use industrial ecology principles to attain competitive advantage. The manager argues:

We've just applied for a grant from the Ministry for the Environment [New Zealand], as part of the waste minimization fund...we've been successful in getting funding for the counter centrifuge which allows us to recycle 67 million litres of water...and not only that, but...minimizing the trade waste costs and actually creating a commodity.

6.3.4 Green Logistics and Distribution Management

Green logistics and distribution management is central to GSCM and this function needs to play an important role in corporate sustainability strategy (Dey et al., 2011) and greening the supply chain (Grant et al., 2013; World Economic Forum, 2009). On the one hand, this area supports companies' activities such as transportation management and warehousing management through the delivery of the product from the point of origin to the point of production and so to end consumers, as well as a product's end-of-life management through the application of reverse logistics. This SCM function is also responsible for producing large amounts of GHG emissions, the

use of natural resources, pollution and energy use (Dey et al., 2011; Oberhofer & Dieplinger, 2014).

Therefore, reductions in logistics, distribution, warehousing and transport impacts are considered a key priority in achieving GSCM, and to manage environmental risks and business growth (Hester & Harrison, 2004; World Economic Forum, 2009). Furthermore, logistics and transport performance improvements are becoming more and more important because of the increasing oil prices (Chadil, Russameesawang, & Keeratiwintakorn, 2008). Other notable sustainability concerns related to freight transport and logistics include traffic noise, road congestion, vibration, land use and biodiversity, pollution and road accidents (Cetinkaya et al., 2011; Grant et al., 2013; Piecyk, Cullinane, & Edwards, 2012; World Economic Forum, 2009).

The findings of the present study suggest that many companies in the sample focus on mitigating their environmental impact by integrating green management techniques to streamline logistics and distribution activities – especially companies with significant environmental impacts relating to transport and warehousing activities, such as postal services providers and transport and logistics service providers (Hoffman, 2005). The manager of the company A acknowledges the company's need to prioritize sustainability efforts and focus on those areas which contribute significantly to the company's environmental impact:

We've got some quite strong carbon emissions; only about 10 percent of our group emissions come from the stuff that we buy, so accordingly transportation is accorded a much higher weight in terms of priority...transportation accounts for

about 75 percent of our group emissions, so it's huge...we are really focussing around things to improve on in either our fleet, our electricity waste, and up and down our supply chain around the products we buy and sell.

The manager further notes that a key focus area is developing fuel efficiency in its commercial aircrafts:

We also have an aviation fleet, so we have done some work there to improve the efficiencies of those aircraft, and that has shown significant reduction in our aviation fuel bill, which contributes to a large amount of our fuel use.

Thus, for some sample companies, developing fuel efficiency is an important consideration, as fuel consumption determines their overall level of GHG emissions and environmental sustainability performance. For example, a significant amount of GHG emissions of company J relates to the use of petro-chemicals, and fuel reduction needs to be given priority. The manager of the company J argues:

You know we're the single biggest user of petro-chemicals in New Zealand and 99.37 percent of our emissions happen in the air so that's where the game in terms of carbon really plays...so [our] strategy is to get the most fuel efficient planes... that has a real implication on our efficiency. The last five years we've become 15 percent more efficient due to the planes and through innovation of things; half a billion dollars of fuel you didn't buy and 1.4 million tons this year that you didn't contribute to the greenhouse gas effect.

In a similar vein, company O is focusing on fuel reduction with more fuel-efficient locomotives and ships. The application of improved technology and efficient locomotives not only enables the company to reduce its carbon footprint (Oberhofer & Dieplinger, 2014; World Economic Forum, 2009), but also assists New Zealand business customers in reducing their carbon emissions. For example, the manager of the company remarks:

We've got quite a significant role to play in reducing the emissions in the transport sector in New Zealand and a big part of our focus is on our fuel efficiency for a start...so there's quite a bit of our focus around how do we get better technology, on board our locomotives and ferries...we can actually understand our fuel profiles.

Improved locomotives helped company O elevate its brand value by offering GSCM solutions to customers. Recently, the company helped one of its clients reduce carbon emissions by shifting the customer's freight from road to rail transport mode, which accounted for about 20,000 truck movements off the road. The literature also supports the use of clean transport modes, such as sea and rail freight compared to road transport and air freight (De Brito et al., 2008; Dey et al., 2011; González-Benito & González-Benito, 2006; Grant et al., 2013; Oberhofer & Dieplinger, 2014; Woodburn & Whiteing, 2012). The following comment of manager reflects this situation:

We are starting to do a bit more work with our freight customers to help them understand the environmental advantages of shifting to rail. (Company O)

The benefits of such improvements are not limited to the business sector only; on a wider scale these changes may better influence the promotion of the ‘clean and green image’ of New Zealand internationally. The manager of the company O argues:

[...] we are quite a freight-dominated business, that’s a big part of [our business], but also...tourism is part of our business, our long distance trains and our ferries. It’s about moving to a more responsible tourism option.

Other companies also reported economic and environmental gains from transport and logistics related sustainability initiatives. For example, company Q has worked on reducing costs and fuel usage over the last few years. The company installed a new computer system and also invested in the procurement of efficient hybrid and clean vehicle technologies that reduced its fuel costs and carbon emissions. These strategies are commonly used by proactive companies to reduce their GHG emissions and improve operational efficiencies (Dey et al., 2011; Hoffman, 2005; McKinnon, 2012; Oberhofer & Dieplinger, 2014; World Economic Forum, 2009). The manager of the company puts it:

We had reductions in our vehicle footprint year on year, and [over the] last 12 months we chose to really focus on trying to reduce our vehicle costs...we reduced our vehicle cost by a further 25 percent...I would have thought that we were already extremely efficient, on our logistics side, and yet we took a quarter of our fuel costs out again....I don’t think that we would have looked at it from that perspective if we hadn’t started learning about sustainability.

Company K has also achieved significant fuel savings and costs reduction by commissioning a new efficient vehicle fleet (McKinnon, 2012) deciding to forgo its executive car fleet policy. For example, the manager comments:

We've had a specific programme in place to reduce fuel consumption with the vehicles...we sourced vehicles that are fit for purpose but are as efficient as we possibly can get them. So the five-year period fuel consumption from our vehicle fleet has gone down by over 40 percent...it's been kind of aided a little bit by the fact that we no longer have a company car fleet so again that was a significant reduction.

Other companies focus on fleet renewal and driver training programmes for achieving fuel efficiency in logistics network. By minimizing the average age of a fleet and changing the behaviours of drivers through training, some companies have eliminated inherited redundancies in their logistic operations, which in turn have improved their competitiveness (Hoffman, 2005; McKinnon, 2012; Oberhofer & Dieplinger, 2014).

The manager of the company A describes these changes:

Over the past few years we have undertaken a fleet renewal programme...we have brought the average age of our fleet down from about 14 years to about six. That's recorded some quite significant fuel savings...and we have applied a driver training programme to teach [staff] how to drive more efficiently, and that's showing quite strong results too...10 percent reduction in fuel used by those drivers and that's really quite impressive.

A similar approach is adopted by company O which recently implemented a sophisticated driver advice system and fleet up gradation programme. The manager of the company notes:

We have implemented a driver advice system into our locomotives, which actually provides you with a forward view of the track, and it advises the driver whether they should put their accelerator down or take the hand off the accelerator. [This] is one of the key things which is going to help with our fuel saving...also we've brought in 20 new locomotives which are way more fuel efficient than the existing ones, and we've got another 20 on the way.

The use of technology is instrumental in developing environmental sustainability and improving a company's competitive advantage. The findings indicate that several companies utilize advance logistics technologies to enhance their operational efficiency. For example, company O uses state-of-the-art technology, called a rail grinder, that extends the lifespan of the track by eliminating defective and unwanted metal from the track surface. The company also employs fuel monitoring and intersleek free fouling control coating technologies for its ferries, which provides about a seven percent reduction in fuel usage. On the other hand, company A has implemented selective reduction technology (high-performance, fuel-efficient control system), GPS vehicle tracking technology and reconfiguration of freight by enhancing vehicle capacity. Recent research indicates that the application of GPS tracking enables companies to significantly reduce energy usage and carbon emissions and improve operational performance (Chadil et al., 2008).

Along similar lines, company M has implemented computerized vehicle routing software, which enables it to minimize vehicle use and improve fuel efficiency. According to Eglese and Black (2012), vehicle routing and scheduling software packages permit a company to save between 5 and 20 percent of transportation costs through better routing and avoiding unnecessary distances travelled. The software identifies the best possible option for material delivery, by rail or road, and so by constant data monitoring improves sustainability outcomes. In particular, company M has accomplished a 15 percent fuel efficiency using this computer-aided technology. Oberhofer and Dieplinger (2014) suggest that routing software is good environmental tool for the optimization of transport services.

Freight consolidation, reduction in replenishment frequency and slow streaming are other useful green logistics strategies by which the transport impacts of companies can be reduced (Carvalho et al., 2011; Dauvergne & Lister, 2013; Oberhofer & Dieplinger, 2014; Sarkis, 2014). One such example is company W, which has chartered a shipping business and places bulk orders for its shipping consignments. The company has integrated its scheduling, marketing, distribution and logistics strategies to accomplish operational efficiencies. The company has also adopted slow streaming to reduce its carbon emissions and save fuel costs while exporting its products thousands of miles away in different countries (Dauvergne & Lister, 2013). Company Q also employs freight consolidation, which has enabled the company to save money and reduce its carbon emissions (Sarkis, 2014). As the manager suggests:

If it's a large order then we get it delivered direct to the other site, but generally speaking we hold this tiny amount of stock here and just by stockpiling we save a

lot of money in freight....so if we are not paying a lot of money in freight we are obviously doing [fewer] orders too which is good. (Company Q)

Sustainability advantages have been reported by the sampled companies through network optimization and redesign principles. These strategies include consolidation of warehousing and centralized storage/distribution, direct shipment to the end user (proximity to customers), alternative transport modes for emissions reduction and partnerships with service providers for the reduction of GHG emissions. According to Sarkis (2014), strategic infrastructure design issues, such as centralization of distribution, warehouse size, reduction in the number of warehouses and warehouse location decisions, influence supply chain sustainability performance. For instance, although the centralization of distribution systems increases transport requirements, modifications in network design enable consolidation and thus can be beneficial from the perspective of logistics/operational efficiency and environmental performance (Cetinkaya et al., 2011; Grant et al., 2013; Kohn & Brodin, 2008). The manager of company A remarks on current changes in network design and the company's future aspirations:

We have a number of future initiatives around network efficiency that will be taking place over the next few years which are really around network design...we kind of feel like we are very strongly getting on top of efficiency of the existing network and we are moving into network redesign to remove some embedded waste and embedded inefficiency in our network...but that's a very long and big piece of work that is business-wide.

Company R has also redefined its warehousing and distribution network to attain operational efficiency and reduction in GHG emissions. The company has consolidated its three separate warehouses in different locations into a single, large warehouse. This network modification has provided several advantages to the company, including reductions in administration costs, transportation costs, delivery time and GHG emissions, as well as minimizing road congestion and truck movements. Furthermore, the layout in the new facility is designed in a way that makes it easier for warehouse employees to locate and dispatch orders more proficiently, thus improving the resource efficiency of the company. The extant literature also supports the application of the cross-docking mechanism where “goods [are] received, processed and dispatched without being stored” (Grant et al., 2013, p. 78), which leads to savings in inventory costs.

A similar approach is adopted by company M. In 2005 the company centralized its warehousing facilities into a single, large warehousing unit near the railway track. This change has simplified the company’s storage and distribution of supplies, and a large volume of supplies has been shifted to rail transport, making the company more efficient and sustainable (González-Benito & González-Benito, 2006; Oberhofer & Dieplinger, 2014; Woodburn & Whiteing, 2012), compared to previously when consignments were sent directly to the port via the road, and enabling the company to reduce road congestion and GHG emissions. The company has accomplished a fuel saving of 20 percent (approximately 499,000 litres) between 2005 and 2010, and a reduction of 2,000 tons of carbon emissions.

Green transport modes are also adopted by other companies, such as company H and company R, which prefer coastal shipping and rail transport over airfreight. For example, the manager of the company H argues:

We discourage airfreight, because the quantity of air carbon...is huge compared to coastal and rail shipping.

Company R, on the other hand, reported it has reduced its airfreight recently by about 20 percent through the use of shipping costs scheduling which enables the SCM team to keep track of time, costs and sustainability aspects using intermodal transport options and balancing them accordingly. Conversely, few companies emphasized the significance of developing collaborative relationships with their logistics service providers. Some reported the benefits of such collaborative engagements, including warehouse utilization, transport optimization and reduction in GHG emissions, through better communication and the use of information and communication technologies (ICT), and other joint network efficiencies. The extant literature emphasizes the need and value of developing collaborative relationships with both internal and external supply chain partners, such as customers, logistics and transport organizations and the purchase department, in terms of greening supply chains (De Brito et al., 2008; Zhu, Sarkis, & Lai, 2012).

6.4 Conclusion

This chapter has examined how companies address GSCM issues in SCM. The findings revealed that companies seem to be actively engaged in intra-organizational environmental activities. In addition, companies have implemented numerous environmental practices which enabled them to develop their internal GSCM

performance, reduce costs and enhance operational improvement. However, based on the findings of this study, it appears that some commitment and enthusiasm is lacking when companies manage their inter-organizational environmental activities. Thus, it is found that few companies actively collaborate with their supply chain partners to enhance GSCM performance at the inter-organizational SCM level. Another key result discussed in this chapter is that the implementation of GSCM practices is dependent on context-dependent factors such as customers' willingness to pay, industry related requirements, product type, regulations, capacity and knowledge of GSCM approaches.

CHAPTER 7

Discussion

7.1 Introduction

This chapter integrates the findings from the previous three chapters and develops links with the theoretical framework proposed in chapter 3. The purpose of the chapter is to discuss and reflect on the empirical findings of the study in relation to the literature, drawing from stakeholder theory, contingency theory and TCE theory, which contribute to SSCM theory. Guided by SSCM theory development the key findings are then transformed into an integrative SSCM framework that shows the interrelation among the different SSCM themes revealed in this study and their connection to stakeholder theory, contingency theory and TCE theory.

The remainder of the chapter is organized as follows. It begins with an overview of SSCM motivators and barriers with regard to stakeholder theory and contingency theory. The second section explains the SSCG mechanisms used by companies to manage their SSCM performance. The application by companies of these SSCG mechanisms is discussed in relation to TCE theory and contingency theory. The third section describes how companies use GSCM approaches to safeguard their SSCM performance, and the GSCM approaches are then critically analysed with reference to contingency theory. The last section brings together the discussions of the previous sections into a coherent integrative SSCM model.

7.2 SSCM – Motivators and Barriers

The motivators and barriers to SSCM implementation are examined in chapter 4. In this section, stakeholder theory and contingency theory are applied to empirical results to

develop a theoretical understanding of the factors that propel or hinder companies to adopt SSCM.

The findings of this study support the importance of stakeholder theory by indicating that many companies address sustainability concerns in SCM to meet stakeholder requirements. The fundamental premise of stakeholder theory is that organizational stakeholders exert pressure on companies to reduce their externalities by embracing sustainability practices in business operations (Donaldson & Preston, 1995; Freeman, 1984; Sarkis et al., 2011). Furthermore, the findings support both normative stakeholder theory and instrumental stakeholder theory (see chapter 3). The results suggest many managers believe that engaging in SSCM and promoting ethical business practices across the supply chain network of a company is the ‘right thing to do’. The attitude of top management and the sustainability values of managers are decisive normative factors for SSCM adoption. This finding is congruent with the basic premise of normative stakeholder theory, which advocates that all stakeholder interests are important and should be addressed accordingly, whether or not satisfying these needs produces positive economic value for a company (Sarkis et al., 2011). This finding is in line with past studies, that the personal interest and commitment of top management and the ethical motives of an organization’s management are crucial contributory factors in the implementation of sustainability (Dey et al., 2011; Lieb & Lieb, 2010; Ramus & Oppegaard, 2006; Sharfman et al., 2009; Walker & Brammer, 2013).

Internal instrumental factors such as cost reductions, operational efficiency, the mitigation of social or environmental risks, sales increases and long-term business orientation may provide positive inducement for companies to adopt SSCM. At the

external level, however, customers' expectations and/or pressures, reputation enhancement, regulations, public awareness and pressure from NGOs may drive companies to implement SSCM. These findings resonate with previous research that report both internal and external stakeholder forces compel companies to adopt SSCM (e.g., Brockhaus et al., 2013; Chkanikova & Mont, 2015; Hofmann et al., 2014; Morali & Searcy, 2013; Oelze et al., 2014; Schneider & Wallenburg, 2012; Soundararajan & Brown, 2014; Wolf, 2014). Therefore, managing conducive relations with supply chain actors and effective stakeholder management are significant factors in achieving improved SSCM performance. Scholars have argued that proactive engagement and good relationships with stakeholders make it easier for companies to achieve SSCM results (Asif, Searcy, Zutshi, & Fisscher, 2013), overcome uncertainties and develop trust with stakeholders (Matos & Silvestre, 2013) by reducing agency and transaction costs (Schneider & Wallenburg, 2012). This argument points to an overlap between stakeholder theory and the TCE perspective in the implementation of SSCM.

The findings also provide clear evidence that many companies in this study implement SSCM based on the argument of instrumental stakeholder theory. Proactive stakeholder management positively influences a company's performance, profitability and long-term survival, a critical reason for companies to embrace SSCM. Accordingly, this thesis argues that the conscientious and prudent management of instrumental factors is imperative for a company to maintain its legitimacy and credibility in society – and to achieve competitive advantage. In this regard, Brockhaus et al. (2013) argue for a more collaborative and participative approach for developing relationships with stakeholders. They recommend that focal companies use a participatory rather than a mandatory approach with suppliers for the implementation of SSCM.

Normative and instrumental stakeholder perspectives are often conceived as unrelated streams of stakeholder theory with dissimilar assumptions (Donaldson & Preston, 1995). This study recognizes that these stakeholder perspectives may have different premises or assumptions; however, in reality it may be difficult to precisely determine the cause of orientation or the purpose of managers in embracing sustainability in their companies. Normative and instrumental stakeholder theories may be considered complementary and supportive to each other. For example, investment in sustainability with pure normative objectives, such as the ethical values of managers or an owner's affiliation to sustainability or the natural environment, can create a positive image of a company in society or may reduce business risk, which in turn may enhance a company's reputation, societal legitimization and sales. Thus, it is argued that profits and ethics go hand in hand (Svensson et al., 2010), and there is a growing realization among companies that “they could earn higher profits if they were good citizens of the community” (Rodgers & Gago, 2004, p. 359). Svensson et al. (2010, p. 342) point out that “the declaration of a profit or loss is only the first of a set of criteria upon which the marketplace and society evaluates the performance of the company. This is where sustainable business practices from an ethical perspective become crucial and may benefit the company in both the short and the long run”.

Based on contingency theory discourse, this study suggests there is no ‘one best way’ or ‘universal approach’ for organizational effectiveness; that organizational performance results from creating a fit between an organization's characteristics with its contingencies (e.g., Donaldson, 2001; Lawrence & Lorsch, 1967; Luthans & Stewart, 1977; Silvestre, 2014). The empirical results show that a company's adoption of SSCM

is determined by context-dependent factors. For instance, at the organizational level the commitment and support of top management, the perception of sustainability risks, a company's strategy and structure, as well as its financial constraints, organizational size, organizational culture and employee awareness, are key contingency variables influencing the adoption of SSCM.

On the other hand, external contingency variables such as regulation, variations in industry, degree of trust between buyer and supplier, level of stakeholder pressure (e.g., customers, NGOs and public pressure), lack of supplier awareness and inadequate customer demand for sustainable products or service may also influence SSCM espousal. Accordingly, the successful implementation of SSCM is contingent upon a range of internal and external factors, including the effective management of stakeholders (Ageron et al., 2011; Schneider & Wallenburg, 2012; Soundararajan & Brown, 2014). However, it is important to emphasize that the above-mentioned contingency factors are context-specific; therefore lessons learned in the New Zealand business context cannot be fully translated into other business contexts. Industry- and country-specific SSCM research would bring more fruitful results in developing a more profound understanding of context-specific variables for the implementation of SSCM.

The results of chapter 4 provide clear support for contingency theory by highlighting that SSCM adoption is contingent upon internal and external factors. A company's SSCM strategy is determined by how and to what degree internal or external contingency factors impact its performance. This agrees with the previous literature that supports the notion that the adoption of SSCM depends on contextual circumstances (Halldorsson et al., 2009; Oelze et al., 2014; Schneider & Wallenburg, 2012). For

example, Oelze et al. (2014) report that company size has a significant impact on the adoption of SSCM. They further argue that MNCs are motivated by external stakeholders, while for SMEs the values of the owner influence SSCM implementation. Schneider and Wallenburg (2012, p. 252), on the other hand, argue that companies belonging to the same industry face similar contextual circumstances, such as regulation, NGO pressures and competitors, yet corporate size, image, business strategy and capability may differ for companies operating in the same industry. Blome and Schoenherr (2011) reported that service and manufacturing companies take different approaches to SSCM risk management. They assert that manufacturing organizations generally have more robust SSCM processes and systems compared to service organizations because of the higher level of risk associated with manufacturing. Based on the above discussion, it appears that creating a fit between an organization's characteristics and its contextual circumstances is important for improving SSCM performance.

7.3 Sustainable Supply Chain Governance

Chapter 5 investigated the use of SSCG mechanisms by which a company oversees its SCM activities and business relationships with upstream supply chain partners to achieve SSCM performance. The chapter discussed two types of SSCG mechanisms – hands-off and hands-on approaches – used by companies to manage their upstream SSCM performance. The chapter also outlined the sustainable procurement process by which a company controls and governs its suppliers' sustainability behaviour with regards to the implementation of SSCM. The chapter outlined five phases of the sustainable procurement process; planning, implementation, monitoring and auditing, development and engagement and reporting (see chapter 5, figure 5.1). The chapter

concluded with a SSCG model based on two dimensions – corporate pro-sustainability orientation and SSCM maturity. The model categorizes companies into five phases based on their corporate pro-sustainability orientation and SSCM maturity. This section examines the results of chapter 5 by drawing on contingency theory and TCE theory.

The findings reveal that a company may employ either a hands-off or a hands-on approach exclusively; these approaches can also be applied simultaneously for SSCM governance (e.g., Beattie & Mont, 2012; Hoejmose & Adrien-Kirby, 2012). Both of these governance modes can develop SSCM performance. Pagell and Wu (2009) argue that the hands-off approach to SSCM governance is useful in maintaining social standards in supply chains, while the hands-off approach can be beneficial in enhancing GSCM performance. Conversely, Hoejmose and Adrien-Kirby (2012) assert that the hands-off (certification-based) approach to SSCG is more rigorous than the implementation of codes of conduct. According to Boyd et al. (2007), the certification approach – that is, SSCM adoption based on third-party intervention – permits an easy comparison of the implementation of social and environmental standards among companies and across supply chains.

The present study suggests more in-depth descriptions for the use of SSCG governance approaches. The findings reveal that companies use these approaches according to their business requirements, the availability of sustainable choice in the market, associated costs of sustainable options and sustainability risks associated with upstream SCM activities (Beattie & Mont, 2012). For example, companies operating in the food retail and merchandise sectors usually rely on a hands-off approach to SSCM. Such companies prefer to buy third-party certified products as they are not required to invest

large amounts of resources or develop the capabilities of suppliers when procuring goods and services. In adopting this approach buyers can push the business costs for attaining relevant certification onto suppliers (Brockhaus et al., 2013). Another possible explanation is that companies have a range of product lines, and for each product or supplier it may be difficult to engage in a customized (direct supply-chain governance) approach to sustainable procurement, given the complexity and variety of a company's SCM.

On the one hand, the hands-off approach offers advantages to buyers – stress-free management, cost reductions, the shifting of responsibility and risk to third-party organizations and marginal effort in managing suppliers. On the other hand, sole reliance on a hands-off approach reduces the opportunity for mutual learning and innovation, deep engagement and reciprocal development between a buyer and a supplier (Beattie & Mont, 2012). Also, a buying company has limited control over the activities and operations of suppliers or third-party organizations, which can make buyers vulnerable to other organizations in the management of sustainability risk. It can be argued, therefore, that the hands-off mechanism is a more refined form of the traditional 'arm's length' relationship in which buyers go further and include facets of sustainability in purchasing conditions other than commercial targets, with little regard for challenges or issues faced by upstream supply chain partners. In line with the above argument, some scholars (e.g., Beattie & Mont, 2012) have criticized the efficacy of the hands-off approach for developing social and environmental conditions at suppliers' factories.

Large companies and MNCs may also employ both hands-off and hands-on approaches to SSCG. The hands-on approach to supply chain governance is more rigorous than the hands-off approach because the former method enables a buyer to directly monitor and engage and collaborate with suppliers for improving SSCM performance. At the same time, a buyer is required to dedicate substantial resources to adopt a hands-on approach to supply chain governance.

The findings indicate that companies adopt two types of hands-on approaches – monitoring and collaboration – to govern supplier behaviour. It can be argued that both approaches are useful to maintain a company's SSCM performance and can be employed simultaneously. However, preserving a balance between the monitoring and collaboration approaches (Large & Thomsen, 2011; Marco & Paolo, 2014) during implementation of the sustainable procurement process is a significant factor in upholding long-term, trust-based relationships between suppliers and buyers.

One possible explanation for adopting a balanced approach is supported by TCE theory, which suggests that the disproportionate or excessive use of monitoring, policing or enforcement of sustainability standards or codes of conduct by the supplier has a detrimental impact on SSCM performance (Brockhaus et al., 2013). This may create hostility, distrust and frustration in the trading relationship between a buyer and a supplier (Soundararajan & Brown, 2014), which may negatively impact on overall transaction costs and reduce the buyer's competitive advantage (Carter & Rogers, 2008). A supplier may feel bullied by a buyer and will most likely engage in opportunistic behaviour and conceal non-compliance to sustainability standards or camouflage other risky sustainability issues in its operations (Brockhaus et al., 2013).

Moreover, some level of monitoring is essential (Blome & Schoenherr, 2011; Zsidisin & Siferd, 2001) for record keeping, sustainability disclosure and risk mitigation, and to provide proof of suppliers' compliance to codes of conduct for internal and external stakeholders. According to Zsidisin and Siferd (2001, p. 71), "even though the transaction costs of monitoring may appear to be initially higher, lower total costs over time and reduced risk may be realized. As the trust between these organizations builds, monitoring supplier behaviours becomes unnecessary. From a long-term perspective, transaction costs are minimized".

It is important to note that monitoring on its own is not sufficient to ensure that suppliers enhance sustainability standards in the upstream supply chain network and the implementation of suppliers' codes of conduct. So the monitoring process must be augmented by mutual adaptation activities (Foerstl et al., 2010; Gimenez & Sierra, 2013; Gimenez & Tachizawa, 2012), such as consistent two-way communication and information sharing between buyer and supplier and an understanding of supplier issues such as lack of capability and resources. An improved level of systematic coordination between supply chain actors may enhance trust and mutual understanding (Caniëls et al., 2013; Frostenson & Prenekert, 2014; Soundararajan & Brown, 2014; Vachon & Klassen, 2006a), which may benefit both supplier and buyer in terms of achieving competitive advantage (Brockhaus et al., 2013; Foerstl et al., 2010; Seuring, 2011; Sharfman et al., 2009) by reducing opportunistic behaviour, uncertainty, risk and total transaction costs (Ciliberti et al., 2008). Furthermore, knowledge enhancement mechanisms and organizational learning activities such as training and development activities, at both the intra-organizational and inter-organizational levels, can also improve the implementation of SSCM (Oelze et al., 2014).

The findings suggest that few companies formally provide technical assistance, resources, training, workshops and other support to suppliers to enhance their SSCM capability. The present results also reveal that a TBL focus is lacking, and most of the companies collaborate with their suppliers for economic or commercial reasons rather than for enhancing social or environmental sustainability. As indicated, collaborative relationships are not pursued for pure sustainability reasons although there seems to be consensus among managers to encourage a more engaged and collaborative approach to SCM management. Therefore, to strengthen SSCM implementation, companies need to go beyond engagement for economic reasons to a holistic collaboration for TBL performance. The key reason for the need for promote deep engagement (Boström et al., 2014; Caniels et al., 2013; Sisco et al., 2010) is because SSCM includes the development of sustainability over a range of interconnected activities, processes and entities. Managing such a complex set of systems and entities with varied objectives requires profound relationship building with multiple stakeholders across the entire supply chain network to achieve the desired sustainability objectives (Beattie & Mont, 2012; Coyle et al., 2015; Marshall et al., 2014; Roberts, 2003; Roehrich et al., 2014). As Zsidisin and Siferd (2001, p. 71) argue, “true sustainability requires enormous cooperation within supply chains...[and] involvement of all trading partners”.

Risk and reward sharing is also critical to SSCM implementation from a supplier perspective. A disproportionate risk and reward sharing structure could be detrimental to all supply chain members in the long run (Brockhaus et al., 2013). Scholars have argued for encouraging shared responsibility between buyer and supplier companies, reward sharing, recognition programmes, awards and other incentives for suppliers as

important factors in improving SSCM performance and reducing opportunistic behaviour (Andersen & Skjoett-Larsen, 2009; Brockhaus et al., 2013; Soundararajan & Brown, 2014). However, the findings in this study emphasize that only a handful of buying companies have a robust, mutual, risk sharing and reward structures through which supplier sustainability innovation and creativity may be acknowledged or rewarded.

The results further indicate that very few companies encourage SSCM engagement by lower tier suppliers. The development of lower tier suppliers can achieve positive results in achieving the goals of sustainable development. For example, small suppliers at the bottom of the pyramid often lack resources, capabilities and awareness, and may face intense social or environmental issues (Sisco et al., 2010). From a broader sustainability perspective, monitoring and collaboration processes should be extended to the lower tiers of upstream supply chains (Koh, Gunasekaran, & Tseng, 2011). The results indicate that companies identified several challenges concerning their engagement with first-tier suppliers but such engagement should be encouraged where possible.

According to Roehrich, Grosvold, and Hojmosse (2014, p. 714), “firms can reduce the costs associated with SSCM by collaborating with both immediate suppliers and the wider suppliers network. This can also widen the buying firm’s knowledge and improve its skills in implementing sound SSCM practices”. One possible way for supplier development to take place is to identify risks and opportunities for joint improvements in the entire upstream supply chain network through risk/opportunity mapping to classify the scope of shared developments. Another key aspect is that current SSCM

practices, such as implementation of a supplier code of conduct, set a minimum sustainability standard for suppliers. The focus needs to expand beyond minimal compliance in order to achieve the best possible sustainability outcomes for the supply chain network.

The public reporting of SSCM performance is an imperative for demonstrating transparency and gaining support of stakeholders (Mann et al., 2014). Sustainability reporting keeps key stakeholders informed about the SSCM performance of a company at both intra- and inter-organizational levels (Sisco et al., 2010). Nonetheless, the results suggest that SSCM reporting is currently not a well-established practice in the New Zealand business context. Few companies use inclusive reporting frameworks, such as GRI, or follow a comprehensive reporting process that supports detailed SSCM reporting. Based on this result, this study argues that, from a stakeholder theory perspective, it is very important for a company to disclose, showcase or demonstrate SSCM performance to its stakeholders (the public, NGOs, customers and suppliers). The public disclosure of SSCM performance and the signalling of desired, appropriate, ethical behaviour may enable a company to elevate its social legitimization and credibility among stakeholders and avoid sustainability risks (Beske et al., 2008).

The findings in chapter 5 further support the notion that there is no “one-size-fits-all” SSCG mechanism available that is all-inclusive and addresses all SSCM issues. In fact, a company’s effective implementation of SSCM is determined by establishing a fit between organizational characteristics and environmental contingency factors. The key contingency factors identified in this study, upon which the choice of a suitable SSCG mechanism depends, include a degree of perceived reputational risk exposure associated

with a supplier or a product, industry variations, regulatory regimes, geographical location, cultural differences, complexity of supply chain and availability of resources.

This finding is in line with previous literature that suggests contingency factors may influence a company's approach to SSCM (Albino et al., 2009; Andersen & Skjoett-Larsen, 2009; Blome & Schoenherr, 2011; Roehrich et al., 2014; Vurro et al., 2009; Walker & Jones, 2012; Zhu et al., 2008). For example, Roehrich et al. (2014) report that market leaders and companies operating in socially and environmentally sensitive industries are particularly exposed to reputation risk and are therefore more likely to adopt relevant SSCM approaches. Tachizawa and Wong (2014) suggest wide-ranging contingency variables including power, stakeholder pressure, industry, material criticality, distance and knowledge resources. They argued that these contingency factors influence a lead company's selection and adoption of a relevant SSCG mechanism. In addition, other scholars have identified contingency variables, such as inter-firm trust (Sharfman et al., 2009), environmental uncertainty (Wu, 2013), a company's innovative capability (Silvestre, 2014), the corporate structure, business context, corporate coherence and purchasing maturity (Rozemeijer, Weele, & Weggeman, 2003), the significance of the corporate brand and reputation (Roberts, 2003), cultural differences and geographical distance between supplier and buyers (Boström et al., 2014; Parmigiani, Klassen, & Russo, 2011).

Finally, chapter 5 introduces an SSCG model using two dimensions – corporate pro-sustainability orientation and SSCM maturity. The model classifies companies into five distant phases based on their corporate pro-sustainability orientation and SSCM maturity. An effort has been made to clarify how companies can move from one stage to

another using different SSCG mechanisms. Companies were mapped on the model to examine the SSCM approach of these companies and to determine the current progress of interviewed companies using the SSCG model. Overall, the results indicate that most companies fall in the second and third stages of the SSCG framework, illustrating a low-to-medium level of SSCM maturity and low-to-medium corporate pro-sustainability orientation. Only a few companies fall into stage 4 – a medium-to-high level of SSCM maturity.

From a TCE theory perspective, companies that fall under the first three stages (i.e., dormant players, acquiescence seekers and optimization explorers) of the SSCG model (see chapter 5) possess a relatively low-to-medium level of corporate pro-sustainability orientation and SSCM maturity. Such companies generally prefer arms-length relationships with supply chain partners or rely on monitoring as a primary source to governance the activities of their suppliers. Long-term relationships are often lacking or less preferred by buyers to manage relationships with supply chain partners. Accordingly, it is argued that under such circumstances companies face higher transaction costs due to a level high of opportunism, uncertainty and asymmetric information in buyer–supplier relationships (Ciliberti et al., 2008). Also, both suppliers and buyers would be less likely to implement SSCM proactively and attain desired SSCM performance improvements.

On the other hand, companies that fall into the fourth and fifth stages of the SSCG model (i.e., multifaceted explorers and trendsetters) hold medium-to-high levels of corporate pro-sustainability orientation and SSCM maturity. Such companies would be more successful in reducing their transaction costs by utilizing a balanced approach to

SSCG, one that makes use of both monitoring and collaboration mechanisms in suitable proportions. Maintaining apposite equilibrium between monitoring and collaboration mechanisms makes it more likely that all supply chain partners will benefit, and that overall transaction costs will be reduced by developing a culture of mutual trust and shared understanding. Activities including supply chain engagement, reward sharing and collaboration for example, will likely reduce uncertainty, opportunism and information asymmetry, which in turn may encourage companies to proactively participate in SSCM strategy.

From a contingency theory viewpoint companies that rate higher on corporate pro-sustainability orientation and SSCM maturity dimensions are arguably more proactive in adopting SSCM practices. This suggests such companies are likely to be exemplary SSCM performers. On the other hand, companies that rate low on corporate pro-sustainability orientation and SSCM maturity are susceptible to a higher level of supply chain sustainability risk and weak SSCM performance.

7.4 Green Supply Chain Management

The environmental SCM issues and practices of companies are investigated in chapter 6. The results suggest that companies are proactive in the development of intra-organizational GSCM performance. Companies have employed a range of GSCM practices and initiatives, which have allowed them to achieve improved intra-organizational GSCM performance, such as cost reductions, reductions in their environmental footprint, waste reduction and operational efficiency. At the inter-organizational level however, many companies lack a similar environmental proclivity along the upstream and downstream SCM levels. Relatively few companies have well-

established internal structures and systems by which they collaborate with supply chain partners to improve inter-organizational GSCM performance.

Furthermore, the results provide strong support for contingency theory with regard to the implementation of GSCM practices. The choice of GSCM approach depends on contingency variables, which largely influence the focus of a company's environmental strategy. For example, the results of chapter 6 show that customers' willingness to pay, industry variations, product type, regulations, capacity and knowledge of supply chain actors influence the adoption of GSCM. This finding resonates with the previous literature that the implementation of GSCM is dependent on several contingency factors (e.g., Galeazzo et al., 2014; García-Rodríguez et al., 2013; Kovacs, 2008; Oberhofer & Dieplinger, 2014).

García-Rodríguez et al. (2013), in their study of the 'handmade' sector, found that purchasing raw materials through reverse logistics is determined mainly by information and communication systems and the life cycle of the product. Purchasing uncertainty can be reduced by applying advance information and communication systems, which in turn promotes the purchasing of raw materials through reverse logistics. In the same vein, Bjorklund (2011), in her study of the environmental procurement of transportation services in the Swedish context, reported a number of contingency factors that impacts a company's purchasing decisions. She argues that an organization's management, image, customer demands, resources, carriers and government means of control are key contingency variables affecting a company's choice in procuring environmental transport services.

7.5 An Integrative SSCM Framework

The following framework is derived from the above discussion (see figure 7.1). This study, based on empirical findings, addressed the empirical gap in SSCM discipline (Ageron et al., 2011; Ashby et al., 2012; Carter & Easton, 2011; Carter & Rogers, 2008; Morali & Searcy, 2013) by expanding the theoretical framework for SSCM. The proposed SSCM integrative framework shows three interrelated parts – motivators and barriers to SSCM adoption, strategies to develop SSCM and SSCM performance outcomes – and their relation to the theoretical perspectives used in this research. In particular, the framework draws on and embeds stakeholder theory, TCE theory and contingency theory, and expounds on how, collectively, these three theories apply to the empirical findings of this study. The framework highlights the role of each theoretical perspective in the implementation of sustainability in SCM, by which it expands and confirms SSCM theory.

First, drawing on stakeholder theory the framework indicates that the concerns of stakeholders are of significant importance to companies in determining a company's overall stance on SSCM. Essentially, stakeholders expect companies to enhance their SSCM performance at the intra-organizational level and increasingly exert pressure on companies to address SSCM issues at the inter-organizational level (Hofmann et al., 2014; Park-Poaps & Rees, 2010; Schnitfeld & Busch, 2015; Wolf, 2011). Based on the empirical findings (see chapter 4), this study confirms that both instrumental stakeholder theory and normative stakeholder theory explain a company's attitude towards SSCM implementation (Donaldson & Preston, 1995; Hofmann et al., 2014).

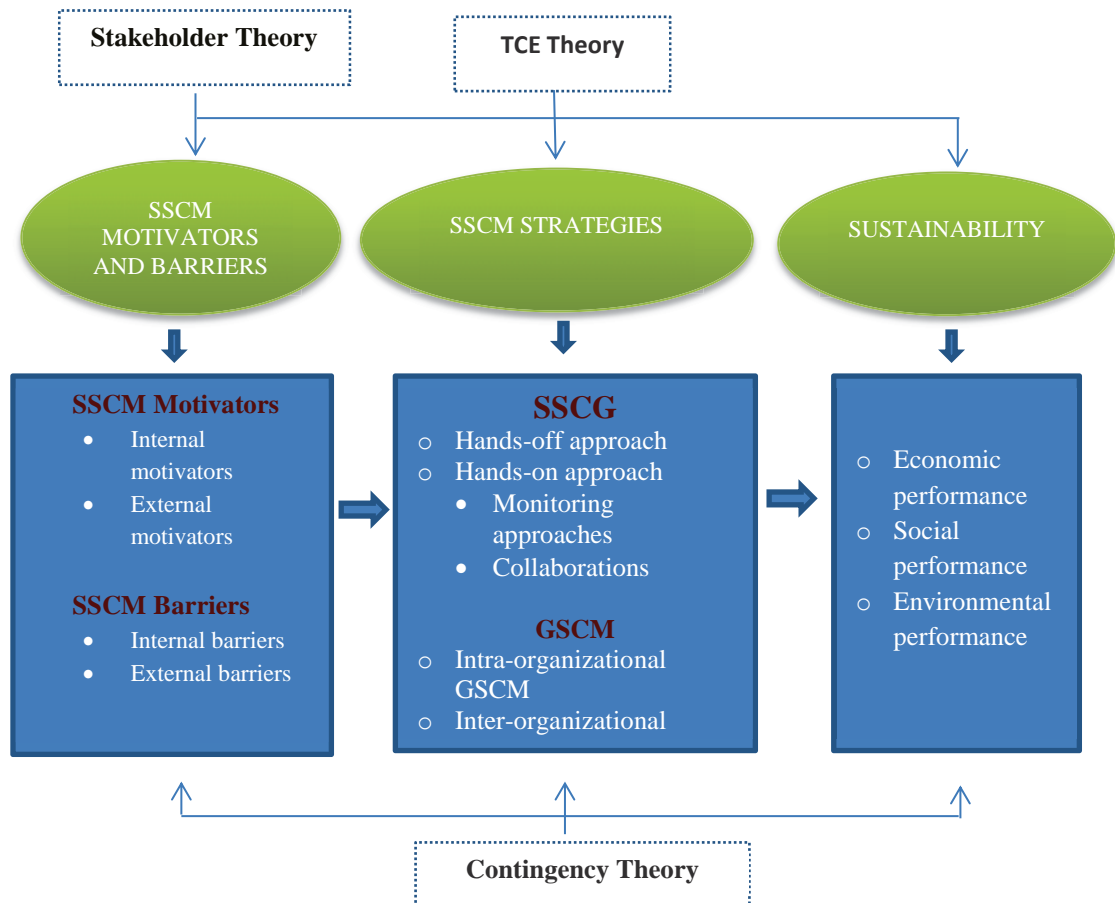


Figure 7.1: An integrative SSCM framework

Second, from a contingency theory perspective the framework reveals several contingency variables that may influence a company's SSCM strategy. It is suggested that there is 'no one best way' for a company to respond to SSCM issues, but that a company's selection of an appropriate SSCM strategy is based on matching its sustainable business requirements to contextual circumstances (Donaldson, 2001; Galeazzo et al., 2014; Sousa & Voss, 2008). Creating a fit between organizational SSCM strategy and its contextual environment is critical for a company to attain improved sustainability results both at the inter- and intra-organizational levels and in addressing the needs for stakeholders across the supply chain network. Thus, this thesis argues that, in adopting SSCM, contingency fit produces internal organizational

performance while stakeholder management creates societal legitimacy and support of relevant stakeholders groups.

Third, from a TCE theory viewpoint the framework explains that a collaborative approach to SSCG is a suitable way to achieve competitive advantage (Frostenson & Prenkert, 2014; Sharfman et al., 2009; Zimmermann & Foerstl, 2014) in the long run. This is achieved by reducing transaction costs. It is argued in this study that some level of monitoring is an imperative for maintaining public disclosure, transparency, control and legitimacy, but that greater SSCM performance results from promoting strong engagement with supply chain partners on resolving sustainability issues.

Collaborative buyer–supplier partnerships for SSCM can help attain improved performance outcomes such as cost reductions, environmental improvements and innovation. Collaboration is also worth pursuing because, supported by trust, mutual understanding and reward sharing, this can develop societal legitimacy for the entire supply chain (Sisco et al., 2010; Soundararajan & Brown, 2014). Thus, the framework supports the implementation of deep engagement and collaborative SSCM at both intra- and inter-organizational levels. At the intra-organizational level collaboration may enable a company’s departments, divisions or units to develop a combined strategic approach to sustainability. At the inter-organizational level, collaboration allows a company to develop partnerships beyond direct supply chain actors, such as suppliers, to a wide range of stakeholder groups including NGOs, regulators, trade unions, industry associations, third-party organizations and customers where possible and needed, and so improve the SSCM performance of the entire network (Chkanikova & Mont, 2015). Collaboration and strategic alliance among companies can be a useful way

to overcome conflicts of interest and political goals between supply chain actors, and enhance SSCM performance (Chkanikova & Mont, 2015).

7.6. Conclusion

This chapter integrates the findings of three empirical chapters of the study, and links them to theoretical perspectives and the literature. First, this chapter discussed the motivators and barriers to SSCM implementation in relation to stakeholder theory and contingency theory. It suggested that companies may be influenced by both instrumental and normative factors for the incorporation of SSCM. It also highlighted that there is ‘no one-size-fits-all’ approach to SSCM implementation, and therefore a suitable SSCM strategy is determined by matching a company’s business and sustainability requirements to its contextual setting.

Second, the chapter discussed the application of SSCG mechanisms for SSCM implementation in relation to contingency theory and TCE theory. From a contingency perspective, it is argued that there is ‘no one best SSCG approach’ to be followed by all types of companies in all situations. Moreover, from the TCE perspective, it is more suitable for companies to adopt collaborative rather than arms-length relationships with supply chain partners. By minimizing transaction costs, collaborative and deep engagement approaches are more likely to result in improved SSCM performance and competitive advantage for the entire supply chain network.

Third, this chapter reveals that companies are relatively proactive in promoting intra-organizational GSCM practices. However, at the inter-organizational, supply-chain level companies need to enhance their level of GSCM practice. With regard to this,

collaboration between supply chain partners is the key to achieve innovative sustainable products and to enhance the environmental performance at the supply chain network level.

CHAPTER 8

Conclusion

8.1 Introduction

This study explores why and how companies implement sustainability practices into SCM by drawing on interview data from New Zealand-based companies. This chapter concludes with the key findings of the present study. The chapter is organized into five sections. It begins with a summary of the key research findings. Then, the theoretical contributions of this study to SSCM discipline are highlighted and the study's practical implications presented. This is followed by a section describing the limitations of this study. Finally, the directions for future research are outlined.

8.2 Overview of the Study

This thesis endeavours to contribute to and extend the field of SSCM by investigating why and how companies are integrating sustainability practices into their SCM. To achieve this objective, the following research questions were formulated (see chapter 1).

- What factors motivate companies to implement SSCM?
- What barriers do companies encounter while embracing SSCM?
- How do companies govern their SCM operations to achieve SSCM performance?
- How do companies manage environmental issues in SCM?

The exploratory nature of the research questions and the lack of empirical research on SSCM has made it appropriate to use qualitative exploratory case study design. The

data were drawn from 23 New Zealand-based companies, using a multi-industry case study approach. The samples include only those companies known for their commitment to sustainability using various sustainability platforms such as SBC and SBN. A total of 29 semi-structured interviews were performed with senior managers who were responsible for managing their company's sustainability and SCM-related responsibilities. In this study three theoretical perspectives have been adopted to guide the analysis – stakeholder theory, contingency theory and TCE theory. The overall findings of the study were presented and summarized in the form of an integrative SSCM framework.

8.2 Research Findings

This study shows that SSCM is a critical issue for the business sector. The existing business environment is continuously driving companies to adopt sustainability beyond their corporate boundaries. There is a growing understanding among practitioners that corporate survival and competitiveness is largely influenced by its response to social and environmental issues. However, the research found that not all companies are on the same level of maturity in terms of implementing SSCM. There are variations in the implementation of SSCM motivators and barriers which are determined by context-dependent factors. The companies' approaches to SSCM also differ, with some companies concerned with environmental supply chain issues while others consider social issues crucial to maintaining SSCM performance. The summary of the findings of each empirical chapter (chapters 4, 5 and 6) are briefly presented in the subsequent subsections.

8.2.1 SSCM – Motivators and Barriers

Chapter 4 revealed the factors that both propel companies towards and inhibit them from adoption of SSCM. The findings reported that companies are more influenced by motivators than barriers to SSCM implementation. This shows that in future more companies may consider adopting SSCM. In addition, the findings reported that instrumental motivators, including cost reductions, operational efficiency, corporate reputation, customer pressure and risk management, are prime factors motivating companies to embrace SSCM. Conversely, normative motivators such as top management support and managers' sustainability values also play a central role in implementing SSCM. It is argued in the chapter that normative and instrumental motivators to SSCM should not be regarded as conflicting factors but rather viewed from a reconciliation perspective. This indicates that both perspectives substantiate each other for a better SSCM performance.

The findings further reveal that companies face internal and external barriers that prevent them from successfully implementing SSCM. External barriers, such as concerns with suppliers and lack of customer demand seem to be more visible than internal barriers, such as cost concerns and strategic/structural constraints. One of the significant findings, related to motivators and barriers to SSCM implementation, is determined by context-dependent factors. These factors include industry type, managerial perception of sustainability risks, stakeholder and public pressure and incentive and reward systems that can influence companies' decisions regarding the implementation of SSCM.

8.2.1 Sustainable Supply Chain Governance

Chapter 5 examined how companies govern their SCM activities aiming at enhancing SSCM performance. Companies use two main types of SSCG mechanisms – hands-off and hands-on governance approaches – but their implementation is determined by context-dependent factors such as the level of perceived risk, industry requirements, product type, supplier capability, information asymmetry, complexity, regulatory regime and cultural differences. Based on the empirical findings a sustainable procurement process is detailed in chapter 5, which shows the steps companies typically follow to acquire needed materials or products from their suppliers. Finally, a SSCG model is proposed, which expands the scope of previously suggested sustainability frameworks. The model classifies companies into five distant progression stages based on two dimensions – SSCM maturity and corporate pro-sustainability orientation.

8.2.3 Green Supply Chain Management

Chapter 6 focused on exploring the environmental SCM practices of companies. The findings revealed that companies appear to be actively engaged in enhancing their intra-organizational environmental performance. In this regard, companies have adopted environmental practices to amplify their environmental performance at the internal SCM level. However, it seems that the commitment of companies is lacking in terms of addressing their inter-organizational environmental performance. Very few companies actively collaborate with their supply chain network partners to improve their GSCM performance. The findings revealed that the implementation of GSCM practices is also dependent on contextual factors, including customer demand and willingness to pay, industry requirements, product type, perceived level of stakeholder pressure, availability of finances, regulations and capacity and knowledge.

8.3 Theoretical Implications

This study contributes to SSCM theory in several ways. One of the main contributions of this study is the development of an SSCM integrative theoretical framework (see figure 7.1). Previous SSCM literature has explored SSCM conceptually, with few exceptions where scholars have endeavoured to empirically develop SSCM theory. In response to a gap in the previous literature regarding the lack of SSCM theory, the present study has empirically developed an integrative SSCM framework.

This study is one of the pioneer studies that have explored the implementation of SSCM in New Zealand. Its findings compensate for the shortcomings of previous SSCM research in this country, which has examined sustainability largely from an intra-organizational (internal) perspective. The current study is timely as it provides original insight into the existing state of SSCM implementation in New Zealand, from both an intra- and inter-organizational perspective.

Another key contribution of this study is the application of multiple theoretical perspectives – stakeholder theory, contingency theory and TCE theory – to SSCM implementation. From a stakeholder theory perspective, it is argued that normative and instrumental motivators should not be viewed as contrasting elements to SSCM adoption. A company that follows SSCM may be motivated by instrumental and normative rationality simultaneously. It is further suggested in this thesis that both normative and instrumental motivators may be involved in supporting companies to embrace SSCM.

This study further revealed that ‘one size doesn’t fit all’, and that the implementation of SSCM is determined by context-dependent factors. This finding substantiates the relevance of contingency theory to SSCM implementation. Thus, it is argued that the implementation of SSCM should not be approached from ‘universality perspectives’ but that developing a profound understanding of a company’s settings and context and matching its SSCM strategy would be a more appropriate option.

From the perspective of TCE theory, this thesis finds that collaborative buyer–supplier relationships rather than arms-length relationships are desirable for attaining improved SSCM performance. Building cooperative business relations with supply chain partners may enable the buying company to better manage multifaceted issues such as supply chain complexity (culture difference, differences in regimes, value systems, working practices and organizational norms), uncertainty (supply chains’ financial, social, environmental, physical and security risks) and information asymmetry.

8.4 Practical Implications

This study has implications for practitioners who plan to adopt SSCM in their companies. First, businesses will learn and benefit from the current findings regarding the implementation of different SSCM aspects into their overall business model. The findings suggest that a proactive stance by companies on SSCM will enable them to reduce their exposure to reputational risk and improve competitive advantage.

Second, the empirical results suggest that companies face motivators that propel them towards and barriers that inhibit them from implementing SSCM. Developing an improved understanding of these motivators and barriers may be very useful to capture

current sustainability trends in the modern business environment, which constantly presents new challenges and opportunities for companies. For example, the findings clearly indicate that managers highlight SSCM benefits, such as operational efficiency, financial performance and reduction in reputational risks, but at the same time point out the role of top management in developing SSCM within their companies. The findings further revealed obstacles that may slow down the pace of SSCM implementation; these include economic constraints, strategic and structural barriers, supplier-related issues and lack of customer demand. Some of these barriers are relatively easy to overcome; for example, supplier-related issues may be resolved by developing trust-based, collaborative relationships as well as regular contact and feedback that could reduce monitoring requirements and risks on the part of suppliers. A key finding of this study, in terms of managerial implication, is that every company is unique and has a different set of business requirements; thus an appropriate response to SSCM may vary from company to company and is determined by context-dependent factors such as the level of stakeholder pressure, company structure and industry type.

Third, this study offers suggestions regarding the sustainable governance of supply chains. It is proposed that an appropriate governance of supply chains is a key managerial issue. Companies can utilize various approaches to manage their supply chain sustainability risks. However, ‘one size doesn’t fit all’, and the choice of specific SSCG tool can be determined by its relevance to a company’s requirements, such as internal issues or external industry-related issues.

It is also reported that both monitoring (supplier audit) and collaboration (suppliers’ training and development workshops, reward systems, cost sharing with suppliers and

suppliers' awards) hands-on approaches are valuable tools and should be used simultaneously to improve upstream supply chain performance. A balanced managerial approach would be more suitable than using either of these approaches by itself. For example, monitoring would provide the necessary information on which areas or issues relating to suppliers need to be addressed, while collaboration would enable a buyer to resolve issues in depth with mutual dialogue, remediation, communication and resource sharing. It is also proposed that ad-hoc and forced implementation (arms-length relationships with suppliers) of social and environmental criteria along the supply chain might deliver short-term benefits only, such as reduction in risks (dictatorial perspective). Long-term improvements and competitive advantage can be only attained by developing profound, collaborative, trust-based relationships (participative model) with SCM partners (risk and reward sharing structure). A buying company should encourage collaboration at the lower-tier of suppliers' level where possible.

Another practical relevance of this study is the SSCG model that explicates a useful step-by-step approach which a company can follow to improve its supply chain governance and overall SSCM performance. The model shows the relationship between a company pro-sustainability orientation and SSCM maturity, and how it is relevant for the enhancement of SSCM performance.

This study provides valuable insights to practitioners on the management of environmental issues in the supply chain. As reported in this study, companies have a range of environmental initiatives in place to control and manage the environmental impacts of internal operations. However, this focus should extend to external operations, including upstream and downstream supply chains levels. The central

justification for this extended focus is increased stakeholder requirements; the opportunity for economic and environmental gains associated with supply chains and improved risk management. In this regard companies need to develop collaborative relationships with upstream and downstream supply chain partners by which new creative opportunities may be discovered for attaining improved GSCM performance.

8.5 Limitation of the Study

Despite the valuable contribution of this research to SSCM literature, this study has its limitations, which provide avenues for future research. The limitations of this study are as follows:

First, the findings may not be statistically generalized to a large population because of the qualitative nature of this study. The main goal of a qualitative case study is to provide in-depth insights of a phenomenon in its unique setting. Hence, case studies focus on achieving analytical generalization rather than statistical generalization. This provides an opportunity for future research to explore SSCM using a large sample size, preferably a large-scale survey, to validate and test the existing findings of this study.

Second, semi-structured interviews are used as a primary data collection tool in this study. The use of interviews raises the issue of a social desirability bias in managerial responses; for example, managers may have offered a positive view about the adoption of SSCM in their company. Social desirability bias refers to the propensity of research participants to share their perceptions and perspectives in a way that is viewed positively by researchers (Crowne & Marlowe, 1960). In this study an effort has been made to control for this element by adopting a data triangulation technique. Social

desirability bias can be further reduced in future studies by employing more rigorous and multiple data-collection techniques, such as focus-group interviews, the Delphi method or interviews with stakeholders who can provide more information and varied perspectives regarding the current state of SSCM adoption.

Third, this study has examined the implementation of SSCM in exemplary New Zealand-based companies (or industry leaders) only; thus findings of the study may not be representative of companies generally. Since the majority of interviewed companies are large companies, the findings offer little insight into small- and medium-sized enterprises (SME), which may possibly have different attitudes towards the implementation of SSCM.

Fourth, the study involves data collection limitations; for example, the semi-structured interviews were conducted mainly with senior managers of focal companies. Stakeholders – suppliers, customers, key informants or experts and NGOs – were not interviewed for this study due to time and resource constraints; this may influence the quality of the findings. Future research may choose to explore SSCM from a multi-actor viewpoint to strengthen the development of SSCM theory and practice. Furthermore, the present study is limited to buyer–supplier relationships at the first-tier level, while a multi-tier analysis of the supply chain network is a valuable step also towards advancing SSCM knowledge.

Fifth, while every attempt has been made to maintain quality and research rigour in this study, the data analysis has been completed by a single researcher, which raises concerns of research bias. Coding and theme development was carried out entirely by

the researcher. An effort has been made to create a case-study database to enhance research reliability, but the issue of single research bias may not be totally eliminated from research findings.

Last, the findings offer little in-depth insight into industry-specific differences in SSCM implementation. Therefore it is desirable to explore SSCM implementation in specific sectors to gain a more detailed understanding of industry-specific contingencies that influence the adoption of SSCM. Furthermore, the current findings may be analytically generalized to the New Zealand business context but are not representative of the general population. Future studies need to explore SSCM in other geographical regions and countries.

8.6 Suggestions for Future Research

Despite these limitations, this study has improved the understanding of SSCM implementation in New Zealand. Based on the foundation provided by this study, a number of avenues may be probed in future research work. Some of the more interesting areas for further research are as follows:

The key elements of the integrative SSCM framework of this study need to be empirically verified and tested by conducting a large-scale survey in New Zealand and other geographical regions. SSCM theory testing is critical to understand to what degree the findings of the current study can be generalized to a larger population.

In this study, SSCM adoption is explored with reference to sustainability leaders (or exemplar companies); typical companies are not included in the sample as such. Future studies may therefore decide to explore SSCM adoption from a general perspective

rather than by exemplary companies. This would be helpful to get an overall picture of SSCM implementation in New Zealand and other countries.

Moreover, the current study has examined SSCM issues mainly from the buyer's standpoint. The investigation of SSCM issues is equally important from the supplier's perspective because suppliers have a significant role in global production and sustainability. Thus, there is an opportunity for future research to study suppliers' SSCM implementation issues both in developed and developing nations.

Other valuable areas for future research would be to empirically examine the efficacy (positive influence) of voluntary SSCG mechanisms from both suppliers' and buyers' viewpoints in terms of achieving SSCM goals. First, business competition is on the rise and buyers demand cheap products, services and/or materials from suppliers. Thus, suppliers need to provide products at the lowest possible cost while simultaneously complying with the regulatory and voluntary requirements forced on them by governments and powerful buyers respectively. Since existing market competition and the provision of low-cost products put enormous pressure on suppliers, which further shrinks their profit margin, it is important to understand to what extent voluntary SSCG mechanisms such as suppliers' codes or standards are followed by suppliers, how voluntary SSCG mechanisms contribute to improving social and environmental conditions in suppliers' factories and to what degree voluntary SSCG mechanisms are aligned to the local culture and value systems in which they are applied. Second, the effectiveness of voluntary SSCG mechanisms is also important to buyers. For example, for buyers to manage their sustainability risk and reputational damage, voluntary SSCG

mechanisms should be reliable in terms of ensuring that their suppliers comply with supply chain sustainability standards in their operations.

Next, the present study does not provide a profound picture as to what extent the conditions of workers and human rights issues are resolved using voluntary supply chain standards in the suppliers' factories. Future research should explore this issue in multiple contexts, geographical settings and sectors to gain a clearer picture of the current situation.

In this study, it is reported that there is no ideal way or unified system by which focal companies can integrate SSCM in their operations. The proliferation of standards and certification schemes has created additional confusion rather than benefiting consumers in making informed decisions. Thus, future research may explore how various actors, such as international NGOs, third-party certifying bodies, the corporate sector, employee unions, industry associations and civil society organizations can jointly create uniformity in private regulations and encourage their adoption in the corporate sector.

Consumers may be instrumental in driving companies to adopt SSCM. However, empirical research on consumers' perceptions of the SSCM perspective is lacking. Thus, it would be interesting to explore SSCM from the consumer's perspective.

Given the exploratory nature of the current study, industry-specific, in-depth research is highly recommended for future investigation. The present study briefly touches on sector differences; however, a detailed, in-depth examination of SSCM in specific industry sectors would enhance understanding regarding industry-specific motivators,

barriers and implementation challenges such as the use of governance systems and SSCM practices.

This study provides only initial insight contingencies that impact SSCM using the New Zealand business context. Future research may explore other context-dependent factors that influence the implementation of SSCM in other geographical contexts or countries.

8.7 Researcher's Reflections

My initial interest in the field of sustainability or CSR was developed when I enrolled at the University of Adelaide in the master's programme in 2007. Business school courses, such as corporate governance (deliberating on famous corporate scandals like Enron and HHH) and business sustainability were instrumental in changing my attitude towards the relationship between business and society. These courses made me realize that the responsibility of business is to be more inclusive rather than maximizing profits only. Hence, when I enrolled in the PhD pathway programme I decided to opt for 'corporate sustainability' as a special topic. During my preliminary research work I realized that scholars have explored many areas of sustainability but very few have actually targeted supply chain sustainability. It was clear to me at that time that many companies were targeted by the public and media, not because of internal sustainability issues but rather that in most cases companies are boycotted, held responsible or criticized because of their lack of responsibility in their supply chain operations. I was keen to understand more about how companies can improve their SSCM performance, and this is one of the reasons I selected the present topic for my research.

With regards to my actual study, initially I planned to collect data from 10 companies. Later I realized that data collection from 10 companies would not be enough given the exploratory focus of the study. Data collection turned out to be a tedious process due to difficulties associated with recruitment and getting hold of participants given their busy work schedule. I recall that in one case it took me five months to interview a manager because he was very busy. The interview was cancelled several times when the manager had overseas work commitments. I found one of the most helpful ways to recruit participants for my study was to become involved in the sustainability 60 award ceremonies, which provided me with an opportunity to meet, interact and develop personal relationships with many sustainability managers. After a long and tedious process, I managed to conduct a total of 29 interviews from 23 companies.

8.8 Concluding Remarks

This thesis was aimed at understanding why and how companies implement sustainability practices into SCM. In doing so it revealed that in general companies actively promote SSCM with the aim of improving their SSCM performance. However, social and environmental issues are not uniformly addressed by companies, and SSCM adoption is determined by context-dependent factors. Some companies are more focused on social issues than others for whom other environmental aspects are of key significance. Results also indicate that companies are more focused on enhancing intra-organizational SCM performance while inter-organizational SCM needs further attention.

The current study has increased the understanding of SSCM implementation in the corporate sector. In particular, the study has extended an existing knowledge with

regards to motivators and barriers to SSCM adoption. The study has also expanded the understanding of voluntary SSCG mechanisms and their implementation in a SCM context. Next, the study has provided useful insights into the current state of implementation of GSCM in New Zealand, thus extending the current literature, which has mostly examined SSCM from companies' internal perspectives rather than the integrative internal and external perspective of environmental sustainability. Finally, one of the key contributions of this study is an integrative SSCM framework that brings together all these findings into a single platform and shows how these issues are linked to each other and able to be understood holistically.

Notes:

- 1- “A firm is said to have a competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitor” (Barney, 1991, p.102).
- 2- The sustainable business council (SBC), which is formally known as the New Zealand business council for sustainable development (NZBCSD), is an industry body that catalyzes the New Zealand business community to have a leading role in creating a sustainable future for business, society and the environment”. It focuses on building business leadership, best sustainability practices, international connectedness and partnership, mainstreaming sustainable business practice in New Zealand and policy development.
- 3- The sustainable business network (SBN) advises and supports small and medium sized enterprises (SMEs) to achieve sustainability.
- 4- The term compensation management refers to the management of various forms of financial assistance, benefits, incentives, and earnings an employee receive as a part of g employment relationship with the organization (Bhattcharya & Sengupta, 2009).

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Appendix 1 – Interview Guide



Title: Embedding Sustainability into Supply Chain Management: A New Zealand Perspective

INTERVIEW GUIDE

(Sample Questions)

Section1: General Questions

1. How do you describe sustainability in the context of your business?
2. How do you manage supply chain sustainability in your company?

Section 3: Identification of Motivators and Barriers to SSCM Implementation

3. What are the primary reasons which have lead your company to implement sustainable supply chain management practices?
4. What do you consider the most important barriers for sustainable supply chain management implementation in your company?

Section 2: Sustainable Supply Chain Governance

5. How does your company select suppliers?
6. How do you engage with your suppliers?
7. Do you monitor facilities of your suppliers? If yes, how frequent are these on-site monitoring visits?
8. What rewards and incentives are being offered to a supplier who meets or exceeds company expectations concerning sustainability performance?

Section 4: Internal-External Strategic Integration

9. Does your sustainable supply chain management strategy cover the whole company? Which function(s)/department(s) are responsible for the management of this strategy?
10. How do you collaborate with your external and internal supply chain partners?

Section 5: SSCM and Competitive Advantage Link

11. What is your perception about the role of sustainable supply chain management practices in attaining a sustained competitive advantage in the marketplace?

Appendix 2 – Ethics Approval Letter



MASSEY UNIVERSITY
ALBANY

7 August 2012

Aymen Sajjad
c/- Dr G Eweje
College of Business
Massey University
Albany

Dear Aymen

HUMAN ETHICS APPROVAL APPLICATION – MUHECN 12/045
Embedding Sustainability Into Supply Chain Management: A New Zealand Perspective

Thank you for your application. It has been fully considered, and approved by the Massey University Human Ethics Committee: Northern.

Approval is for three years. If this project has not been completed within three years from the date of this letter, a reapproval must be requested.

If the nature, content, location, procedures or personnel of your approved application change, please advise the Secretary of the Committee.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'D Gardner'.

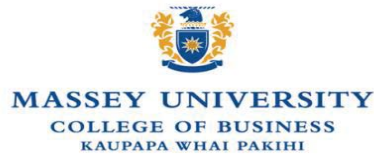
Dr Dianne Gardner
Acting Chair
Human Ethics Committee: Northern

cc: Dr G Eweje
College of Business

Te Kūnenga
ki Pūrehuroa

Research Ethics Office
Private Bag 102 904, Auckland, 0745, New Zealand Telephone +64 9 414 0800 ex 9539 humanethicsnorth@massey.ac.nz

Appendix 3 – Information Sheet



Doctoral Research Project

Embedding Sustainability into Supply Chain Management: A New Zealand Perspective

INFORMATION SHEET

This letter is an invitation to participate in a doctoral research study. As a full time Ph.D. student in the School of Management, College of Business, Massey University, I am currently conducting research under the supervision of Dr. Gabriel Eweje and Dr. David Tappin on New Zealand perspectives of embedding sustainability into supply chain management. For this study, *sustainability is defined as ‘an assimilation of economic, social, and environmental dimensions of sustainable development into business concepts’.*

The primary focus of this research is to understand how and why New Zealand companies are incorporating sustainability into their supply chain management practices. Your participation will contribute to an improved understanding of how and why New Zealand companies are addressing this issue.

If you decide to participate in this research and agree to be interviewed, interview/s will be conducted at a time most suitable to you and in a place of your choice and convenience. The interview will take between 60–90 minutes. Because of the volume of information to transcribe I would like to record the interview with your consent, nevertheless, you do not have to state your name on the tape recording.

No information whatsoever in regards to your personal details will be revealed to any individual or entity without your permission. Once the interview is transcribed you will receive a copy of the transcript so that you can read or make necessary changes. The transcript will be kept confidential without mentioning your name, and after completion of project it will be disposed of by the researcher and the supervisors.

The information collected during the interview will be used for research purpose only. Your personal details as well as the company's name that would identify you or your company will not be mentioned in the outcomes of the research including the thesis, research publications and reports.

I highly appreciate your participation. However, your participation in this research is absolutely voluntary and you are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- decline to answer any particular question;
- withdraw from the interview at any time; and can withdraw from the study at any time within four weeks of the interview;
- ask any question about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to the researcher;
- be given the summary of project findings when it is concluded;
- ask for the recorder to be turned off at anytime during the interview.

This project has been reviewed and approved by the Massey University Human Ethics Committee: Northern, Application No. 12/045R. If you have any concerns about the conduct of this research, please contact Dr Dianne Gardner, Chair, Massey University Human Ethics Committee: Northern, telephone 09 414 0800 x 41225, email humanethicsnorth@massey.ac.nz.

Should you have any questions about the project, please do not hesitate to contact me, Aymen Sajjad or my supervisors, Dr. Gabriel Eweje and Dr. David Tappin.

Warm Regards,

Aymen Sajjad

Contacts:	Mr. Aymen Sajjad	A.sajjad@massey.ac.nz	+64 9 414 0800	Ext: 9242
	Dr. Gabriel Eweje	G.Eweje@massey.ac.nz	+64 9 4140800	Ext: 9291
	Dr. David Tappin	D.C.Tappin@massey.ac.nz	+64 9 4140800	Ext: 9536

School of Management

Private Bag 102904, North Shore, Auckland 0745, New Zealand T +64 9 4418115 F +64 9 4418109

<http://management.massey.ac.nz>

Appendix 4 – Invitation Letter

INVITATION LETTER

Dear,

My name is Aymen Sajjad and I am a full time PhD student in the School of Management at Massey University. I am conducting research on New Zealand perspectives of embedding sustainability (an assimilation of economic, social, and environmental dimensions of sustainable development into business concepts) into supply chain management.

I am currently identifying suitable businesses to participate in the research and would like to invite you to take part in this study. Your participation will contribute to an improved understanding of how and why New Zealand companies are addressing this issue. In-person interviews will be the main source of data collection in this research.

Your participation would be greatly appreciated. However, you are under no obligation to accept this invitation. If you agree to take part I will provide you with additional relevant information including a letter of authorization from the Massey University Human Ethics Committee.

The interviews would last about 60–90 minutes and would be arranged at the time most convenient to your schedule. Because of the volume of information to transcribe I would like to record the interview with your consent, nevertheless, you do not have to state your name on the tape recording. I can also guarantee full anonymity for the participants that take part in this research.

This project has been reviewed and approved by the Massey University Human Ethics Committee: Northern, Application No. 12/045R. If you have any concerns about the conduct of this research, please contact Dr Dianne Gardner, Chair, Massey University Human Ethics Committee: Northern, telephone 09 414 0800 x 41225, email humanethicsnorth@massey.ac.nz.

If you have any questions regarding this study, or would like additional information about participation, please contact either myself or my supervisors at:

Aymen Sajjad

Mob: 021-02472741
9536

Email A.sajjad@massey.ac.nz

D.C.Tappin@massey.ac.nz

Dr. Gabriel Eweje

Phone (off): 4140800 Ext: 9291

Email: G.Eweje@massey.ac.nz

Dr. David Tappin

Phone (off): 4140800 Ext:

Email:

Thank you very much in advance for your interest, assistance and cooperation with this research.

Yours very truly,

Aymen Sajjad

School of Management

Private Bag 102904, North Shore, Auckland 0745, New Zealand T +64 9 4418115 F +64 9 4418109

<http://management.massey.ac.nz>

Appendix 5 –Consent Form



MASSEY UNIVERSITY
COLLEGE OF BUSINESS
KAUPAPA WHAI PAKIHI

Doctoral Research Project

**Embedding Sustainability into Supply Chain Management: A New Zealand
Perspective**

Researcher: Aymen Sajjad

PARTICIPANT CONSENT FORM – INDIVIDUAL

I have read the Information Sheet and have had the details of the study explained to me.
My questions have been answered to my satisfaction, and I understand that I may ask
further questions at any time.

I agree/do not agree to the interview being sound recorded.

I wish/do not wish to have my recordings returned to me.

I wish/do not wish to have data placed in an official archive.

I agree to participate in this study under the conditions set out in the Information Sheet.

Signature:

Date:

.....

**Full Name -
printed**

.....

Appendix 6 – Sustainable Supply Chain Governance Criteria

No	Company	Ethical Sourcing Policy	Suppliers' Code of Conduct	Codes Origin	Information Sharing on Sustainability During RFP/RFI/RFQ Stage or Prequalification of Suppliers	SOCIO/ENVIRO Clause in Contracts	Supplier Selection Criteria	KPIs for Suppliers Performance Measurement	Audit for Ethical Compliance	Audit/Monitoring Criteria	Remediation/Engagement or Partnership with SC Partners	Rewards /Awards to suppliers	SSCM Public Reporting
1	A	✓	✓	Sustainable Business Council (SBC) guidelines for sustainable procurement	✓	✓	Varied and depends on procurement of service or product	Cost, quality, service, delivery and minimum social/environmental requirement as per RFP	✓	Maximum spend and risk type	✓	No	✓
2	B	✓	✓	Self-developed	✓	✓	Meeting minimum requirements set in SQ*	Commercial and meeting minimum KPIs (social/environmental) agreed at the time of contract.	✓	Preliminary screening as per SQ* at the time of contract. If issue arise then the company remediate from case to case basis rather than a regular audit structure.	✓	No	No
3	C	✓	✓	Self-developed	✓	✓	Third party certifications (environmental, social or food safety and quality related), TBL	Commercial and up-to-date certification	✓	Annual certification renewal and commercial	✓	No	✓
4	D	✓	✓	OECD guidelines for MNEs, The Universal declaration of human rights & the UN guiding principles on business and human rights	✓	✓	Third party certifications and compliance to the company's supplier sustainability principles. E.g. Fairtrade	Commercial and meeting minimum KPIs (social/environmental) agreed at the time of contract by the use of OCF*	✓	Commercial and technical specifications. Supplier self-assessment tool provided in advance before audit.	✓	No	
5	E	✓	✓	OECD guidelines for MNCs, UN Global Compact as well as in collaboration with	✓	✓	Third party certifications (e.g., OHSAS 18001) and compliance to the company's supplier	Commercial and meeting minimum KPIs (social/environmental) agreed at the	✓	Compliance to contract terms and third party reviews/verification for risk of non-	✓	No	✓

Appendices

No	Company	Ethical Sourcing Policy	Suppliers' Code of Conduct	Codes Origin	Information Sharing on Sustainability During RFP/RFI/RFQ Stage or Prequalification of Suppliers	SOCIO/ENVIRO Clause in Contracts	Supplier Selection Criteria	KPIs for Suppliers Performance Measurement	Audit for Ethical Compliance	Audit/Monitoring Criteria	Remediation/Engagement or Partnership with SC Partners	Rewards /Awards to suppliers	SSCM Public Reporting
				company's internal and external stakeholders			code of conduct. Category Management approach	time of contract used of OCMF* using ISO 26000 standard.		compliance. Supplier self-assessment tool provided in advance before audit. Audit types- in-house and desktop audits based on supplier spend and risk.			
6	F	✓	✓	Self-developed	✓	✓	Commercial, health, safety, security and environment	Compliance to contract terms and conditions regarding commercial, health, safety, security and environment described in the contract. BRC, Green Palm etc	✓	Health, safety, security and environment	✓	✓	✓
7	G	✓	✓	Self-developed	✓	✓	Third party labour standards reports, commercial, social and environmental (TBL)	Commercial (ability, delivery, dollar value, returns, quality), ethical performance and innovation.	✓	TBL, maximum spend and new ones (inadequate information presented at the time of prequalification stage)	✓	✓	✓
8	H	✓	No	N/A	✓	✓	Commercial and environmental criteria	Commercial and environmental targets set in the contract	✓ (informal)	Compliance to OHS standard and environmental targets as set in the contract	✓	No	No
9	I	✓	No	Encouraging suppliers to SEDEX compliance requirements	✓	✓	Commercial/economic, legal compliance, OHS compliance	Commercial and up-to-date certification e.g., British Retail Consortium (BRC) global standards, Safe Quality Food (SQF) Program, Roundtable on Sustainable Palm	No	Compliance to contract terms and conditions, specifically quality and food safety related.	No	No	✓ (only for Palm oil sourced from RSPO certified or GreenPalm certified)

Appendices

No	Company	Ethical Sourcing Policy	Suppliers' Code of Conduct	Codes Origin	Information Sharing on Sustainability During RFP/RFT/RFQ Stage or Prequalification of Suppliers	SOCIO/ENVIRO Clause in Contracts	Supplier Selection Criteria	KPIs for Suppliers Performance Measurement	Audit for Ethical Compliance	Audit/Monitoring Criteria	Remediation/Engagement or Partnership with SC Partners	Rewards /Awards to suppliers	SSCM Public Reporting
								Oil (RSPO) Certified and encouraging suppliers to become compliant to SEDEX requirements.					
10	J	✓	✓	Self-developed OHS codes for suppliers	✓	✓	Varied and depends on procurement of service or product type	Commercial sustainability i.e. Cost, quality, service, ability, legal, on time delivery & strict compliance to OHS codes	✓	OHS related audit	✓	No	No
11	K	✓	No	N/A	✓	✓	Varied and depends on procurement of service or product type	Commercial (ability, delivery, dollar value, returns, quality) and environmental (ad-hoc- product or service specific e.g., waste management)	No	Compliance to contract terms and conditions (mostly commercial), customer feedback	✓	No	No
12	L	✓	No	N/A	✓	✓	Varied and depends on procurement of service or product. Sustainability section in RFT (5% weighing).	Commercial sustainability and minimum sustainability requirements as per terms of contract	✓	OHS and environmental audits	Informal/ad-hoc	No	No
13	M	✓	✓	Self-developed in consultation with a wide range of stakeholder groups	✓	✓	Commercial, certifications, compliance to human rights and animal welfare and environmental compliance	Commercial, protection of human rights and environmental stewardship and animal welfare on farms	✓	Compliance to company's code of conduct and certifications	Engagement oriented approach (cooperation and coordination with SC partners)	✓	✓
14	N	✓	✓	SBC guidelines for sustainable procurement	✓	✓	Commercial/economic in general but for large suppliers, terms of contracts including	Commercial sustainability and minimum sustainability requirements as per	✓	Risk based	Informal/ad-hoc	No	No

Appendices

No	Company	Ethical Sourcing Policy	Suppliers' Code of Conduct	Codes Origin	Information Sharing on Sustainability During RFP/RFI/RFQ Stage or Prequalification of Suppliers	SOCIO/ENVIRO Clause in Contracts	Supplier Selection Criteria	KPIs for Suppliers Performance Measurement	Audit for Ethical Compliance	Audit/Monitoring Criteria	Remediation/Engagement or Partnership with SC Partners	Rewards /Awards to suppliers	SSCM Public Reporting
							sustainability requirements	terms of contract					
15	O	No	No	N/A	N/A	No	Commercial/economic and environmental criteria (ad-hoc basis)	Traditional (financial & commercial)	No	N/A	N/A	No	No
16	P	No	No	N/A	N/A	No	Commercial/economic and environmental criteria (ad-hoc basis)	Traditional (financial & commercial)	No	N/A	N/A	No	No
17	Q	No	No	N/A	N/A	No	Commercial/economic	Traditional (financial & commercial)	No	N/A	N/A	No	No
18	R	No	No	N/A	N/A	No	Commercial/economic and environmental criteria (ad-hoc basis)	Traditional (financial & commercial)	No	No	Informal/ad-hoc	No	No
19	S	✓	No	N/A	N/A	✓	Commercial and environmental (certifications)	Traditional (financial & commercial)	No	Environmental profiles reviews and supplier check list at the time of contract renewals	Informal but environmental improvement related	No	No
20	T	✓	✓	The United Nations Universal Declaration of Human rights, The conventions of the ILO, and The United Nations Conventions on the Rights of the Child. -Codes are developed in consultation with employees, suppliers, investors and NGOs.	✓	✓	Compliance to codes of conduct or a similar purchasing standard/certification e.g., Electronic Industry Code of Conduct (EICC), ETI base code, SAI's (SA 8000) or Chartered Institute of Purchasing and Supply Ethical Business Practices in Purchasing and Supply.	Commercial, compliance to codes of conduct, public reporting of their sustainability performance, up-to-date certifications (SA 8000, EMAS standard, ISO 14001, OHSAS 18001), evidence to manage and prevent bribery and corruption, and innovation	✓	Large suppliers (maximum spend and risk type. Compliance to contract terms and third party reviews/verification for risk of non-compliance). Suppliers are encouraged to audit their 1 st and 2 nd tier of suppliers for minimum sustainability requirements. On-site visit by third	✓	✓	✓

Appendices

No	Company	Ethical Sourcing Policy	Suppliers' Code of Conduct	Codes Origin	Information Sharing on Sustainability During RFP/RFI/RFQ Stage or Prequalification of Suppliers	SOCIO/ENVIRO Clause in Contracts	Supplier Selection Criteria	KPIs for Suppliers Performance Measurement	Audit for Ethical Compliance	Audit/Monitoring Criteria	Remediation/Engagement or Partnership with SC Partners	Rewards /Awards to suppliers	SSCM Public Reporting
21	U	✓	✓	The UN Global Compact, ILO standards, Community involvement, marketplace (suppliers), NGOs, Human rights and equal opportunity commission, and Consumers' associations	✓	✓	Compliance to the company's supplier codes of conduct	Commercial and meeting minimum KPIs (social/environmental) agreed at the time of contract. SAP* for suppliers which lagged in meeting companies compliance requirement	✓	party independent audit firm for non-compliance or high risk suppliers Maximum spend and risk type. Compliance to contract terms and third party reviews/verification for risk of non-compliance. Supplier self-assessment questionnaire (only for risky ones) as identified during auditing.	✓	No	✓
22	V	✓	✓	UNGC, NZ packaging accord, NZ fair t g act	✓	✓	-Financial & environment criteria. -Certifications	Contractual terms	No	N/A	✓	No	No
23	W	No	No	N/A	N/A	N/A	Certifications (e.g., Bio-grow, global gap, organic certified)	Contractual terms and auditing for certifications	✓	Certification and food safety	No	No	No

- *OCF- Outsourcing Control Framework
- *OCMF – Operational Contact Management Framework
- *SAP – Sustainability Action Plan
- *SQ – supplier questionnaire

