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From Principles to Practice: Sustainable Supply Chain Management in SMEs

by

ALISON LOUISE ASHBY

A thesis submitted to Plymouth University in fulfilment for the degree of

DOCTOR OF PHILOSOPHY

Plymouth Business School

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Abstract

Principles into Practice: Sustainable Supply Chain Management in SMEs by Alison Louise Ashby

Sustainable Supply Chain Management (SSCM) is an evolving discipline, and incorporates the environmental and social performance dimensions of sustainability with the traditional measure of economic performance; current SSCM research indicates a skew towards economic performance and its interaction with environmental performance, while social performance is underrepresented (Pagell and Wu, 2009, Schaefer, 2004, Sharma and Ruud, 2003). The UK clothing industry represents a relevant research focus due to its supply chain complexity, and scale and scope of its environmental and social impacts; this thesis further recognises the tendency for academic research to focus on Large Enterprises (LE) (Curran and Blackburn, 2001) and investigates how SSCM is implemented in UK SME clothing supply chains to understand how and why they address economic, environmental and social performance and the potential contribution to developing the SSCM concept.

An inductive case study methodology is employed and the research focuses on 4 UK clothing SMEs with primary data collection a series of semi-structured interviews, supported by observation, company documentation and archival data. Three theoretical lenses are applied and the findings indicate that SMEs manage their supply chains for sustainability in ways that strongly align with their specific characteristics and apply a greater emphasis on long-term, trust-based and mutually beneficial supplier relationships. A rich view of SSCM practice in SMEs is developed, which reflects the more intangible and human components of sustainability and supply chain relationships, and how these can be harnessed to achieve firm specific commitments.

This thesis fulfils an identified need to study how sustainability is addressed in SME supply chains within a single industry; SSCM research to date has focused on large organisations and multiple industry perspectives. It contributes to knowledge in both the SSCM and SME research fields by identifying key gaps within the combined literature, critiquing sustainability models and developing a conceptual framework from the findings, which aims to embed social performance and offer a more integrated approach to SSCM in this context.

Key words: Sustainable Supply Chain Management (SSCM), sustainability, SMEs, clothing industry
Acknowledgments

Having worked in the UK clothing and textile industry for over 18 years I have had the opportunity to view first hand the growing need and importance of addressing environmental and social performance in highly complex global supply chains. My passionate interest in how these many issues and practices can be coordinated to achieve full supply chain responsibility and a balanced, integrated approach to sustainability led me to successfully apply for a PhD scholarship for sustainability focused research at Plymouth University.

I would like to extend my sincere thanks to all members of my supervisory team for providing support, guidance and encouragement during the time it has taken to complete this thesis. A special mention goes to Mel Hudson Smith who helped to keep me sane and optimistic throughout!

Finally a massive thank you to my husband Simon without whose love, patience and support I would not have had the confidence or strength to see the PhD through to the end.
Author’s Declaration

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award without prior agreement of the Graduate Committee.

Work submitted for this research degree at Plymouth University has not formed part of any other degree either at Plymouth University or at another establishment.

Relevant seminars and conferences were regularly attended throughout the period of study, at which papers were presented and included in the proceedings. Two papers were published in relevant sustainability and supply chain management journals as well as an industry-relevant book chapter, as detailed below.

Publications


Conferences Attended


Self-Leadership for Sustainability: Combining Personal, Professional and Sustainable Development Workshop, Plymouth University, June 2012


14
Paper presented at 8th International Conference on Environmental, Cultural, Economic and Social Sustainability, Vancouver, January 2012

HEFCE and EPSRC funded ‘Learning and Leading on Sustainability: the Green Skills Agenda’, Loughborough University, May 2012

Paper presented at 88th Textile Institute World Conference, Malaysia, May 2012

Poster presentation at the SSCM Workshop, Cardiff Business School, June 2012

Paper presented at POMS 24th Annual Conference, Denver, May 2013

**External Engagement**

I have reviewed journal papers for SCMJ, Journal of Cleaner Production, IJPE and IJPDL.

Membership of the Textile Institute Sustainability Special Interest Group

Membership of the SSCM Interest Group

Membership of the Ethical Fashion Forum

Membership of Plymouth University’s Institute for Sustainability Solutions Research (ISSR)

**Word count**

The main body of the thesis has a word count of 87,254

Signed …………………………………………………………………………………

Date …………………………………………………………………………………
Chapter 1: Introduction

‘To be truly sustainable a supply chain would at worst do no net harm to natural or social systems, while still producing a profit over an extended period of time; a truly sustainable supply chain could, customers willing, continue to do business forever’.

(Pagell and Wu, 2009, p.38)

Sustainability is a rapidly growing area of research and interest in business, academia and society. It is defined and interpreted in a wide range of different ways and contexts, but central themes of the concept include a recognition of the limits of natural resources (Faber et al., 2005), the meeting of society’s needs not wants (Parris, 2003), and a responsibility to future generations (WCED, 1987). Pagell and Wu’s above quotation captures key aspects of sustainability when applied in the operational context; sustainability as longevity, in terms of a firm’s continuance into the long-term (Springett, 2003), and the recognition of the environmental and social impacts and responsibilities of organisations within their supply chains, alongside the traditional organisational imperative to grow and be profitable (Strong, 1997).

The concept of sustainability and how it is defined has important implications for Supply Chain Management (SCM) research; the development of SCM represents an evolutionary step beyond logistics (Samaranayake, 2005) by integrating the management of co-operations with that of material and information flows (Handfield and Nichols, 1999). A prime driver for the development of SCM has been economic sustainability, based on the premise that an integrated and efficient supply chain helps to minimise monetary risks and increase profits (Fawcett et al., 2008), but the growing recognition and importance of sustainability has led to it becoming an additional driver for SCM, to include environmental and social responsibilities (Svensson, 2007).

Sustainable Supply Chain Management (SSCM) is SCM that explicitly incorporates the 3 sustainability dimensions of the Triple Bottom Line (3BL) (Elkington, 1994), namely economic, environmental and social performance. It is growing in recognition and importance, evidenced
by an increasing number of academic journal articles, special issues and conference streams
dedicated to this developing discipline. Given the highly complex nature of today’s global
supply chains, the scale and scope of their impacts, and different stakeholder expectations,
focal organisations are increasingly considered responsible for the environmental and social
performance of their suppliers (Walker and Jones, 2012). The focal organisation is the one
which initiates the business transaction, and conceives and designs the products/services
intended for consumption (Cavusgil et al., 2008); it frequently owns or governs the supply
chain and its interactions due to its proximity to the end customer and/or its organisational
scale and power in comparison to the other actors (Seuring, 2004, Leppelt et al., 2013).

As most organisations are part of at least one supply chain (Samaranayake, 2005) in today’s
global market competition is increasingly based on ‘supply chain vs. supply chain’ (Gold et al.,
2009, Soler et al., 2010). Consequently environmental and ethical responsibility needs to apply
along the full extent of a firm’s supply chain into all aspects of its performance, namely its
products, processes, interactions and relationships. Globalisation and recent economic trends
have created highly complex supply chains (Varma et al., 2006), and there has been a tangible
shift to firms focusing on their core competences and outsourcing non-core activities to their
suppliers (Darnall et al., 2008). As a result this creates challenges for implementing and
coordinating environmentally and socially responsible supply chain practices.

There is academic recognition that firms have made progress within the environmental
performance dimension of SSCM (Krause et al., 2009, Sarkis et al., 2010a), but while a wide
range of environmentally responsible operational practices exist there is a tendency for firms
to focus on ‘easy to green’ processes rather than fully coordinated supply chains, and the role
of supplier relationships as a means to achieve this coordination has been significantly
underexplored (Soni and Kodali, 2011, Burgess et al., 2006, Ashby et al., 2012). In addition,
significant development in societal issues is currently considered lacking (Krause et al., 2009)
and sustainability research to date has generally overlooked the social component (Pagell and
The academic literature indicates a current research bias towards Large Enterprises (LEs), and Multi National Corporations (MNCs), yet SMEs account for over 95% of private sector firms in most industrialised economies and in the UK specifically represent over 99% of business (Curran and Blackburn, 2001). Most sustainability research has limited explicit discussion of SMEs (Kusyk and Lozano, 2007, Friedman and Miles, 2002) and individual case studies or multi-industry studies have dominated in SSCM research to date (Winter and Knemeyer, 2013); this thesis will aim to address this gap by applying a multiple case study approach to take a deeper dive into a single industry (Carter and Easton, 2011), namely the UK clothing industry, with a specific focus on SME supply chains and SSCM.

The trend for outsourcing key supply chain stages is especially evident within the UK clothing industry, where cost pressures and competition have effectively forced focal firms to focus on customer-facing and design activities (Allwood et al., 2006), with production processes and manufacture undertaken by global suppliers, primarily in developing countries (Fletcher, 2008). The design, organisation, interactions, competences, capabilities and management of supply chains have consequently become key issues in today’s competitive market (Gold et al., 2009); managing the supply chain for clothing suppliers and retailers needs to be a synchronized process (Bruce et al., 2004), and as well as taking responsibility for environmental and social performance, the ability to influence and control activities in the chain is becoming a critical competence (Kogg, 2003).

The aim of this research is to examine and investigate how and why SMEs address environmental and social performance in their supply chains, and understand how this can contribute to current SSCM research. There is a recognised emphasis on economic performance and an underrepresentation of social performance in SSCM practice, which creates an imbalance in the current framing of sustainability as 3 interrelated dimensions, and the role of supply chain relationships and how they facilitate sustainability implementation has been underexplored. This supports a recognised lack of impact of research on operational practice (Ghoshal, 2005), and the difficulties in addressing the more ‘human’ elements of
sustainability within supply chains; this gap will be explicitly addressed through the research questions.

**Research Questions**

This thesis proposes a number of research questions and sub questions, which relate to gaining insight into and understanding of SSCM within the specific context of SMEs. Chapter 2 introduces initial research aims and objectives, which were developed to provide a framework for a series of literature reviews, while Chapter 8 details the more specific and focused research questions and sub-questions. These evolved from the literature reviews and the initial findings of the mini case studies, which were conducted in parallel to the reviews; the finalised main research questions are as follows:

- How do SMEs interpret or define sustainability?
- How do SMEs approach the balance of economic, environmental and social performance?
- How do SMEs practice sustainability in their supply chains and how is performance evaluated?
- How do SMEs structure and manage their supply chains? How does this contribute to addressing sustainability?
- How do SMEs approach their supply chain relationships and do these relationships contribute to SSCM?
- How do SME characteristics contribute to sustainable supply chain performance and why?

These finalised research questions are both objective and subjective in nature, and with an emphasis on the ‘how and why’ of SSCM in SMEs; this research intends to answer all of these questions to describe, explain and understand the phenomenon of sustainability within this context. Using an inductive case study methodology and multiple theoretical lenses it aims to more fully understand the current imbalance between economic, environmental and social
performance in supply chains, and gain insight into how specific organisational characteristics and principles associated with SMEs can inform SSCM research.

The findings provide a rich, nuanced and embedded perspective of SSCM within UK clothing SMEs, which emphasises the role of relationships and the more tacit and human components of sustainable supply chain behaviour and practice. Current SSCM models are applied to the findings and critiqued, and a key contribution to knowledge is a conceptual SSCM framework that utilises the multiple theoretical lenses and captures core themes and categories from the research findings.

**Thesis Structure**

Following an overview of the research aims in Chapter 2, the thesis commences with a series of literature reviews. Chapter 3 introduces the sustainability concept and investigates how sustainability is defined and interpreted, outlining frameworks applicable to its operationalisation and identifying key issues with sustainability implementation. This literature informs the review of sustainability and supply chain literature in Chapter 4 which focuses on the application and practice of sustainability in the supply chain context. Supply chain functions and boundaries are identified and the role of relationships in managing the supply chain for sustainability investigated. This introduces the evolving concept of Sustainable Supply chain Management (SSCM), which represents the key focus of this research and discusses how the concept is defined and the performance dimensions of sustainability addressed and integrated in supply chain practice.

Chapter 5 investigates the concept of SSCM and sustainability within the SME context and considers how SME characteristics may enable a potentially more balanced or integrated approach to sustainability within supply chains. Chapter 6 summarises the findings from the series of literature reviews and identifies key gaps and issues; these are then discussed in the context of theoretical lenses that are applicable to SSCM in the SME context to develop the research in appropriate and relevant directions. Chapter 7 focuses on how sustainability and
SSCM is addressed in the industry chosen for the research, namely the UK clothing industry. It outlines key issues and drivers for sustainability in this industry and how it relates specifically to SMEs, and justifies the research purpose and focus based on the literature reviews and identified research gaps.

The research methodology is introduced in Chapter 8 and details the research aims, objectives and questions. The rationale for the chosen philosophical and methodological approach is discussed and justified, and the data collection methods to be utilised specified. The research consists of 2 phases; Phase 1 was conducted parallel to the review of literature, and is represented by a series of mini case studies that build on and investigate the reviewed literature themes. This then informs the primary research, which undertakes in-depth case studies over a 12-month period with 4 clothing SMEs based in the south west of the UK.

Chapter 9 presents and discusses the Phase 1 research findings and summarises the key themes. Chapter 10 provides an overview of the 4 cases chosen for in-depth study and their supply chains, presents the analytical framework that is applied to the primary research data, and the research findings, to include within case and cross case themes and category analysis findings. Chapter 11 discusses the findings, aligning them with the reviewed literature and chosen theoretical lenses, while Chapter 12 introduces the conceptual framework developed from the findings, and discusses the contributions made by the thesis to current and future SSCM research and implications for supply chain practice.

**Research Contribution**

SSCM is a dynamic and developing research field, but is constrained by established operations management constructs and research methodologies that tend to focus on quantifiable, statistical techniques (Meredith et al., 1989). This thesis represents one of a very few research projects that actively aims to fully and explicitly address the social dimension within SCCM, applying an original combination of theoretical lenses to comprehensively explore and address the more intangible and human aspects of sustainable supply chains. It focuses on SSCM in the
SME context, a connection which has not been explicitly explored in this research field, but which offers extensive potential for new and improved understanding. This thesis therefore makes a number of contributions as follows:

**Theoretical Contributions**

- Key gaps in the current SSCM research have been identified and provide a foundation for theory development and testing by researchers in the field. The review progresses SSCM research in new/different directions and enables new perspectives on the social dimension of sustainability.
- The alignment of sustainability and SME literature research, a currently underexplored research field, but one that offers extensive potential for SSCM research. It also highlights a need for cross-disciplinarity to extend the research field.
- The application of multiple theoretical lenses from different disciplines/backgrounds, rather than a single theory. This translates into an original and novel conceptual model for understanding and analysing SSCM, which enables a focus on soft systems and the more intangible and tacit components of the field.
- The key output from the findings is a conceptual model, which builds on existing frameworks, specifically Carter and Rogers’ (2006) SSCM model, and offers potential new understanding and directions for both research and practice.

**Practical Contributions**

- During the course of the research the structured review of sustainability and SCM literature was published in Supply Chain Management: An International Journal (SCMIJ), and so adds to a developing body of SSCM literature.
- The relevance and importance of SMEs as a new field for SSCM research, and the current gaps in the literature have been recognised; it highlights a need for structured SME literature reviews to understand the current status of research in relation to SSCM and sustainability.
• A rich picture of SME sustainability principles and practice within supply chains has been developed, which has managerial and practitioner implications.

• The thesis concludes with both researcher and practitioner recommendations that distil key messages of the research. These could be developed into frameworks for SSCM practice and decision-making.

Conclusion

This introductory chapter has presented and explained the rationale and purpose of the research in relation to the developing field of SSCM and the chosen research context of SMEs within the UK clothing industry. The specific questions the research aims to address have been introduced together with an overview of the structure of the thesis, and finally the contributions the research has made to both theory and practice have been outlined.
Chapter 2: Research Aims and Process

Introduction

This chapter provides an overview of the initial aims and research questions used as a framework to inform the undertaking of the literature reviews, and recognises the need to define sustainability in the operational context as well as understand how it is implemented, and the role of theory in providing concepts and frameworks that inform sustainable supply chain practice. It then outlines the approach that was applied to the series of literature reviews.

Initial Research Aims

In order to enable a structured review of the relevant literature to be undertaken a number of initial research questions and aims were established. This allowed for the initial research fields of sustainability and Sustainable Supply chain Management (SSCM) to be identified and then led to more focused investigation of this literature and the identification of a further body of literature that addressed key research gaps. This enabled the research questions to evolve and become more specific, and a specific focus for the research established, namely SSCM in the SME context.

The initial aim of the research is to examine and understand how sustainability, a dynamic and evolving concept, is defined and interpreted within the operational context, along with the key issues organisations face in addressing sustainability. As organisations increasingly operate highly complex global supply chains (Andersen and Skjoett-Larsen, 2009) a further research aim is to investigate environmental and social supply chain principles and practices and understand how these contribute to sustainability performance. Finally an understanding of how firms can achieve balanced integration of economic, social and environmental performance across complex, multi-tiered supply chains represents another key aim of the research.
<table>
<thead>
<tr>
<th>Research Aims</th>
<th>Initial Research Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition</td>
<td>How is sustainability defined as a concept?</td>
</tr>
<tr>
<td></td>
<td>How is sustainability defined in the operational and supply chain context?</td>
</tr>
<tr>
<td>Practice</td>
<td>How do businesses interpret and address sustainability?</td>
</tr>
<tr>
<td></td>
<td>How is this translated into supply chain practice?</td>
</tr>
<tr>
<td></td>
<td>What practices exist to address social and environmental performance?</td>
</tr>
<tr>
<td>Balance</td>
<td>How do firms prioritise environmental and social performance?</td>
</tr>
<tr>
<td></td>
<td>What are the key trade-offs when addressing sustainability?</td>
</tr>
<tr>
<td></td>
<td>Is a balance of economic, environmental and social performance achievable?</td>
</tr>
<tr>
<td>Theory</td>
<td>What theoretical constructs are applicable to addressing sustainability in supply chains?</td>
</tr>
<tr>
<td></td>
<td>How can theory be developed to enable balanced supply chain practice?</td>
</tr>
<tr>
<td></td>
<td>How can supply chain practice inform SSCM theory?</td>
</tr>
</tbody>
</table>

Table 1: Initial Research Aims and Questions

These aims inform a number of initial research questions, as illustrated in Table 1, and the focus on defining sustainability and understanding how it is operationalised further informed the aim of understanding how sustainability theory and practice interrelate. Through this structure a key objective of the research at this stage was to understand how sustainability and supply chain theory currently informs operational practice, and make a contribution to SSCM theory that could progress supply chain practice. The literature review was, therefore, not focused on a specific theory, but aimed to gain insights into how the concept of sustainability is defined and translated into operational practice, and through this process identify relevant theoretical constructs to direct and evolve the field of SSCM.

The Research Process

Once initial research aims were established the research process was developed and mapped; as illustrated in Figure 1 it was not a purely sequential process as the initial stages of the literature review were undertaken simultaneous to a series of mini case studies, and the results of those case studies informed subsequent literature reviews and the research methodology. The information derived from this process clarified the initial research aims, and provided real life insight (Yin, 2009), which enabled the research area to become progressively more focused and identify specific lines of enquiry as well as potential new conceptualisations of SSCM.
Figure 1: The Research Process

Key:
Research stages enclosed within a dashed line box were conducted in parallel.
The process of research is fundamentally cyclical in nature, but requires clear description and characterisation of the research subject before the phases of explanation and testing can commence (Meredith et al., 1989). The literature reviews served as a mechanism to describe the phenomenon of SSCM within the SME and clothing industry contexts in more detail, while the research phases that were parallel and subsequent to the reviews sought to explain and potentially test key SSCM concepts and constructs.

The mini case studies evolved from an initial research pilot, a recognised mechanism for supporting literature reviews (Yin, 2009); however the first few firms approached for the pilot recommended sufficient willing participants to justify developing a distinct research phase. As well as informing the literature reviews the mini case studies served to explain aspects of SSCM within an industry-specific context and identified SME characteristics that could influence SSCM practice and be developed/tested via the in-depth case studies.

Figure 1 indicates how the description and explanation of the SSCM phenomenon within the SME context through the literature reviews and mini case studies significantly informed the methodology, including the choice of theoretical lenses and sampling criteria for the in-depth case studies. It also suggests the cyclical, interrelated nature of research; the literature informs the research process and research outputs contribute to the literature. An explicit contribution of this thesis was the publication of a structured review of SCM and sustainability literature; this adds to and develops the body of literature in this field, but also provides a foundation for future SSCM research. Given the dynamic nature of the studied field during the course of the research the SSCM literature was revisited to reflect on the findings and ensure it was up to date at the time of submission.

**Approach to the Review of Literature**

To make a conceptual contribution to the extant sustainability literature a systematic review of relevant academic literature from the publication of the Brundtland Report in 1987, which represented the first formal definition of sustainability, was undertaken. As both sustainability
and SSCM are evolving areas of research a structured approach was considered appropriate for the review of the literature with a specific set of search criteria applied to identify the relevant literature for each field (Burgess et al., 2006, Tranfield et al., 2003).

For a systematic literature review it is important to define clear boundaries to delimitate the research (Seuring and Muller, 2008) and establish a protocol for identifying, selecting and reviewing literature relevant to the specific question (Burgess et al., 2006). This form of review typically has the 3 defined stages of Planning, where the research need and question is identified; Conducting which includes the search for relevant literature and its analysis; and Reporting where the findings are formalised and recommendations made (Tranfield et al., 2003).

Structured literature reviews within the Operations Management discipline (Seuring and Muller, 2008, Burgess et al., 2006) illustrate the objective nature of this approach in establishing key themes, and the benefits that can be provided to improve future research (Burgess et al., 2006). As well as reviewing content as in a standard literature review process, this approach investigates the underlying structure of the selected papers to identify differences and similarities in methods used and potential issues that result from each; see Appendix 1 for the structured analysis of the literature reviews. Through this process methodological strengths are tested and key gaps in knowledge identified.

The literature searches were restricted to peer-reviewed publications within the broad definition of business, management and economics applied by the chosen search databases, and recognising the cross-disciplinary nature of the fields. A set of search criteria was applied to identify the most relevant papers and the search was limited to journals produced in English and for quality purposes searches were limited to journals rated from 2 – 4* in the ABS journal rankings (2010). Recognising the interdisciplinary nature of the subject areas, along with the fact that sustainability and SSCM are dynamic evolving concepts, it was deemed important to
include relevant journals that fell outside this scope, to ensure that all the most current and relevant research was included.

The sustainability literature review (Chapter 3) was important for understanding the concept of sustainability and how it applies in the business context. The definitional issues and gaps identified by this broad sustainability review informed the more operational focus of the SSCM research literature review (Chapter 4), and a recognition derived from this process that academic research currently tends to focus on Large Enterprises (LEs) (Curran and Blackburn, 2001) and the findings of the mini case studies informed the subsequent review of SME and sustainability literature (Chapter 5). A review of industry specific literature was then undertaken to align the preceding reviews within the chosen context of global clothing supply chains, with an emphasis on SMEs, and the research methodology was informed by the reviewed literature and identified research gaps.

Conclusion

This chapter has provided more structured detail on the research aims and the initial questions that were initially developed in order to inform the series of literature reviews. It has presented and explained the research process that was undertaken, including how a series of mini case studies were conducted parallel to the first literature review, and how these then informed the subsequent literature reviews and research direction/focus. The process and search criteria applied to the systematic literature reviews are also detailed and justified.
Chapter 3: Review of Sustainability Literature

Introduction

The idea of sustainability was first verbalised by Schumacher in 1972, as ‘permanence’, where ‘nothing makes economic sense unless its continuance for a long time can be projected without running into absurdities’ (Grinde and Khare, 2008, p.129). In 1983 the World Commission on the Environment and Development (WCED) was established and the result of their work was formalised in the 1987 Brundtland Report ‘Our Common Future’. It defined sustainability as ‘development which meets the needs of the present without compromising the ability of future generations to meet their own needs’ (WCED, 1987, p.43), and over 25 years later it remains the most often quoted definition of this concept.

The purpose of this chapter is to systematically review sustainability literature in the organisational context since the publication of the Brundtland Report in 1987. It aims to establish whether there is a universal and actionable definition of sustainability that can contribute to Supply Chain Management (SCM) research. Successful management of suppliers is increasingly crucial in today’s global competitive market and SCM represents a relevant discipline for understanding how to successfully operationalise and achieve sustainability.

Search Criteria

A specific set of search criteria was applied to identify appropriate literature for review (Burgess et al., 2006, Tranfield et al., 2003); as the subject of sustainability is expansive, this ensured that a focus on the definitions and interpretations of sustainable development and sustainability was maintained. The literature sources were restricted to peer-reviewed journals across a range of business and management disciplines and reviewed articles included research papers, surveys, literature reviews and case studies. Table 2 details all the accessed journals and number of articles acquired from each for review, and the key journals that provided the majority of articles were:

- Sustainable Development
To maintain a workable scope searches were restricted to the terms of sustainable development and/or sustainability appearing in the article title and/or keywords. Only journals and publications from 1987, the year when the Brundtland report was published were reviewed. However any relevant pre-1987 publications frequently referenced in the literature were also accessed and reviewed, as well as any key articles that had not been identified in the original search. The search databases used were Science Direct, EBSCO and Emerald Fulltext and as each search was completed the abstracts were reviewed to ensure the relevance of the
results. Through this process and the restricted search criteria a total of 64 relevant articles were identified for review.

**Defining Sustainability**

Sustainable as an adjective was institutionalised by the 1992 Rio Earth Summit conference and is seen as an indication of environmental goodness (Appleton, 2006) and a long-term perspective (Orians, 1990). Sustainable linked with development therefore implies development or growth that can continue indefinitely, but without damaging the environment (Hart, 1997). Sustainability can also be interpreted as longevity and the ability to last (Springett, 2003), but Faber et al. (2005) consider Springett’s idea of endurance and the concept of sustainability as being different.

More than 30% of the reviewed articles directly quoted or referenced the Brundtland definition of sustainability, indicating the extent to which it has become accepted in academic literature. Luke (2005) emphasises the power of language and how it can translate into action and political meaning, but also questions how the broad, rhetorical definitions of sustainability have become so readily embraced. Therefore while it represents the most widely accepted and referenced, the Brundtland definition is not without criticism and can be interpreted in multiple ways.

Table 3 lists the range of concise definitions separately applied to the terms sustainable development and sustainability within the reviewed literature. Some key differences exist between the two sets of definitions; for example sustainable development is framed as an imperative, a philosophy, and a vision, while the phrases of ‘working paradigm’ (Appleton, 2006) and ‘conceptual framework’ (Dempsey, 2009) used to describe sustainability suggest more practical implications. However there is overlap in the dynamic, process-driven views of the concepts, their elusive and complex nature and the question of whether they are even meaningful. This suggests that while the 2 terms have the potential to be distinct from each other, there is currently no clear or accepted consensus on each definition or concept.
Sustainability can be considered as the successful result or outcome of sustainable development (Korhonen, 2004), suggesting the latter is a process or direction. However, Table 3 illustrates that sustainability can equally be interpreted as the process and sustainable development the goal (Jones, 2000, Gladwin et al., 1995). Despite contradictory viewpoints the implication of the multiple definitions is of a purposeful, directional philosophy (Kjaerheim, 2005, Jones, 2000, Gladwin et al., 1995, Hartman et al., 1999), and the majority of authors view them as positive concepts motivated by real concerns (Allwood et al., 2008). They are seen as an opportunity and starting point for something that must be addressed (Inyang, 2009, Nguyen Cam, 2004).

<table>
<thead>
<tr>
<th>Sustainable Development</th>
<th>Sustainability</th>
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<td>Elusive Concept</td>
<td>Result of sustainable development</td>
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<td>Starting Point</td>
<td>Successful Outcome</td>
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<td>Direction</td>
<td>Continuous Process</td>
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<td>Goal</td>
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<td>Process</td>
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<td>Opportunity</td>
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<td>Slogan</td>
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<td>Ethical imperative</td>
<td>Complex</td>
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<td>Guiding Principle</td>
<td>Confusing</td>
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<td>Dangerous Liaison</td>
<td>Working Paradigm</td>
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<td>Social construct</td>
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<td>Inter-generational Equity</td>
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<td>Vision Expression</td>
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<td>Value Change</td>
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<td>Development without destruction</td>
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<td>Article of Faith</td>
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<td>Almost Meaningless</td>
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<td>Unashamedly Anthropocentric</td>
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<tr>
<td>Never Ending Journey</td>
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Table 3: Definitions of Sustainable Development and Sustainability

While the importance of the concepts is acknowledged, there are recognised concerns about the breadth and confusion of interpretations; they are considered too broad and ill-defined (Vermeulen and Seuring, 2009, Parris, 2003, Moon, 2007, Kallio et al., 2007), over-simplified and contradictory (Grinde and Khare, 2008, Banerjee, 2010), as well as being open to abuse.
Werbach, 2009, Moon, 2007). Luke (2005, p. 229) highlights that by 1992, the year of the Rio Earth Summit conference ‘barely workable notions of sustainability had been broadly accepted by governments, NGOs and business’, suggesting that while awareness of the concept had been raised since 1987 little had been actively done on the specifics of achieving sustainability.

This reflects a recognised lack of clarity on how to operationalise the concepts (Vachon and Mao, 2008) and practically align the current and future needs of the Brundtland definition. It is questioned whether the concepts are even attainable within current economic biased frameworks (Hartman et al., 1999) and there is recognition that they can be used to hide business practices in ‘the pleasing green packaging of sustainable development’ (Luke, 2005, p.235). This view is reiterated by Moon (2007) who highlights the danger of sustainability being abused for image-making purposes.

Only 2 of the reviewed articles explicitly discuss the differences between sustainable development and sustainability. Aras and Crowther (2009) reject the assumption that the two concepts are synonymous and debate whether sustainable development is actually an integral part of sustainability; if the basic tenet of sustainability is that decisions made in the present do not restrict choices available in the future, then development is neither necessary or desirable (Aras and Crowther, 2009), and therefore challenges the role and relevance of sustainable development. In contrast Robert et al. (2002) consider sustainability and sustainable development as two distinct, but interrelated levels of a system hierarchy. They explicitly identify sustainability as the desired outcome of system planning and sustainable development as the strategic process for achieving this goal. While this reflects some of the process and goal oriented definitions listed in Table 3, it is the only reviewed article that takes a clear stance on their individual roles and incorporates them into a practical framework.

While these 2 contrasting viewpoints acknowledge potential differences, there is currently general acceptance that sustainability and sustainable development are synonymous. However it could be argued that the interchangeable use of the two terms further contributes
to their definitional confusion (Giddings et al., 2002, Faber et al., 2005, Hopwood et al., 2005), and reflects a lack of understanding that may explain the difficulties experienced in operationalising the concepts.

**Sustainability Spectrum**

A key theme emerging from the literature is of a spectrum of sustainability, although the specifics vary between authors. Seager (2008) provides a spectrum with 4 levels – security (longevity), reliability, resilience and renewal - and suggests that different levels could be appropriate to analyse different problems, as well as serving as an indicator of what stage a firm is at. Most firms are currently considered to be at the security level i.e. focusing on business longevity, where ‘greening’ has largely been at an operational level and focused on short-term cost savings without a ‘vision of sustainability’ (Banerjee, 2010).

Inyang (2009), Udo and Jansson (2009), Springett (2003) and Sathiendrakumar (1996) all identify different strengths of sustainability from weak to strong, and align these with the idea of an achievable standard. Weak sustainability/technocentrism views that the stock of capital assets, whether man-made or natural is perfectly substitutable, with technology replacing resources while at the strong/ecocentric end of the spectrum natural capital must be protected and cannot be substituted. In parallel to a tendency towards the longevity end of Seager’s spectrum, most businesses are also seen to accept and implement a weak definition of sustainability, engaging with social and environmental issues at an easily achieved, ‘green business as usual’ level (Springett, 2003).

All of these viewpoints align with the idea that there are different levels of sustainability that are affected by different underlying academic concepts. Traditional economists are seen to have a ‘relaxed’ view of sustainability and measure it in financial terms with economic growth taking priority while environmentalists apply the stringent, potentially extremist view where no growth can occur at the detriment of natural resources (Inyang, 2009), inviting the criticism that they do not consider the needs of poor people (Appleton, 2006).
Figure 2 consolidates and aligns the different academic viewpoints identified in the literature into a single spectrum, with each horizontal division representing an individual author’s interpretation of the different ‘strengths’ of sustainability, from weak to strong. It serves to illustrate the degree of overlap between the authors’ viewpoints, as well as emphasising the many ways of interpreting and implementing sustainability. The general perception is that weak sustainability is the prevailing approach, where economic growth dominates and positive economic outcomes may have accepted negative social or environmental impacts (Lamberton, 2005). Strong sustainability in contrast emphasises the importance of sustaining the environment and is more qualitative in its approach (Nilsen, 2010).
Figure 2: Spectrum of Sustainability

**WEAK SUSTAINABILITY**
(Neoclassical economics)

- Utility is non-declining over time
- Substituting 1 form of capital for another
  (Nilsen, 2010)

**STRONG SUSTAINABILITY**
(Ecological Economics)

- Economy & nature complementary & should **both** be sustained

**Technocentrism**

- Right to master natural creation for human benefit
  (Gladwin et al., 1995)

**Sustaincentrism**

- Economic & human activities inextricably linked with natural systems

**Ecocentrism**

- Non-human nature should only be used to satisfy vital needs of sustenance

- Physical or human capital can substitute natural capital.
- Technology provides the means
  (Inyang, 2009, Sathiendrakumar, 1996)

**Status Quo**

- Need for change acknowledged but economic growth is the solution.
- No major environmental or social problems
  (Hopwood et al., 2005)

**Reform**

- Acceptance of problems but belief that shifts in policy & lifestyle can be achieved over time & within present social & economic structures.

**Transformation**

- Social & environmental problems rooted in existing economic structures
- Strong commitment to social equity & justice

**Political Reality**

- Capitalist economy dominates environment & society
  (Giddings et al., 2002)

**Material Reality**

- Economy dependent on society & environment

**Rationalism**

- Society = sum of individuals
  Greatest utility for greatest number – desires not needs
  Goal is maximum economic efficiency
  (Sillanpaa, 1998)

**Communitarianism**

- Utility should not just apply at individual level.
- **All** must partake, not just greatest number

**Ecocentrism**

- Everything on planet interconnected & interdependent
- Humanity dependent upon natural systems

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*Figure 2: Spectrum of Sustainability*
The literature indicates there is no single level or approach to sustainability, emphasising the difficulty in operationalising the concept. Each of the above viewpoints can be argued as addressing sustainability issues to some extent, but do not identify when it is truly being achieved. It suggests that a ‘right’ approach does not exist within current business paradigms, and a number of authors (Inyang, 2009, Banerjee, 2010, Giddings et al., 2002, Liyanage, 2007, Kjaerheim, 2005, Wilkinson et al., 2001, Gardner, 2002, Gladwin et al., 1995) advocate a need for a new, more holistic approach to successfully implement and achieve sustainability in practice.

**Dimensions of Sustainability**

The reviewed literature recognises that sustainability is a multi-dimensional concept (Dempsey, 2009, Orians, 1990, Udo and Jansson, 2009), but there are differences in what those dimensions are considered to be. There is consensus that the environment is a key dimension, strongly interrelated with economic activity and growth, and it is also widely acknowledged that the environmental dimension tends to receive the most research attention (Pagell and Wu, 2009, Schaefer, 2004, Sharma and Ruud, 2003, Ashby et al., 2012). Sustainability 'has broad appeal and little specificity, but some combination of development, equity and environment is found in most attempts to define it' (Parris, 2003,p.13).

A social dimension is referred to frequently in the literature and together with the economy and the environment is seen as one of 3 pillars of sustainability (Springett, 2003, Vachon and Mao, 2008, Hutchins and Sutherland, 2008) or interconnected rings (Giddings et al., 2002), as illustrated in Figure 3. These dimensions have been explicitly formed into the economic theory of the Triple Bottom Line (3BL) (Elkington, 1994), which was directly referenced in 9 of the reviewed articles. Other dimensions that were identified in the review include moral/ethical, political, legal, technological and cultural (Seager, 2008, Grinde and Khare, 2008, Pawlowski, 2008, Banerjee, 2010, Chen et al., 2009, Luke, 2005, Moon, 2007, Dyllick and Hockerts, 2002).
The Economic Dimension

The literature suggests that political reality is that the economy dominates the environment and society, and in turn a capitalist view is dominant (Giddings et al., 2002). Capitalism emphasises growth and it is therefore economically unacceptable to limit growth (Strong, 1997). It also aims to commodify the satisfying of human needs, and economic terms are frequently used to describe and quantify society and the environment i.e. social capital and natural capital (Giddings et al., 2002).

Economic growth is often seen as being synonymous with development (Banerjee, 2010), with the view that increased production will overcome poverty (Hopwood et al., 2005). In reality economic growth is unevenly distributed and those who suffer the costs often don’t reap any benefits (Sathiendrakumar, 1996); it is also possible to have economic growth in developing countries without development (Redclift, 1992). It is strongly argued in the literature that sustainability extends beyond economic growth to include wider, more holistic issues such as the quality of life (Salih, 2003) and the concept has effectively evolved out of a recognition that capitalist growth models have failed to eradicate poverty (Hopwood et al., 2005).

The role of economic growth and its relationship with development is a key and heavily debated theme within the reviewed literature, and while it is acknowledged that it may not directly lead to sustainable development (Salih, 2003) sustained economic growth is
considered important. Economic growth can be seen as the ‘motor’ behind development (Redclift, 1992), with development being the use of scientific advances and industrial progress to improve and grow underdeveloped areas (Banerjee, 2010). Chin Sum and Hills (1998) differentiate growth as being a quantitative increase, while development is qualitative; ‘real’ development is value-laden and implies change leading to improvement or progress (Pearce et al., 1989). These different means of viewing the term and process of ‘development’ may explain the difficulty in establishing a single understanding of sustainable development.

Sustainability has emerged to address the environmental problems caused by economic growth (Banerjee, 2010) and recognises that the sacrifice of natural capital equates to uneconomic growth (Grinde and Khare, 2008). The environmental crisis can be seen to be a direct result of the short-termist, status quo path of economic growth (Chin Sum and Hills, 1998), and yet the natural environment is seen as an essential part of a healthy economy (Gardner, 2002). There is therefore an inverse relationship between economic growth and environmental quality (Sathiendrakumar, 1996), but despite calls for a different form of growth, sustainability is still dominated by the Western economic paradigm (Banerjee, 2010).

As well as the debate surrounding growth and development, the established economic paradigm has a number of limitations, which hinders the integration of the 3 dimensions and successful progress of sustainability. Markets are efficient for setting prices, but they cannot reflect true costs in social and environmental terms (Banerjee, 2010). There is a lack of ‘environmental economics’ within a free market (Pawlowski, 2008), and the different stages of market development – embryonic, growth and mature – will influence the expectations of sustainability of firms (Chen et al., 2009).

Gross Domestic Product (GDP) is traditionally used to measure national well-being, but is considered inadequate for reflecting social and environmental impacts (Chin Sum and Hills, 1998, Gardner, 2002, Grinde and Khare, 2008). It does not consider the ‘wealth of nature’ (Kjaerheim, 2005) or the reasons behind money flows. Traditional economic accounting is used
to manage scarce resources, but does not allow for ‘natural capital stock’ (Salih, 2003).

Sathiendrakumar (1996) argues that the environment should be seen as a capital asset so that the objective of economic growth would then be to minimise its depreciation, while Pawlowski suggests creating a ‘green’ GDP (Pawlowski, 2008). This further emphasises that a new economic paradigm is required with a new set of tools to adequately address the environmental dimension (Gardner, 2002).

The Environmental Dimension

Much of the debate around the environmental dimension of sustainability relates to the perceived destruction of the earth’s natural resources through historic and continued industrial activity. Faber et al. (2005, p.4) view sustainability as a means for handling ‘the deteriorating relationship between our global ecology and an on-going economic development’. Environmental degradation occurs when a system’s processing capacities are exceeded; therefore sustainability must consider biological resources and environmental limits (Hart, 1995, Kallio et al., 2007).

‘Ecologic systems can be regarded as stable if all variables return to their primary balance after they have been violated’ (Ciegis and Grunda, 2006, p.62), and aligns with maintaining natural capital (strong sustainability) and the requirement of ensuring ‘future needs’. A number of authors (Appleton, 2006, Kallio et al., 2007, Hopwood et al., 2005) argue that the Brundtland report is fundamentally anthropocentric i.e. focused on human development (weaker end of the sustainability spectrum), and specifically does not address environmental biodiversity. There tends also to be a single view of nature, which does not adequately allow for local and social differences, and structural inequalities in resource access (Banerjee, 2010).

World development issues with environmental concerns and the relationship between material consumption in the North and degradation in the South. Firms should build markets in the South while reducing the environmental burden created by this economic activity and create markets of the future (Hart, 1995).

Industrial Ecology provides a systematic organising framework for the many facets of managing environmental impacts and sees industry as a natural system, offering a holistic view of its flows (Corbett and Klassen, 2006). Korhonen (2004) however emphasises that Industrial Ecology needs to be used within a Strategic Sustainable Development model or there will be potential negative impacts. From a Resource Based View (RBV) of business (Hart, 1995) pollution prevention can offer lower costs and improved efficiency, while product stewardship provides a means to pre-empt competitors in the market. These 2 strategies then interrelate with sustainability as the means to remove the negative link between the environment and economic activity (Moon, 2007).

Evidence from the reviewed literature implies a current piecemeal approach to environmental sustainability, with businesses focusing on those operations that offer tangible and measurable benefits e.g. cost savings from improved energy efficiency, and therefore lacking a clear ‘sustainability vision’ (Banerjee, 2010) or ‘North Star’ goal (Werbach, 2009). The philosophical basis of sustainability is considered to be strong, but a holistic viewpoint and the integration and interdependence of the 3 dimensions are still weak (Sillanpaa, 1998), which may explain the neglect of the social dimension in academic literature to date (Pagell and Wu, 2009, Schaefer, 2004, Sharma and Ruud, 2003, Ashby et al., 2012).

The Social Dimension

Gardner (2002, p.73) states that ‘human beings are at the centre of concerns for sustainable development’, and believes that health and education represent key dimensions. This aligns with the Brundtland requirement of ‘meeting the needs of the present generation without compromising the needs of future generations’, which in turn receives the criticism of being
unashamedly anthropocentric (Hopwood et al., 2005). Gladwin et al. view sustainability as being a process of achieving human development that needs to be inclusive, connected, equitable, prudent and secure.

Sustainability should be the increase of well-being over time (Chin Sum and Hills, 1998) and motivated by a real concern for the long-term well-being of humanity (Allwood et al., 2008). A commonly accepted view is that economic growth can alleviate poverty by creating wealth that can then be used to solve social problems. However the social dimension tends to be treated separately, with the negative consequences of development seen as social obstacles (Banerjee, 2010). Mainstream economic policy focuses on the achievement of prosperity and well-being through global trade and industry, and a consumption-orientated model of life has become favoured (Pawlowski, 2008).

Social sustainability is multi-dimensional, with a strong underlying question of what exactly represents the social goals of sustainable development (Dempsey, 2009). Extra prima characteristics identified by Holden and Linnerud (2007) include satisfying basic human needs, and inter and intra generational equity. Human provisioning and satisfying needs (Giddings et al., 2002) are aspects of the social dimension that represent physical fulfilment, while social equity (Dempsey, 2009) and social justice (Hopwood et al., 2005) address the issues of balance and fairness.

Parris (2003) references Maslow’s Hierarchy of Needs to identify 5 core human needs that should be addressed by sustainability, namely health, education, hunger, poverty and housing. Poverty is seen as one of the key challenges to sustainability (Hart, 1997) and Strong (1997) highlights the dilemma that developing countries’ need to reduce poverty can result in non-sustainability practices. However it is also recognised that developing countries may exploit their natural resources not just to address basic needs, but to achieve a ‘developed world culture’ (Strong, 1997). There exists a confusion between need and desire (Lamberton, 2005),
between well-being and material wealth (Seager, 2008), with a move away from each of the latter states being strongly advocated (Grinde and Khare, 2008).

Social equity has its foundations in social justice, distributive justice and equality of condition (Dempsey, 2009), emphasising the argument against rationalism that all are entitled to an improvement in well-being/utility, not just the greatest number of individuals (Sillanpaa, 1998). Social justice requires respect for both individuals and their societies, and the safeguarding of the material and spiritual fundamentals on which existence relies; a lack of respect for people can also create a lack of respect for the environment (Pawlowski, 2008).

The environmental burden is created by human activity (Hart, 1997) and the level of impact can be quantified as the combination of Population, Affluence and Technology (Hart, 1997, Inyang, 2009). Population is seen as a key aspect of the social dimension and sustainability therefore needs to consider the impact of population growth on physical resources (Redclift, 1992). Sustainability also requires ‘balanced technology-society-environment with a focus on replenishing the earth’, and social sustainability is a pre-requisite for technology, with the two important for facilitating environmental capacity (Udo and Jansson, 2009, p.3071).

An operational definition of sustainability is ‘to ensure that humankind’s use of natural resources and cycles do not lead to diminished quality of life due either to losses in future economic opportunities or to adverse impacts on social conditions, human health and the environment’ (Hutchins and Sutherland, 2008, p.1688). The proper creation and management of habited areas on both a global and regional level can maintain/improve quality of life, create communities and therefore connects directly with the social dimension (Pawlowski, 2008). Sustainability concerns human-made systems (Faber et al., 2005) and the role of individuals and society as a whole therefore play a key role in its achievement.

**Integration of the Dimensions**

The concept of sustainability can be considered as the ‘integration of environmental thinking into every aspect of social, political and economic activity’ (Elkington, 1994, p.90). It effectively
blends social progress, eco system, natural resources, and economic growth as a comprehensive business concept bridging the profits with fundamentals of a commercial business (Liyanage, 2007). ‘Development is a whole; it is an integral, value-loaded, cultural process; it encompasses the natural environment, social relations, education, production, consumption and well-being (Reid, 1995, p.71).

The Triple Bottom Line (3BL) concept was devised as a means to integrate the 3 sustainability dimensions (Elkington, 1997), and fundamentally is economically driven. Dyllick and Hockerts (2002) frame the 3 dimensions as the business case, natural case and societal case, while Liyanage (2007) identifies 3 performance clusters of economic accountabilities, social equity and care for the eco-system that build sustainability pillars. Hart (1997) divides the global economy into the 3 interdependent dimensions of market, survival and nature economies, while Udo and Jansson (2009) propose that sustainability capacity is the sum of social, technological and environmental capacities. Grinde and Khare (2008) move economic planning beyond pure economics to the ‘triple E’ perspective of Environment, Economy and social Equity.

The 3 dimensions of economy, environment and society pervade the sustainability literature and offer a holistic way to view the concept, but questions exist as to what extent they can be integrated and balanced in business practice. Gladwin et al (2005) explicitly question the 3-sector model approach and believe it encourages a 'technical fix' approach. Because each sector can be treated separately fundamental connections may be ignored and there is an inherent assumption that trade-offs are permitted. The 'sustaincentrism' concept proposed by Gladwin et al., (1995) offers an integrative, balance between '3-E' triad of economy, ecology, ethics, where society and economy are merged to sit within the environment to allow human provisioning and satisfying needs (Giddings et al., 2002).

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<th>Economy</th>
<th>Environment</th>
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<td>63</td>
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<td>16</td>
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Table 4: Occurrences of Economy, Environment and Society in the Reviewed Literature
Table 4 indicates that the Environment dimension has received the most focus in the sustainability literature to date and many of the reviewed articles only discuss the relationship/interaction between the economic and environmental dimensions. The economic-environment relationship has produced measurable benefits, whereas social-economy and social-environment are considered more ambiguous (Banerjee, 2010). Social and ethical benefits are less tangible than the other 2 pillars with subjective and qualitative indicators; social capital is often contained within relationships (Dempsey, 2009). The environment may be more measurable, but actions to achieve an ‘environmental balance’ (Wilkinson and Hill, 2001) still present a major challenge in how to prioritise the issues, put them into local, national and global contexts, and align the costs involved against economic indicators.

**Conclusion**

The review of sustainability literature has identified key themes, definitions and interpretations of the concept; there is currently no single, all-encompassing definition of sustainability, and the 1987 Brundtland definition still seems the most widely accepted and cited. The terms of sustainable development and sustainability are used interchangeably and there is currently limited explicit differentiation of the two within academic literature. It may be necessary to acknowledge that sustainability is an emerging, evolving and dynamic concept and therefore such definitional diversity and even contradictory interpretation is to be expected.

In today’s global marketplace sustainability is increasingly considered to be the focal firm’s responsibility, where the focal firm is defined as the organisation that initiates the business transaction, and conceives and designs the products/services intended for consumption (Cavusgil et al., 2008); there is a strong expectation by stakeholders that all aspects of its operations should be environmentally and socially responsible. The literature review has illustrated that sustainability is a multi-dimensional concept and that the 3 dimensions of economy, environment and society are pervasive to its understanding. The 3BL framework is
increasingly being applied to business and has seen the development of Sustainable Supply Chain Management (Mahler, 2007, Seuring and Muller, 2008, Svensson, 2007, Linton et al., 2007) as a means to understand how to achieve sustainability within supply chains. However as the review has illustrated, there are clear challenges with the balanced integration of these 3 dimensions both within business as a whole and more specifically supply chains.

The sustainability spectrum presented in Figure 1 offers a means of evaluating a firm’s progress in achieving sustainability and its degree of integration, with strong sustainability representing the optimal and desirable form. However, it equally implies that there can be accepted trade-offs between the 3 sustainability dimensions, with firms more often positioned at the weak end of the spectrum through a focus on economic performance. While the literature review has suggested a range of tangible and beneficial operational processes (Albino et al., 2009) there is limited evidence in the sustainability literature that firms are fully embracing sustainable supply chains and successfully integrating the 3 dimensions of economy, environment and society.
Chapter 4: Review of Supply Chain Management and Sustainability Literature

Introduction

This chapter reviews supply chain literature to identify and establish the key areas relevant to sustainability, and evaluate the current status of research in this discipline. The previous chapter highlighted a current research bias towards the economic and environmental dimensions and their intersection, with more limited focus on the social dimension of sustainability and how it interacts with the other 2 dimensions (Schaefer, 2004). Seuring and Muller (2008) believe this bias is also prevalent in the Supply Chain Management literature, and in the integration of the 3 identified dimensions, and they explicitly recommend further research in this field.

Search Criteria

As highlighted in Chapter 3 the idea of sustainability was verbalised by Schumacher as early as 1972, and was acknowledged in key works such as ‘Limits to Growth’ (Meadows et al., 1972), which modelled the consequences of a rapidly growing world population and finite natural resources. However it was not until the WCED was established that the environmental and social dimensions of sustainability were more explicitly formalised. Therefore only publications from 1983 to present day were included in the literature search to ensure these 2 key dimensions were represented. It also indicates how recent the multi-dimensional concept of sustainability is in academic literature and how it has paralleled SCM, which has only been formally recognised as a discipline since the early 1980s (Svensson and Baath, 2008). Figure 4 shows the spread of the reviewed papers from 1983 and illustrates the growing research interest in the fields of sustainability and SCM, with the most substantial growth occurring from 2001.
The literature search simultaneously employed the 3 databases of Science Direct, EBSCO and Emerald Fulltext. This relatively small number of databases provided collective access to over 4500 academic publications, including all key operations and supply chain journals. They therefore provided a significant hit rate for relevant SCM and sustainability literature across multiple disciplines, which was a key consideration for this review. However it also created some duplication, so it was necessary to crosscheck the search results from each database to ensure that the correct numbers of hits were recorded.

![Figure 4: Number of Reviewed Papers per Year](chart.png)

An initial search was made using the term Sustainable Supply Chain Management in all search fields and this produced a combined results list of 11,020 hits. The same term was then restricted to article Title or Keyword and substantially reduced the number of hits to just 70. Allowing for duplication of hits and calls for papers across the 3 databases and identifying those papers which specifically related to Sustainable Supply Chain Management this number was reduced to 14 articles from quality peer reviewed journals. A search for sustainability and Supply Chain Management in all fields produced 8,156 results, while a focus on Title and/or
Keywords reduced it to 35 hits. This smaller number allowed for the abstract of each paper to be reviewed to establish its relevance to the research question and provided a further 6 papers to the overall review.

A standard approach to selecting papers for a literature review is to apply a statistical sampling method to a large number of results (Burgess et al., 2006), but the above process highlights how SSCM is a developing field with a limited number of articles that deal explicitly with this subject. Therefore the use of title and/or keywords as the search criteria enabled the number of articles to be reduced to the extent that it was possible to evaluate the relevance of the papers individually. However the 26 papers resulting from the above process were considered insufficient for an effective review and a further set of search terms were utilised to capture papers that did not sit explicitly within Sustainable Supply Chain Management, but that were still relevant to sustainability in the context of supply chains. Therefore this was not a random search process, but one that was progressively refined by the use of specific search terms and it ensured that appropriate and high quality papers were retrieved for review.

‘Green supply chains’ as a search term used in both title and keyword produced 122 combined results across the 3 databases. Using quality criteria of peer reviewed journals and key recognised authors in the field, removing calls for papers and duplications across the 3 databases plus papers that had already been identified this number was reduced to 35 papers. This represented the largest group of papers across all the search terms, as indicated in Table 5. This process was repeated with other key search terms related to the whole supply chain and which align with sustainability. All search terms were used in conjunction with the additional terms of supply chains and Supply Chain Management for both Title and Keyword; through this process and restricted search criteria a total of 134 articles were selected for review. While these articles represent a significant proportion of the relevant literature on SSCM it was recognised that the chosen methodology and specific search criteria would inevitably exclude some work in the field.
Table 5: Literature Review Search Terms

<table>
<thead>
<tr>
<th>Search Term</th>
<th>No. of Papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Supply Chains</td>
<td>35</td>
</tr>
<tr>
<td>Supply Chain Management (SCM)</td>
<td>29</td>
</tr>
<tr>
<td>Sustainability/Sustainable Development</td>
<td>16</td>
</tr>
<tr>
<td>Environmental Sustainability</td>
<td>14</td>
</tr>
<tr>
<td>Sustainable Supply Chain Management (SSCM)</td>
<td>14</td>
</tr>
<tr>
<td>Corporate Social Responsibility</td>
<td>8</td>
</tr>
<tr>
<td>Social Sustainability</td>
<td>7</td>
</tr>
<tr>
<td>Closed Loop Supply Chains</td>
<td>7</td>
</tr>
<tr>
<td>Life Cycle Analysis (LCA)</td>
<td>3</td>
</tr>
<tr>
<td>Integrated Chain Management</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 6 lists the journals that were accessed for the review and the number of papers acquired from each. While there is a strong emphasis on Operations and Supply Chain Management journals as would be expected, it also illustrates the multi-disciplinary approach required in a systematic review (Burgess et al., 2006, Tranfield et al., 2003) with journals crossing business management, strategy and sustainability disciplines. This recognises the need for considering cross-disciplinary perspectives in systematic reviews and shows the different ways the research topic has been approached (Tranfield et al., 2003, Burgess et al., 2006).

To minimise any potential bias the search process was conducted using keywords across a series of research databases and not at individual journal level. As with the sustainability literature review ABS ranked 2 – 4* journals represented the largest percentage of reviewed publications. However given the growing importance and contemporary nature of sustainability within the Supply Chain Management discipline, the most up to date material is often found in newer and/or lower ranking journals as they typically have shorter publication lead times. Therefore, journals that were deemed highly relevant, but which fell outside the 2 - 4* scope were still included to ensure the most current research was represented.

<table>
<thead>
<tr>
<th>Journal Title</th>
<th>ABS Ranking</th>
<th>No. of Papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academy of Management Journal</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Academy of Management Review</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>British Journal of Management</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Business Ethics: A European Review</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Business Process Management Journal</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Business Strategy &amp; the Environment</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>California Management Review</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Corporate Social Responsibility &amp; Environmental Management</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>
Table 6: Reviewed Journals

The range of papers illustrates the holistic nature of Supply Chain Management (SCM) and sustainability and highlights the need for an inter-disciplinary approach to capture the most relevant literature (Burgess et al., 2006). Consequently a range of research philosophies and methods were represented, rather than a focus on one type of study or form of data (Armitage and Keeble-Allen, 2008). It indicates how substantial the research interest is in sustainability within supply chains and the extent to which it is discussed in academic literature, but also illustrates a lack of systematic literature reviews in comparison to other methods.

The majority of the reviewed literature was academic research papers – 108 in total with 4 of these explicitly referenced as conceptual papers. 28 of the reviewed items were classified as articles and these were largely report based rather than dealing with an explicit research question. There were also 4 introductions to special issues on sustainability with 2 specific to Sustainable Supply Chain Management (SSCM). The diversity in the literature illustrates the
contemporary nature of the subject and that it is broadly discussed and reported as well being heavily researched across multiple areas of business and management.

**Research Methodologies**

Table 7 illustrates the highly qualitative nature of the current literature as less than 25% of the reviewed papers used pure quantitative data collection methods or analysis. Case studies represented the dominant research methodology in relation to supply chains and sustainability. Over 50% of the case studies were conducted with just 1 or 2 firms with the greater proportion being with single firms and investigating their whole supply chain. Only 1 case study used more than 5 firms and focused on 10 exemplar organisations that employ socially responsible buying (Pagell and Wu, 2009).

<table>
<thead>
<tr>
<th>Methodology</th>
<th>No. of Instances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case Study</td>
<td>28</td>
</tr>
<tr>
<td>Survey/Questionnaire</td>
<td>21</td>
</tr>
<tr>
<td>Discussion/evaluation</td>
<td>18</td>
</tr>
<tr>
<td>Literature Review</td>
<td>17</td>
</tr>
<tr>
<td>Theory/concept development</td>
<td>14</td>
</tr>
<tr>
<td>General review of papers/tools/concepts</td>
<td>12</td>
</tr>
<tr>
<td>Interviews</td>
<td>10</td>
</tr>
<tr>
<td>Modelling</td>
<td>7</td>
</tr>
<tr>
<td>Content Analysis</td>
<td>3</td>
</tr>
<tr>
<td>Delphi Study</td>
<td>2</td>
</tr>
<tr>
<td>Statistical Analysis</td>
<td>2</td>
</tr>
</tbody>
</table>

*Table 7: Methodologies of Reviewed Papers*

Very few of the reviewed papers applied a pure deductive approach to ‘test’ pre-established theory, indicating how new the integration of sustainability into SCM is, and how the theory related to this area is still developing. This may explain the dominance of inductive research methods such as case studies, which are better at gaining insight and understanding of complex, contemporary ‘real world’ phenomena (Yin, 2009) in this review.

There were 10 instances of interviews being used as the method of data collection and the majority of these interviews were semi-structured where questions may be adjusted or adapted in response to any new or interesting facets that arise during the interview process (Reuter et al., 2010). This indicates an emphasis in current SSCM research on acquiring more...
qualitative, rich and descriptive information. The survey and questionnaire methods also focused on acquiring qualitative rather than quantitative data although these methods lend themselves to either form. Two Delphi studies were undertaken with experts/practitioners in the supply chain field and were more quantitative in their approach (Seuring, 2008b, Handfield et al., 2002); the former applied a Likert scale and statistical analysis to inform understanding of SSCM while the other applied a ranking approach to key environmental criteria to develop a potential decision support model.

This latter study provided one of the few tangible outputs within the reviewed literature; 8 models and 16 conceptual frameworks were developed with 6 of these frameworks appearing in Supply Chain Management: an International Journal (SCMJ). The largest number of models/frameworks focused on the concept of Sustainable Supply Chain Management, followed closely by Environmental Management, and the emphasis for both of these themes was on supply chain strategy and decision-making. 2 Socially Responsible Purchasing models were developed (Leire and Mont, 2010, Carter and Jennings, 2002), perhaps reflecting the more measurable nature of this supply chain stage as it deals with tangible materials. 4 models focused on social responsibility/CSR (Aguilera et al., 2007, Hahn et al., 2010, McElroy et al., 2007, McWilliams and Siegel, 2001) while only 1 output explicitly addressed the more holistic concept of ‘closed loop’ supply chains (Defee et al., 2009).

This lack of outputs highlights that current research is focused on understanding the emergent phenomenon of sustainable supply chains and developing theory. SCM is fundamentally a practical discipline, which focuses on products and processes and the links/relationships that facilitate these. While the different research methods exhibited in Table 7 are largely grounded in understanding ‘real world’ situations, current sustainable supply chain research is not informing practice significantly. This supports a recognised lack of impact of research on management practice (Ghoshal, 2005), and the difficulties in addressing the more ‘human’ elements of sustainability within supply chains.
While the reviewed literature may not currently provide a significant number of tangible outputs it does reveal a research bias toward operational processes, assessments and procedures i.e. practical measures as the means to address sustainability in supply chains. 46% of the reviewed papers focused on the ‘greening’ of products, processes and performance, and yet SCM and sustainability are concepts that implicitly require an integrated, holistic approach. This could be considered a key limitation of current sustainability and SCM research and highlights the highly complex and challenging nature of these fields.

**Key Themes**

Having systematically identified the most relevant literature the process of research synthesis was undertaken, which collectively relates to the summarizing and integrating of different studies on the chosen topic (Tranfield et al., 2003). As well as identifying key similarities it was important to apply a critical approach when reviewing the text to identify and assess both heterogeneity between the papers and their individual quality (Armitage and Keeble-Allen, 2008). This interpretative, ‘meta-synthesis’ approach allows the important similarities and differences to be considered (Tranfield et al., 2003, Burgess et al., 2006) and looks for explanations to gain a deep understanding of the studied area (Strauss and Corbin, 2008). The use of coding schemes (Strauss and Corbin, 2008, Miles, 1979, Charmaz, 2006) and cross-comparison with the other papers enabled the identification of a series of key themes within sustainability and Supply Chain Management literature to date.

Table 8 presents the key themes that were identified through the analysis process, together with an overall count, which is ranked to indicate the themes that have received the most research attention to date. These key themes are discussed and reported in the following sections, firstly in relation to the discipline of Sustainable Supply Chain Management (SSCM), and then specifically to the environmental and social dimensions of sustainability; where appropriate specific papers within a theme are cited.
<table>
<thead>
<tr>
<th>Theme</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycling</td>
<td>53</td>
</tr>
<tr>
<td>Cooperation/coordination/collaboration</td>
<td>42</td>
</tr>
<tr>
<td>'Greening'</td>
<td>40</td>
</tr>
<tr>
<td>Supply Chain Management (SCM)</td>
<td>29</td>
</tr>
<tr>
<td>Social dimension</td>
<td>27</td>
</tr>
<tr>
<td>Reverse logistics</td>
<td>25</td>
</tr>
<tr>
<td>Green purchasing</td>
<td>24</td>
</tr>
<tr>
<td>Product Stewardship</td>
<td>23</td>
</tr>
<tr>
<td>Reuse</td>
<td>23</td>
</tr>
<tr>
<td>Green Supply Chain Management (GSCM)</td>
<td>19</td>
</tr>
<tr>
<td>Remanufacturing</td>
<td>16</td>
</tr>
<tr>
<td>Sustainable Supply Chain Management (SSCM)</td>
<td>14</td>
</tr>
<tr>
<td>Fairtrade</td>
<td>13</td>
</tr>
<tr>
<td>Environmental Management (EM)</td>
<td>12</td>
</tr>
<tr>
<td>Social equity</td>
<td>12</td>
</tr>
<tr>
<td>Social capital</td>
<td>11</td>
</tr>
<tr>
<td>Design for the Environment (DfE)</td>
<td>9</td>
</tr>
<tr>
<td>Corporate Social Responsibility (CSR)</td>
<td>7</td>
</tr>
<tr>
<td>Socially Responsible Purchasing (SRP)</td>
<td>6</td>
</tr>
<tr>
<td>Environmental Supply Chain Management (ESCM)</td>
<td>5</td>
</tr>
<tr>
<td>Life Cycle Analysis (LCA)</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 8: Occurrence of each Theme in Reviewed Articles

There were 29 papers relating to Supply Chain Management (SCM) as evidenced in Table 8, and while Sustainable Supply Chain Management (SSCM) is an explicit evolvement of this discipline it is currently less well represented in the literature, with only 14 reviewed papers dealing explicitly with this subject. The earliest publication date on SSCM was 2003, compared to the reviewed SCM papers, which started in 1996. While this shows that SSCM is an emergent field the majority of SCM papers featured in the review were published after 2005 and showed a growth in line with the SSCM literature. The dominant research method utilised in both fields is the literature review, followed by case studies. 4 of the literature reviews employed a systematic method with 3 being published in 2011 and only 1 paper in either of the studied fields used a statistical/quantitative research method (Rao and Holt, 2005).

Specific issues highlighted in the literature that need to be addressed in SSCM include cooperation and communication between supply chain members to achieve a proactive sustainability approach; risk management to identify environmental and social problems before they are exposed publicly; and the total life cycle of a product (Seuring, 2008b, Hagelaar and van der Vorst, 2002). This extends to the re-conceptualisation of the supply chain.
by changing what it does, moving toward closed loop systems created through the use of Reverse Logistics (RL) and reconceptualising who is in the supply chain (Pagell and Wu, 2009). Forward and reverse supply chains form a ‘closed loop’ when managed in a coordinated way and can foster sustainability (Kleindorfer et al., 2005). However Svensson (2007) argues that this still restricts SSCM to point of origin and end boundaries and needs to recognise the inherent horizontal interconnections in and between supply chains.

**Supply Chains**

Most organisations are a part of at least one supply chain (Samaranayake, 2005) and competition is increasingly based on supply chain vs. supply chain (Gold et al., 2009, Soler et al., 2010). Globalisation and recent economic trends have created highly complex supply chains (Varma et al., 2006) and therefore the design, organisation, interactions, competences, capabilities and management of supply chains have become key issues (Gold et al., 2009). ‘A supply chain includes all the activities, functions and facilities involved (either directly or indirectly) in the flow and transformation of goods and services from the material stage to the end-user’ (Sridharan et al., 2005, p.313). A traditional supply chain moves forward from raw materials to finished product (Crandall, 2006) and ‘encompasses all activities associated with the flow and transformation of goods from the raw materials stage (extraction), through to the end user, as well as the associated information flows (Seuring, 2004, p.1060).

Many supply chain definitions imply a one directional chain, which can over simplify an extremely complex set of interactions and processes. There is also a tendency to focus on the actual physical goods, but information, people, funds and a wealth of other items flow back and forth along the chain (Lowson, 2002). It is therefore more appropriate to describe the supply chain as a network (Burgess et al., 2006) of material processing cells with the characteristics of supply, transformation and demand (Spekman et al., 1998). It is a series of ‘autonomous or semi-autonomous business entities involved, through upstream and downstream links, in different processes and activities that produce physical goods or services
to customers’ (Samaranayake, 2005, p.48). A supply chain will typically consist of the 3 primary elements of structures i.e. organisational units; processes i.e. operational activities that transform inputs into outputs; and the linkages that connect them via communication (Lowson, 2002).

A focal firm is the organisation that initiates the business transaction, and conceives and designs the products/services intended for consumption (Cavusgil et al., 2008); it is therefore frequently a focal firm that owns or governs the supply chain and its interactions due to their proximity to the end customer and/or organisational scale and power in comparison to the other actors (Seuring, 2004, Leppelt et al., 2013). There are dependencies between levels in channels from point-of-origin (manufacturers and suppliers) to point-of-consumption (consumers) (Svensson and Baath, 2008). Customers and stakeholders do not always differentiate between a company and its suppliers and therefore increasingly hold the focal firm responsible for their suppliers’ activities (Lippman, 2001).

There has been a tangible shift from vertical integration and its perceived benefits – economies of scale, access to capital etc. – to outsourcing where each company specialises in a specific product and/or process and therefore achieves agility, speed and rapid growth (Samaranayake, 2005). Outsourcing focuses on a company’s core competencies and can facilitate the removal of fixed costs for non-core functions such as warehousing (Varma et al., 2006). As a result competition is no longer between firms, but between supply chains and Supply Chain Management (SCM) becomes integral to success (Varma et al., 2006).

**Supply Chain Management**

The development of SCM has been largely practitioner-led (Burgess et al., 2006) and represents an evolutionary step beyond logistics (Samaranayake, 2005). While a supply chain consists of a number of components, its effective management requires the integration of information and material flow through these components from source to user (Samaranayake, 2005, Landry, 1998, Kauffman, 2002). It is a network of companies from suppliers to end-users,
which have the intention of integrating supply and demand via coordinated company efforts (Frankel et al., 2008, Larson and Halldorsson, 2002). Mentzer et al. (2001, p.18) interpret SCM as ‘the systemic, 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’.

The initial, more traditional view of SCM was that it could be used to leverage suppliers to achieve lowest purchase prices and/or to assure supplies. However, the paradigm that has evolved views it as a process for designing, developing, optimising and managing internal and external components of the supply chain (Spekman et al., 1998). Despite this, some authors see a tendency for SCM to be framed in terms of processes and hard, quantifiable elements (Burgess et al., 2006). Consequently SCM can be seen as ‘a corporate function of increasing economic importance, but one that is not pulling its weight in environmental protection’ (Preuss, 2005b, p. 133).

While definitions of SCM may vary the key commonalities represented in the literature are cooperation, coordination, integration and collaboration together with a recognition of its cross-disciplinary nature (Frankel et al., 2008); these features were referred to in 42 separate papers (Table 8). Spekman et al. (1998) consider cooperation as the threshold level of interaction where firms exchange some essential information and engage some suppliers in long-term relationships, while in coordination workflow and information is exchanged to allow more seamless linkages. The latter stage of collaboration represents the optimum level and occurs when 2 or more independent firms work together in partnership to plan and execute supply chain operations with greater success than if they acted in isolation (Nyaga et al., 2010).

**Supply Chain Relationships**

Relationships are considered integral to SCM success (Spekman et al., 1998, Harland, 1996); traditional supplier relationships are frequently ‘arms length’ and focus on increasing the
number of suppliers to economise costs (Transaction Cost Theory), whereas the cooperative model/relational approach focuses on the sharing of information (Preuss, 2005b, Power, 2005). Developing and maintaining a relationship is achievable through compliance or collaboration – trust is required for collaboration to succeed while power creates compliance (Simpson and Power, 2005). Larger firms have the power to mandate suppliers’ compliance, but cooperative and integrated approaches are more likely to be fruitful (Sharfman et al., 2009).

Collaborative relationships are characterised by information sharing, a long-term approach and mutual advantage (Preuss, 2005a) with joint efforts to creating value that cannot be achieved independently (Nyaga et al., 2010). They require the development of trust and commitment between buyers and suppliers (Attaran and Attaran, 2007, Nyaga et al., 2010), and trust can be seen as being a prerequisite to supply chain success (Varma et al., 2006). Effective SCM relies on close, long-term and committed working relationships (Spekman et al., 1998) and requires confidence among partners (Varma et al., 2006). Out of the 134 reviewed papers 67 referred to the role of collaboration in supply chain relationships and 62 emphasised the importance of trust in these relationships.

The concepts of trust and power are key to SCM as a firm can have different degrees and bases of power over both its customers and its suppliers. Power can take the form of punishment or reward, legal enforcement, and ‘expert’ power where the organisation has skills and knowledge which are valued by other parties (Preuss, 2005a). Trust is considered an ‘antidote’ to the exertion of power in supply chains and is characterised by an interdependence between actors, providing a way of coping with risk and uncertainty, and that one party’s vulnerability will not be taken advantage of by another (Preuss, 2005a).

Strategic supply chain relationships can be either horizontal or vertical; vertical is between supplier and customer/buyer and known as a partnership, while horizontal relationships are between the suppliers themselves and known as alliances. These relationships need to yield
immediate, short-term benefits, but more importantly must extend into the future; they should be built on collaboration and cannot be controlled, but rather rely upon interpersonal connections and internal infrastructures (Gattorna and Walters, 1996).

Three principal elements of an integrated and managed supply chain are information systems, inventory management and supply chain relationships (Preuss, 2005b, Power, 2005), characterised by cooperation, collaboration, information sharing, trust, partnerships and shared technology (Power, 2005). Information sharing is crucial to successful partnerships and the flow of information forms an integral part of SCM (Varma et al., 2006). Integrated supply chains are inherently strategic (Power, 2005) and there has been a defined shift from a tactical focus to a more strategic approach in SCM (Attaran and Attaran, 2007).

Following the Resource Based View (RBV) of the firm (Barney, 1991) the sharing of meaningful, rare, valuable, not imitable or non-substitutable information can create ‘distinctive visibility’, and relational embeddedness gained through a history of interactions can improve performance and provide a sustainable competitive advantage (Soler et al., 2010, Bernardes, 2010). Informational quality and relationship commitment represent key strategic elements (Soler et al., 2010) and strategic purchasing can facilitate closer and mutually beneficial relationships, as well as extensive communication between the focal firm and its supply base (Bernardes, 2010).

**Defining SSCM**

The reviewed literature recognises that a supply chain’s performance should be measured not just by profits, but also by its impact on environmental and social systems (Pagell and Wu, 2009). The 3BL concept introduced in Chapter 3 allows a firm to measure its progress towards the goal of sustainability (Elkington, 1994). If a sustainable supply chain is one that performs well across all 3 dimensions then Sustainable Supply Chain Management (SSCM) represents the actions taken to achieve this goal (Pagell and Wu, 2009) and involves the inter-connection between components and interfaces across supply chains (Svensson, 2007).
SCM requires a broadened approach of SCM and should emphasise the economic, ecological and social aspects of business (Svensson, 2007). ‘A company is no more sustainable than its supply chain’ (Krause et al., 2009, p.19), therefore SCM is insufficient and Sustainable Supply Chain Management (SSCM) must become the norm. It is ‘the strategic, transparent integration and achievement of an organisation’s social, environmental and economic goals in the systemic coordination of key inter-organisational business processes for improving the long term economic performance of the individual company and its supply chains’ (Carter and Rogers, 2008, p.368). Specific issues to be addressed include cooperation and communication between supply chain members, which contributes to a proactive approach; risk management to identify environmental and social problems before they are exposed publicly; and the total life cycle of a product (Seuring, 2008b).

The fast changing and increasingly global competitive environment has had a strong impact on the role of the purchasing function in supply chains, which is increasingly seen as a strategic weapon to establish cooperative supplier relationships (Chen and Paulraj, 2004). Purchasing can be the key intermediary between the different members of a supply chain as it sits at the firm’s boundary, and buyers interact with suppliers and other upstream channel members. Purchasing behaviour can strongly influence how a firm is viewed by suppliers and the marketplace, and in some industries can control up to 60% of a firm’s costs (Carter, 2000). The role of strategic purchasing is to direct activities towards opportunities that will enable a firm to achieve its long-term goals (Carr and Smeltzer, 1999) and achieve an optimal purchasing strategy in a supply network environment (Svahn and Westerlund, 2009). It emphasises the importance of building relationships with suppliers and can be positively linked to supply management capabilities and greening the supply process (Gold et al., 2009).

Two types of purchasing exchange can be identified; transactional i.e. the more traditional ‘arm’s length’ approach, which tends to involve single, short term and defined purchases, and relational exchanges, where buyer and supplier cooperate over a longer period (Svahn and Westerlund, 2009) and purchasing activities are integrative (Carr and Smeltzer, 1999).
Additionally purchasing traditionally has 2 primary functions, namely operational efficiency and effectiveness. The former is concerned with price-orientation and cost reduction, while the latter focuses on adding value, for example through innovation and flexibility (Svahn and Westerlund, 2009). Efficiency is more strongly related to a transactional approach as it promotes competition between suppliers to achieve the best pricing and the buyer has a greater level of power (Cox, 2004). Effectiveness however relies on established and long term supplier relationships, where the power is more equally shared (Kraljic, 1983).

Purchasing is a boundary-spanning activity and is therefore central to achieving sustainability in supply chains (Krause et al., 2009). As a result of increased environmental and social requirements from buyers sustainability may become an order qualifier for suppliers (Krause et al., 2009). Pagell and Wu’s 2009 study of 10 exemplars in SSCM indicates that a capability to innovate together with proactivity and commitment from senior management may also be precursors for successful SSCM. If sustainability is treated in generic ways and disconnected from strategy it can lead to conflicting social, environmental and economic objectives (Carter and Rogers, 2008).

Krause et al. (2009) propose that sustainability should become a competitive priority alongside the traditionally recognised priorities of quality, cost, delivery and flexibility. However these 4 aspects are more tangible than environmental and social dimensions and highlights the difficulty of how to detect or ensure the key components of sustainability (Krause et al., 2009), as well as how to align all the components within supply chain decisions. Carter and Rogers’ (2008) SSCM model in Figure 5 develops the 3 ring sector view of sustainability and 3BL concept, and implies that sustainable practices should be implemented using an integrated approach that considers the trade-offs between environmental, social and economic performance.
The model also indicates the key contributions of effective SCM, and an embedded approach to sustainability that is reflected in a firm’s culture. How these issues and the 3 dimensions are addressed will achieve different levels of sustainability ‘success’. Pagell (2009) emphasises the need to align the economic and non-economic elements of sustainability, and to make sustainability part of the daily conversation. As a result decisions automatically include social and environmental impacts, sustainability becomes a guiding philosophy, and responsibility is shared across the supply chain (Pagell and Wu, 2009). However it is considered that the economic dimension is ultimately the most critical of the three, as without economic success the supply chain will not continue to exist (Seuring, 2008b, Pagell and Wu, 2009).

There is recognition that firms have made progress in the economic and environmental dimensions (Krause et al., 2009, Sarkis et al., 2010a), but significant development in societal issues is considered lacking (Krause et al., 2009) and research literature to date has generally ignored the social component of sustainability (Pagell and Wu, 2009, Schaefer, 2004, Sharma and Ruud, 2003). This may be because the social elements of sustainability are particularly difficult to attain or may not even represent an appropriate goal for business (Schaefer, 2004, Lamming and Hampson, 1996). Sharma and Ruud (2003) also suggest that addressing the
social dimension and therefore achieving ‘true’ sustainability is only possible in supply chains that operate within definable geographic regions and are not ‘globally fragmented’.

SSCM has received imbalanced research attention, with an emphasis on capabilities that generate financial performance. The economic-environment relationship has produced measurable benefits, whereas the social-economy and social-environment interactions are more ambiguous (Banerjee, 2010). Social benefits are considered less tangible with subjective, qualitative indicators and social capital is often contained within relationships rather than processes (Dempsey, 2009). Understanding how to integrate the 3BL in supplier management structures is at an early stage (Reuter et al., 2010) and there are clear challenges with the balanced integration of sustainability in supply chains. Recent literature has shown that while sustainable supply chain practices are growing they tend to focus on the economic-environment interaction and ‘easy to green’ processes (Preuss, 2005a, Vachon and Klassen, 2006a, Ashby et al., 2012). In contrast the role of relationships, a key facet of social sustainability, has been significantly underexplored despite the emphasis it receives in the literature as a means to achieve coordination and collaboration (Soni and Kodali, 2011, Burgess et al., 2006, Ashby et al., 2012).

**Sustainability Dimensions and Supply Chains**

Table 9 illustrates the high proportion of articles relating specifically to the environmental dimension of sustainability, with ‘green’ supply chains representing a particularly strong area of research. This aligns with the higher number of articles coming from environmentally focused journals, as well as the greater emphasis on the environmental dimension highlighted in Chapter 3. To examine this observed difference in emphasis, during the review process it was recorded whether an article referred to the key dimensions of society and environment individually and/or collectively. 106 papers in total explicitly discussed one or more of the dimensions while the remaining 28 papers made no substantial reference to either dimension, discussing SSCM in a broader context. This process enabled the current research status of each
aspect to be established and to gain an indication of how integrated the dimensions are within supply chains.

<table>
<thead>
<tr>
<th>Number of articles</th>
<th>Environmental</th>
<th>Social</th>
<th>Both</th>
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<tr>
<td></td>
<td>52</td>
<td>20</td>
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Table 9: Occurrences of Environmental & Social Dimensions in Reviewed Literature

The environmental dimension is substantially better represented than the social dimension in the literature and to an even greater extent than in the business and sustainability literature (Table 4). Even where both dimensions were discussed, the emphasis was on environmental, rather than social practices/principles. Papers that dealt specifically with the social dimension tended to focus on one specific area or practice, for example Fairtrade, rather than taking a fully holistic view. The environment seemed more fully aligned with supply chain performance as it can provide measurable benefits, whereas social sustainability was considered more ambiguous (Banerjee, 2010). In addition, its inter-relationship with the environmental dimension received limited explicit discussion within the literature, and those papers that referred to both dimensions treated them as separate rather than interacting entities.

**The Environmental Dimension**

The ‘green’ or environmental dimension was well represented in the literature as evidenced in Table 9 and the search term of ‘green supply chains’ returned the highest number of papers, suggesting this is currently the most developed interaction between Supply Chain Management (SCM) and sustainability. ‘Green’ was the dominant term used in discussion of this dimension, featuring in 40 papers with almost 50% of these explicitly relating to the field of Green Supply Chain Management (GSCM), as illustrated in Table 8.

A ‘green’ supply chain (Robinson and Wilcox, 2008, Khoo, 2001) is where a focal firm works with their suppliers to improve the environmental performance of products and manufacturing processes (Simpson and Power, 2005, Zhu et al., 2005). It requires a paradigm shift from the conventional association of success around financial parameters, and a holistic environment concern (Varma et al., 2006). To manage the environmental performance of a
supply chain all stages and procedures need to be addressed (Tsoulfas and Pappis, 2006, Tohamy, 2009), as any activity may have a negative impact on the environmental chain (Bloemhof-Ruwaard et al., 1995, Tsoulfas and Pappis, 2006). Supply chain relationships have traditionally been dominated by cost, quality and delivery, and the environment is rarely seen as critical when compared with these objectives (Simpson and Power, 2005). The reviewed literature acknowledged that supply chain relationships can be a key avenue for firms to influence their environmental performance, but as highlighted the current focus of SCM and sustainability research is on the more tangible elements of product, process and performance.

Green Supply Chain Management (GSCM) can be viewed as SCM with the added ‘green’ component and incorporates green purchasing, green manufacturing, green materials management, green distribution and marketing and Reverse Logistics (Hervani et al., 2005, Testa and Iraldo, 2010, Thun and Muller, 2010). It integrates environmental issues into SCM processes by identifying costs, benefits and risks, along with opportunities (Zhu et al., 2008) to manage and reduce waste with the ultimate aim of waste elimination (Handfield et al., 2005). It also has the potential to reduce the direct and indirect environmental impacts of an organisation’s final product (Darnall et al., 2008). However the reviewed literature recognises that firms adopting GSCM may only evaluate 1st tier suppliers (Darnall et al., 2008), whereas the SCM function has an impact far along the supply chain to 2nd and 3rd tier suppliers, and potentially beyond (Preuss, 2005b, Pagell and Wu, 2009).

The term Environmental Supply Chain Management (ESCM) is also utilised to describe the set of supply chain management policies held, actions taken, and relationships formed in response to concerns related to the natural environment (Hagelaar and van der Vorst, 2002). In comparison to GSCM it is the lesser-used term with only 5 instances in the reviewed papers against 19 of GSCM (see Table 8). Despite this difference in terminology the literature emphasises the growing attention to this specific field, which has largely developed in the last 10 years.
Firms typically have no legal responsibility for the environmental activities of their suppliers, and this raises the issue of incentives for improving environmental performance (Simpson and Power, 2005). Larger focal firms tend to be the ones under pressure to improve environmental performance, while their suppliers lack direct incentives (Hall, 2001). Some companies worry about accepting any form of liability for their suppliers’ environmental performance which creates a barrier to ESCM (Handfield et al., 2005). There is also a misconception that environmental initiatives are more costly and improved environmental performance and costs are frequently seen as a dichotomous rather than symbiotic relationship (Handfield et al., 2005). However Porter (1991) argues that ‘the conflict between environmental protection and economic competitiveness is a false dichotomy based on a narrow view of the sources of prosperity and a static view of competition’.

Profitability and pollution prevention are not necessarily mutually exclusive (Simpson and Power, 2005) and addressing the environment within supply chains can bring a range of benefits and improvements. This includes cost reduction through the more efficient use of resources, quality improvement and better Human Resource practice (Simpson and Power, 2005). Greening can provide a competitive advantage through product differentiation (Reinhardt, 1999), a marketing edge and the leveraging of innovation (van Hoek, 1999). It is increasingly recognised as important to market success, evidenced by an increase in ‘green’ products, but investment in environmental practices alone does not guarantee success (Min and Galle, 1997).

Knowledge sharing and the capability to integrate external resources can also provide a competitive advantage through the cross-fertilisation of knowledge and know-how (Vachon and Klassen, 2006b). Supplier environmental performance can be an order winner, whereas cost and quality are typically order qualifiers (Handfield et al., 2005). The potential societal benefits of green supply include a move towards sustainability and the use of a holistic approach (Bowen et al., 2001), and indicates the link between supply chain behaviour and achievement of sustainability.
All the reviewed papers relating to these specific themes were published between 2001 and 2011, and the field’s importance is further evidenced by the number of papers focusing on green, or environmental, supply chains. Research methods used in the papers had a qualitative emphasis and the most common data collection method was surveys or questionnaires followed by case studies/interviews. Only 3 papers offered practical outputs in the form of models for strategic decision-making and measurement in GSCM and ways to integrate the environment into SCM (Handfield et al., 2005, Sarkis, 2003, Zhu, 2008).

Environmental Management

Being a ‘steward for the environment’ is a business strategy that can drive green supply chains (Handfield et al., 2005) and requires the fair and legal use of natural resources (Vachon and Klassen, 2006b). Environmental Management (EM) can be defined as ‘the set of objectives, plans and mechanisms that determine the responsiveness of operations to environmental issues (New and Westbrook, 2004), and Environmental Management Systems the tools that enable its implementation (Oktem et al., 2004)

12 of the reviewed papers dealt explicitly with the themes of Environmental Management (EM) and Environmental Management Systems (EMS) (see Table 8). 5 of these reviewed specific literature from the field while the remaining papers evenly employed case study, interview and survey research methods. 8 of the papers looked at the interaction of EM with SCM or sustainability with 50% positioning EM within the context of supply chains. 1 paper (Green et al., 1996) discussed EMS specifically in relation to purchasing and another focused on the relationship between EM and the social dimension of sustainability (Sharma and Ruud, 2003).

Three defined approaches to EM were represented in the reviewed literature. Reactive, characterised by ‘end of pipe’ pollution control; proactive, where firms recycle and re-use products and materials within their supply chains and pre-empt new environmental legislation; and value-seeking, where environmental behaviour is integrated into the business strategy.
with a supply network wide responsibility (van Hoek, 1999). There is a prevalent view that EM is a zero sum game, where if the environment wins the firm loses and vice versa (Reinhardt, 1999), and most current EM investment tends to be in 'end-of-pipe' technologies i.e. a reactive approach (Vachon and Klassen, 2006b) as this means that production processes and products can remain unchanged.

Figure 6 illustrates the EM transition against the form of supply chain, and indicates that a proactive network of committed suppliers is required to achieve sustainability (New and Westbrook, 2004). Relationships are key to successful implementation of value-seeking strategies and symmetrical, strategic partnerships focus on long-term, mutually beneficial supply chain alliances with joint goals and knowledge exchange (Forman and Sogaard Jorgensen, 2004). This move away from purely transactional relationships produces a stronger and more proactive form of EM. The right Supply Chain Orientation (SCO) can be seen as antecedent to successful and integrated SCM, with a firm recognising the systemic and strategic implications of managing the numerous flows in the supply chain (Defee et al., 2009). This emphasises that firms applying a systems rather than traditional transactional approach are more likely to successfully address and achieve sustainability. SCO also represents a means for firms to compete through the creation of distinctive supply chain capabilities (Mentzer et al., 2001).
Vachon and Klassen (2006) recognise the dichotomy of pollution control (reactive) vs. pollution prevention (proactive), and apply a third category of management systems. Manufacturing organisations have a direct impact on the natural environment through production processes and product design (Vachon and Klassen, 2006b) and environmental performance therefore needs to be integrated into operational performance. Environmental Management Systems (EMS) such as ISO14001 support supply chain environmental decisions (Handfield et al., 2005) and provide the means to measure and certify environmental performance (New and Westbrook, 2004).

Environmental Management Systems consist of a collection of internal policies, assessments, plans and implementation actions affecting the entire organisation and its relationships with the natural environment (Darnall et al., 2008) and are intended to help firms embed environmental practices into their operational frameworks. ISO 14001 is a voluntary initiative that offers the means to certify an EMS, but it tends to be larger firms that are accredited to this standard (Preuss, 2005b). Regulations can offer economic incentives for sustainable behaviour (Min and Galle, 1997), but governments often impose environmental standards at the lower boundary of customers’ expectations (Vachon and Klassen, 2006b).
Environmental Management Systems are often limited to organisational boundaries rather than greening the entire supply chain, and firms can market themselves as being environmentally proactive simply by having an EMS (Darnall et al., 2008). An EMS can provide the means to measure environmental performance (New and Westbrook, 2004) and allow external stakeholders to verify whether environmental improvements actually occur at firm and supply chain level (Darnall et al., 2008). However the literature largely considers compliance as a sub-optimal approach (Preuss, 2005b), with attainment of regulated standards easily determined, while lifecycle oriented approaches require more unstructured and non-routine processes than are generally the norm (Sharfman et al., 2009).

There has been a tangible shift to firms focusing on their core competences and outsourcing non-core activities to suppliers (Darnall et al., 2008), further increasing the complexity of the supply chain. Strong, cooperative and long-term relationships between firms and their suppliers is key (Preuss, 2005b, Power, 2005), and Carter and Ellram (1998) propose that the greater the level of vertical integration between suppliers and buyer the greater the adoption of new technologies and processes. This includes environmentally driven activities such as Design for the Environment (DfE), Reverse Logistics (RL) and a range of recycling approaches (Carter and Ellram, 1998), and reflects the role that the form of supplier relationship has on the extent to which such practices can be achieved (Preuss, 2005a).

**Design for the Environment**

Design for the Environment (DfE) represents both new product design and development and new process design and development (Tsoufas and Pappis, 2006). It provides an avenue for the manufacturing company to address the natural environment (Preuss, 2005b), and to design and develop recoverable products which are durable, repeatedly usable, harmlessly recoverable and environmentally compatible in disposal (Tsoufas and Pappis, 2006). Environmental innovation can be realised as a new product, process or technology which reduces environmental impact (Hall, 2001).
There needs to be some form of inter-firm innovation otherwise the focal firm acts only as regulator (Hall, 2001), which further emphasises the importance of supplier relationships as this type of approach depends on availability of materials and the technical capability of the supply chain (Preuss, 2005b). Strong relationships are also required between engineering and operations to provide earlier and better opportunities to minimise the impact of products and processes (Angell and Klassen, 1999).

9 papers referred to DfE (see Table 8) with Life Cycle Analysis (LCA) recognised as a planning tool that contributed to this practice, and the majority of the reviewed literature discussed DfE in relation to the physical product. A number of difficulties were associated with DfE, namely designers’ unfamiliarity with the process and its lack of integration with other design tools (Albino et al., 2009), which in turn lead to issues in coordinating the process with manufacturing. It was seen as an emerging tool, which requires refinement to be effective and none of the papers explicitly dealt with how DfE can be used in practice.

Further recognised dimensions of integrating environmental concern include Design for Recycling (DfR) and Design for Disassembly (DfD) (Gupta, 1995). These approaches are complementary allowing for more efficient and profitable reuse/disposal of product components, and can extend to designing for easier remanufacturing and reuse of a whole product. However these tools were significantly underrepresented in the literature with 1 reference made to DfR (Gupta, 1995) and 1 paper discussing the features of DfD (Sarkis, 2001).

**Product Stewardship**

Product stewardship is representative of the cradle to grave (or cradle) responsibility for the lifecycle of a product (Angell and Klassen, 1999). It is focused on ‘product-based green supply’ (Seuring, 2008b) and is therefore linked to DfE, which draws on data to design products with a reduced impact in the environment (Angell and Klassen, 1999). The goal is to keep all materials within the lifecycle and therefore minimise any flow into the external environment (Sarkis, 1995).
The principle of product stewardship is to extend the environmental perspective to the entire value chain to include other internal and external stakeholders such as R&D, designers and suppliers (Rusinko, 2007). Examples include redesigning products and processes, using renewable resources and working with suppliers to prevent pollution (Rusinko, 2007). The key advantage to be gained from this approach is competitive pre-emption through establishing a reputation as a ‘green’ company (Hart, 1995).

Product stewardship was better represented in the literature than other components of Environmental Management (EM) with 23 papers (see Table 8) referring to this principle, perhaps due to the opportunities it offers in different supply chain areas rather than just the design stage. 8 of these papers recognised product stewardship as a component of Green Supply Chain Management (GSCM) or EM and discussed it in relation to other green supply chain practices, and 4 papers (Angell and Klassen, 1999, Hall, 2000, Kleindorfer, 2005, Sarkis, 2001) explicitly referred to this principle as a key factor in closed loop supply chains.

Only 4 of the 23 papers (Albino et al., 2009, Darnall, 2008, Hart, 1995, Sarkis, 2001) discussed product stewardship in any detail and there was an emphasis on its strategic role and the benefits it can provide, as well as recognition for the need to integrate LCA. 1 paper provided industry examples of product stewardship and a diagnostic tool, while Hart (1995) tested a series of hypotheses to produce suggestions for how to successfully build this approach into operational strategies.

**Green Purchasing**

Purchasing is at the beginning of the supply chain and therefore environmental goals need to be integrated with its activities (Min and Galle, 1997). Addressing the purchasing function represents ‘greening the supply process’ (Seuring, 2008b) and its strategic importance and scale of impact on the supply chain make it an important focus for Environmental Management (Preuss, 2005b). Buyers are in the position to stipulate minimum standards for a
raw material or component or even encourage changes in a supplier’s processes (Preuss, 2005b, Pun, 2006) to address environmental issues.

Purchasing is considered to have the most potential to address sustainability because it is grounded in non-altruistic market principles (Hall, 2000) i.e. innovating SCM and purchasing in the context of the environment makes good business sense and is more readily practicable than other approaches. 24 of the reviewed papers (see Table 8) discussed green purchasing to different extents and recognised authors in this field are Zhu and Sarkis. In their 5 reviewed papers they position purchasing as one of a series of Green Supply Chain Management (GSCM) practices and the literature as a whole saw green purchasing as a growing practice (Zhu and Sarkis, 2004, Zhu, 2008, Zhu et al., 2005, Zhu and Sarkis, 2007, Zhu and Sarkis, 2006). Zhu and Sarkis’ research is quantitative, testing propositions and statistically analysing green purchasing practice in different industries and countries. This suggests that this area is currently more developed than some other aspects of environmental sustainability, perhaps because of its focus on a single process/function.

Purchasing decisions can impact the green supply chain through the purchase of materials that are either recyclable or reusable, or have already been recycled (Sarkis, 2003). Vachon (2007) defines environmental or green purchasing as the involvement of this function in Life Cycle Analysis (LCA), Design for Disassembly (DfD), and Design for the Environment (DfE). These pollution prevention activities are linked positively to vertical coordination, measured by the degree of partnership with the suppliers in environment-related projects.

However, suppliers do not always see customers integrating their environmental expectations or policies into purchasing decisions (Lippman, 2001) and the conventional factors of cost, quality and delivery can still dominate a buyer’s assessment of suppliers (Preuss, 2005b). Spekman et al’s (1998) study of supply chain relationships revealed that while buyers are aware of the benefits of integration their decisions are dominated by more traditional purchasing metrics related to cost. Buyers consistently view the cost-saving aspects as more
important than the revenue enhancing benefits and many also have a misconception that it is expensive to initiate and implement green purchasing (Min and Galle, 1997).

Different purchasing practices may also occur at different stages of the supply chain. For example raw materials may receive more environmental emphasis while other aspects are less involved (Preuss, 2005b). This emphasises the importance of the buyer-supplier relationship and that the sourcing function needs to develop strategies that go beyond the traditional goals of delivering maximum efficiency or achieving lowest materials cost (Handfield et al., 2005). It needs to become an environmental sourcing strategy which integrates environmental issues with supply base and purchasing activities (Handfield et al., 2005).

The role of strategic purchasing is to direct activities towards opportunities that will enable a firm to achieve its long-term goals (Carr and Smeltzer, 1999) and achieve an optimal purchasing strategy in a supply network environment (Svahn and Westerlund, 2009). In addition it emphasises the importance of building relationships with suppliers and can be positively linked to greening the supply process (Gold et al., 2009). 50% of the 24 papers emphasised the importance of green purchasing as a means to meet the strategic needs of an organisation and discussed the benefits, barriers and drivers for this practice.

Reverse Logistics

Traditional logistics manages the supply of goods from the producer to the end consumer (Lippman, 2001), while RL relates to products returned by the customer to the focal firm. It has the purpose of recovering and potentially generating value (Blumberg, 2005) or properly disposing of these products (Lippman, 2001), and increasingly requires as much focus as forward chain processes (Crandall, 2006). It is a ‘process whereby companies can become more environmentally efficient through recycling, reusing and reducing the amount of materials used’ (Carter and Ellram, 1998, p.85).

The typical industry practice of disposal of parts, materials and assemblies can represent a major cost contributor (Blumberg, 2005), while RL provides the maximum utilisation of used
products, where every output is returned to natural systems or becomes an input for manufacturing another product (Tsoulfas and Pappis, 2006). Products, parts, subassemblies and materials represent growing values and economic opportunities at the end of the direct supply chain (Blumberg, 2005), and the holistic nature of reverse distribution actively aims to reduce materials/resources in the forward system so that fewer materials flow back, reuse is possible and recycling facilitated (Carter and Ellram, 1998).

Material does not necessarily flow back through the same forward supply chain members and reverse supply chains are often designed separately from forward supply chains. Therefore choosing to implement some form of RL or recycling will have an impact on the supply chain structure, relationships and strategy (Field and Sroufe, 2007).

The 25 papers that featured RL (see Table 8) discussed it in terms of existing practices and processes and were largely descriptive in nature, outlining key issues and strategic benefits. There were 4 literature reviews of the field, with 1 specifically focused on RL rather than the broader field of Green Supply Chain Management (GSCM) (Carter and Ellram, 1998). 12 papers positioned RL as a key part of green supply chain practice/GSCM with 8 recognising its intrinsic role in closed loop supply chains (Zhu et al., 2005, Pagell and Wu, 2009, Pullman et al., 2009, Gladwin et al., 1995, Defee et al., 2009, Mondragon and Lalwani, 2011, Dao et al., 2011, Sarkis, 2003) and 4 linking its practice to remanufacturing and waste management (Handfield et al., 2002, Kleindorfer, 2005, Srivastava, 2007, Vachon and Klassen, 2006a).

**Recycling, Reuse and Remanufacturing**

RL begins when a customer returns the product and the company has recovered the maximum value (Kleindorfer et al., 2005). Products can be returned for a number of reasons and this affects what use can be made of them. Convenience returns are those where customers return an unwanted product, which can either be re-sold or used to replace products returned under warranty; later in the lifecycle product returns can be remanufactured and remarkedeted through secondary channels and at the end of the lifecycle used as a source of spare parts
The minimal treatment of a material is more closely associated with product reuse, while a material that requires a large amount is more associated with recycling (Sarkis, 1995).

Waste products and emissions can be recycled as a raw material for use in the same or different production process; processed to be reused; and used for a different useful application. Reclaimed material can also be sold to another company (Gupta, 1995). The recycling of manufactured products has a number of categories which include the recycled product retaining all the properties of the original; recycling of wastes into alternative products and the processing of recycled material into products where all properties of the original product are lost (Sarkis, 1995). The first category is more representative of product reuse, and to provide more specificity recycling denotes material recovery without conserving any of the original product’s features (Field and Sroufe, 2007).

Recycling requires the disassembly of the waste or returned product, separation of parts and then material reprocessing, while remanufacturing replaces worn, broken or obsolete parts from a product, with the aim of returning it to new or better than new condition (Pun, 2006). Both can benefit firms economically as manufacturing costs will be lower than if using ‘virgin’ materials, and as negative environmental consequences are generally higher for the initial processing of virgin material regulations and associated costs are much higher (Field and Sroufe, 2007). Remanufacturing is facilitated by modular design which feeds into the development of green and sustainable products (Kleindorfer et al., 2005). Modular design and easy disassembly also facilitate disposal (Kleindorfer et al., 2005) as it makes it more economical to remove any toxic material and send the rest to landfill. This is important in relation to waste reduction as material reuse, reduced energy consumption and landfill contributions all minimise a firm’s environmental impact (Defee et al., 2009). Of the different approaches outlined recycling was the most strongly represented in the reviewed literature featuring in 53 separate papers, followed by reuse (23 papers) and then remanufacturing (16 papers), as illustrated in Table 8.
Closed Loop Supply

Forward and reverse supply chains form a ‘closed loop’ when managed in a coordinated way and can foster sustainability (Kleindorfer et al., 2005). Closed loop supply chains (CLSC) enable the ‘cradle-to-cradle’ approach by taking back products from customers and recovering added value by reusing the products and/or their components (Guide Jr and Van Wassenhove, 2009). They are characterised by the firm’s active involvement in the recovery process in order to extend a product’s life or manage final disposal (Klassen and Johnson in New and Westbrook, 2004). The key goal is to keep all materials within the lifecycle and minimise any flow into the external environment (Sarkis, 1995), as illustrated in Figure 7. The concept of CLSC is of key importance in addressing the major environmental concern of waste and hazardous materials/processes, as well as generating economic value through extending product life and the reuse/recycling of products (Blumberg, 2005).

Waste minimisation and recycling imperatives have placed greater emphasis on product lifecycle approaches (Stokes, 2009). Closed loop concepts and Life Cycle Analysis (LCA) provide an appropriate focus for environmental sustainability research as they apply a more connected and holistic view of supply chains, especially as these approaches have been underexplored to date. A key way to improve sustainability in its true holistic context is to lengthen the life of materials and products. The recycling and reuse of materials can generate additional revenue streams while also reducing the level and cost of waste disposal (Sarkis et al., 2010a).

Figure 7: Closed Loop Supply Chain (Sarkis, 1995)
Life Cycle Analysis (LCA) is a means to evaluate environmental impacts at every supply chain stage, but only 3 of the reviewed papers (Kjaerheim, 2005, Seuring, 2004, Seuring, 2004) dealt with this more holistic approach. The environmental effects of a product during its lifecycle can be integrally assessed, but there are questions in the literature over its usefulness, representativeness and legitimacy, which Hagelaar and van der Vorst (2001) try to explicitly address. To truly gain from LCA strong supply chain partnerships are needed (Kjaerheim, 2005), but despite SCM’s expected emphasis on relationships the literature focuses more on the ‘greening’ of specific supply chain processes. This may explain the current lack of LCA literature, highlighting this as a potential gap as well as a need for a more holistic, relational view to be applied to Sustainable Supply Chain Management (SSCM) research.

The above are all manufacturing and operations oriented examples of pollution prevention (Rusinko, 2007), which is formally defined by the Environmental Protection Agency (EPA) as the use of materials, processes or practices that reduce or eliminate the creation of wastes or pollutants at the source (Klassen, 2000). SCM offers the opportunity for joint approaches to pollution prevention, with mutually dependent relationships between customers and suppliers allowing innovative approaches to waste reduction and product reuse, and improved environmental performance across the supply chain (Florida, 1996). Strong, well established and long term relationships are therefore key to successfully achieving Environmental Management, however this prevailing metaphor of ‘greening’ in business needs to shift to the holistic nature of sustainability, which concerns the social aspect as much as production and consumption (Preuss, 2005a).

The Social Dimension

The environmental dimension was substantially represented in the reviewed literature (see Table 9) with the processes and practices within Green Supply Chain Management (GSCM) providing the key focus. While the Brundtland definition specifies both environmental and social sustainability, SCM literature specific to the latter dimension was more limited. Unlike
the ‘green’ dimension which had many supply chain related terms there was no equivalent use of the social element e.g. social supply chains, Social Management Systems etc. despite the fact the ‘human’ element in terms of labour, skills and the forming of relationships should represent a key element of SSCM.

The social dimension of sustainability also incorporates the improvement of education standards, and cultural diversity (Sarkis et al., 2010a) through maintaining the cultural and ethical norms of the societies in which firms operate (Tate et al., 2010). Organisations can therefore positively contribute to both their own communities and those they can interact with via their suppliers (Dyllick and Hockerts, 2002).

Given the ‘human’ nature of this dimension of sustainability the research methods used in the reviewed papers were understandably biased towards qualitative data collection. Case studies were the dominant research method followed by review and discussion of the literature in the field. The literature broke down into the 3 key themes of defining/understanding the social dimension, how it is practised and how it should be integrated to achieve ‘true’ sustainability and are discussed in the following sections.

Definitions and Components of Social Sustainability

While there was no single definition of social sustainability used in the reviewed literature it was recognised that profit is only one element in the long-term success of companies, and the future of people (internal and external) and the planet are new legitimacy concerns (Kleindorfer et al., 2005). Sustainability should be an ethical code for human survival and progress (Sharma and Ruud, 2003) and achieved in ‘an inclusive, connected, equitable, prudent and secure manner’ (Gladwin et al., 1995, p.878). The first 3 elements of this definition link strongly with the social dimension (Schaefer, 2004) and how it can be enacted through supply chains by reducing unemployment, protecting employee health and safety, ensuring equal treatment and preventing social exclusion (Leire and Mont, 2010).
Social sustainability can be formed into the 4 main categories of Internal Human Resources, which includes practices related to employment stability and Health and Safety; External Population which encompasses human, productive and community capital; Stakeholder Participation which includes information provision and stakeholder influence issues; and Macro Social Performance Issues of socio-economic and socio-environmental performance (Labuschagne et al. in (Sarkis et al., 2010a)). Pojasek (2010) further specifies the following 7 principles of social sustainability, which are integral to a new ISO 26000 standard for Social Responsibility; accountability, transparency, ethical behaviour, respect for stakeholder interests, respect for the rule of the law, respect for international norms of behaviour and respect for human rights.

Social equity is a key component of social sustainability and requires that all members of society have equal access to resources and opportunities (Bansal, 2005), extending to the fair and equitable treatment of employees (Krause et al., 2009). It is concerned with poverty, injustice and human rights, and from a supply chain perspective considers the welfare of all employees globally (Krause et al., 2009). Socially, Supply Chain Management (SCM) is expected to enforce a firm’s values and standards with its suppliers (Tate et al., 2010) and emphasises the importance of long-term relationships, communication and supplier development (Leire and Mont, 2010). 12 papers referred to the issue of social equity (see Table 8), but only 4 dealt with it in any detail and only 1 used it as its research focus (Bansal, 2005), so while there may be an expectation for SCM to address this important component there is limited academic evidence to support this.

While environmental sustainability emphasises the management of natural resources, social sustainability is concerned with the management of social resources, including people’s skills and abilities, institutions, relationships and social values (Sarkis et al., 2010a). At the business level this requires companies and their suppliers to add value by increasing the human capital of individuals, and the societal capital of communities (Dyllick and Hockerts, 2002).
As a consequence social sustainability is strongly linked to Corporate Social Responsibility (CSR) which comprises actions not required by law, but furthering social good, beyond the explicit, transactional interests of a firm (Sarkis et al., 2010a). CSR requires firms to embrace economic, legal, ethical and discretionary expectations of stakeholders (Bansal, 2005), with the understanding that avoidance of a firm’s social responsibility will lead to the erosion of social power (Davis, 1967). It involves several processes, including social issues management which is the process of addressing social concerns such as child labour (Bansal, 2005).

**Corporate Social Responsibility**

Society and business are interdependent and Corporate Social Responsibility (CSR) represents how firms satisfy the needs of society and the environment while meeting their economic goals (Campbell, 2007), and comprises the 4 dimensions of economic, legal, ethical and philanthropic (Defee et al., 2009). A simple definition of CSR is of sacrificing profits in the social interest (Reinhardt et al., 2008), which aligns with the idea that the 3 dimensions of economy, environment and society need to be balanced and therefore reduced profits may be a necessary condition or compromise for addressing the other 2 dimensions. This definition also links with stakeholder theory where the ‘progressive view’ recognizes that firms have a responsibility to a wide range of stakeholders and society at large.

The process of economic survival of the fittest suggests that firms that engage in unsustainable CSR may find themselves being pushed out of business and the forces of globalisation will only increase this pressure. The finding that there is little relationship between CSR and profitability is consistent with a market equilibrium in which firms invest in socially responsible projects until the marginal returns decline to the overall market rate of return. In this situation, investing in CSR is not profitable in the sense that it does not generate economic rents, but neither is it a losing proposition; instead it means that for most firms, CSR ‘pays for itself’ (Reinhardt et al., 2008).
In the supply chain context effective Supply Chain Management requires greater strategic elevation of CSR in order to facilitate coordination across purchasing, manufacturing, distribution and marketing functions. To this end, Handfield et al. (2005) suggest that firms with a formal system to monitor and report on CSR issues in their supply chain will enjoy performance advantages and greater commitment from internal and external stakeholders (Keating et al., 2008); closed-loop supply chains may also provide firms with a means to leverage CSR (Defee et al., 2009).

Organisational identity influences how stakeholders within the firm, such as employees view the purpose of the firm, what it stands for, and its future goals while organisational self-monitoring affects how an organisation interacts with outside stakeholders (Reinhardt et al., 2008). However, translating social principles into practice presents key challenges: for example even when they recognise the relevance of CSR, many purchasing managers do not know how to concretely and systematically include social issues into purchasing decisions (Maignan et al., 2002).

Of the 27 papers which explicitly discussed the social dimension (see Table 8) 30% dealt with CSR, and the majority came from the British Journal of Management and Business Strategy and the Environment. 3 of these papers positioned CSR specifically within the context of SCM (Andersen, 2009, Hutchins, 2008, Tate, 2010), and the research methods used were evenly balanced across case studies, modelling, reviews and theory development. This suggests that CSR is a more well developed field - as a concept it has been in existence since the 1960s (Dyllick and Hockerts, 2002) – and it has received an increased interest and profile in the last decade. Its relevance to and overlap with social sustainability makes CSR a possible means to develop this field of research further.

**Social Sustainability Practice**

In contrast to the range of processes and practices discussed within the environmental dimension there were only a few explicitly defined social practices in the reviewed papers and
many of these practices have associated certifications and accreditations e.g. Fairtrade. Social sustainability certifications and standards were discussed in over 30% of the papers that were related to the social dimension.

Fair and equitable treatment within supply chains (Svensson, 2009) is largely addressed through campaigns and standards applied by Non Governmental Organisations (NGOs). The International Trade Union Confederation (ITUC) promotes and defends workers’ rights and interests, to include equality and non-discrimination through international cooperation between trade unions, global campaigning and advocacy within major global institutions (www.ituc-csi.org). The International Labour Organisation (ILO) has a set of principles, which include the aspects of human rights, child and forced labour, employment, wages and training (Leire and Mont, 2010). Certification through such bodies is seen as one of the few areas in research literature where social issues such as child labour and unsafe working conditions are addressed explicitly (Pagell and Wu, 2009) and can be used to establish a set of social criteria to be applied to the supply chain, with suppliers monitored to ensure compliance (Leire and Mont, 2010).

Fairtrade is a well-developed social practice that as well as seeking fairer relationships with suppliers, aims to establish more direct relationships between groups of producers and consumers (Barratt Brown, 1993). It provides an alternative model of international trade based on better trading conditions and price, as well as educating consumers about the negative effects of traditional trade (Davies and Crane, 2010). It has the underlying ‘people’ principles of good working standards and conditions for workers at all stages of the supply chain, but also acknowledges the need to preserve resources, assess environmental impacts and cooperate where resources are trans-boundary (Strong, 1997). It epitomises a long-term partnership approach and therefore represents a tangible mechanism for achieving sustainable development within supply chains (Strong, 1997). 13 of the papers (see Table 8) that dealt with the social dimension discussed Fairtrade, with 3 using it as their research focus (Davies and Crane, 2010, Goworek, 2011, Strong, 1997).
Socially Responsible Purchasing (SRP) can be defined as the inclusion in purchasing of social issues advocated by organisational stakeholders (Maignan et al., 2002) and the utilisation of purchasing power to acquire products that have a positive social impact (Drumwright, 1994). SRP aligns with the principles of ‘green’ purchasing, however, the latter is currently more developed in both research and practice (Leire and Mont, 2010). This was evidenced by just 6 papers (see Table 8) referring to the practice in comparison to 26 in green purchasing, and only 2 of these focused specifically on this aspect of the social dimension (Carter and Jennings, 2002, Leire, 2010) with the latter providing a process model for implementing and maintaining SRP.

SRP attempts to bring about positive social change through its purchasing behaviour (Drumwright, 1994) and can address a range of issues, mainly human rights, safety, diversity and community (Leire and Mont, 2010), which all represent non-economic buying criteria (Drumwright, 1994). The purchasing-related issues that tend to dominate as advocated by stakeholders are the respect of human and worker rights, respect of local democratic institutions and the use of minority suppliers (Maignan et al., 2002). However, while they recognize their relevance many purchasing managers do not know how to concretely and systematically integrate social issues into purchasing decisions (Maignan et al., 2002).

**Integration of Social Sustainability**

The ‘people’ element of ‘people, profit, planet’ (Pullman et al., 2009) can align sustainability goals with employees and community pressure for firms to improve environmental performance (Kleindorfer et al., 2005). Product stewardship which featured heavily within the review of the environmental dimension can have the benefit of training employees in sustainability (Rusinko, 2007), and products can be considered socially responsible on a number of dimensions including what they are made from, where they come from or who supplies them (Drumwright, 1994). Reverse Logistics (RL), through its promotion of recycling, reuse and resource conservation, addresses various aspects of social sustainability and could
provide a means for promoting socially responsible behaviour in supply chains (Sarkis et al., 2010a).

These implied overlaps between environmental and social sustainability practices and the close alignment of SRP with green purchasing highlighted above hints at some of the potential for interaction between these two important dimensions of sustainability. However such references were limited in the reviewed literature, and while they indicated that environmentally motivated behaviour could inform and potentially synergise with social sustainability there was no explicit discussion on how this could be achieved at key areas of the supply chain e.g. manufacturing where social issues are typically of greater importance.

An appreciation of the ‘local’ level of sustainability extends to achieving balanced social development within local eco-systems. It requires the integration of a firm’s environmental and social efforts in cooperation with suppliers and other social actors to create regional and local sustainability (Schaefer, 2004). This emphasises the role of relationships and communication within supply chains, as well as acknowledging the impact of external stakeholders (Maignan et al., 2002). It could take the form of integrating environmental and social policies, which would apply across the supply chain, and result in joint environmental and social reports to communicate progress to stakeholders (Schaefer, 2004).

The supply management function is of key importance for building strong, long-term relationships with suppliers (Spekman et al., 1998) and also plays an important role in the creation of social capital. Social capital comprises of human capital in terms of people’s skills, motivation and loyalty, and societal capital which includes education and culture (Dyllick and Hockerts, 2002). The relational embeddedness of social capital derived through on-going interactions with suppliers could be a critical antecedent to firm performance (Bernardes, 2010). Sustainable supply chains invest in human capital, for example through HR practices, which seek to improve employee well-being and commitment and build a culture that values people and the environment (Pagell and Wu, 2009).
11 of the reviewed papers (see Table 8) referred to social capital with just 3 discussing this component of social sustainability in any detail (Bernardes, 2010, Dyllick, 2002, McElroy, 2007). It is seen as one of three different types of capital, the others being economic and natural capital (Dyllick and Hockerts, 2002) which align with the 3 recognised dimensions of sustainability. However while there appears to be an understanding in the literature as to what social capital is there was limited explanation of how to address it in practice and only 1 of the papers discussed social capital in relation to supply chains and relationships (Bernardes, 2010).

**Conclusion**

Chapters 3 and 4 indicate that SCM and sustainability are evolving fields of research, evidenced by the lack of any universally accepted definition for either. This extended to the components of each field, especially in relation to the environment where a multitude of terms were used to describe identical or similar concepts/practices e.g. Green Supply Chain Management (GSCM) and Environmental Supply Chain Management (ESCM). Sustainable Supply Chain Management (SSCM), which incorporates both social and environmental sustainability into supply chain practice and management, is the newest field of all with the reviewed literature commencing in 2003. While only 14 papers dealt explicitly with SSCM it is clear that this is a key area for future research and has the potential to encapsulate and consolidate the environmental and social supply chain literature, and provide an integrated approach to sustainability.

The qualitative and theory developing nature of the research to date emphasises how these research fields are at an early stage, with case studies and qualitative surveys/questionnaires forming the primary methods of data collection. While practice, and especially environmental practices are discussed heavily in the reviewed literature there are few explicit practical outputs from the research, such as models or tools that would indicate a more mature field. The dynamic and complex nature of SSCM strongly supports inductive methodologies, but it is also a highly practical discipline; while most of the reviewed research methods study ‘real
world’ supply chains, it is a field where research explicitly needs to inform practical outputs, and this should extend beyond the current research bias towards large organisations to include SMEs (Curran and Blackburn, 2001).

The identified research bias towards ‘hard’ quantifiable supply chain practices and processes suggests that there is uncertainty on how to address the more holistic aspects of SCM and sustainability, and yet these are considered key to achieving a fully integrated approach in SSCM. The relationship element of SSCM and its potential impact on sustainability is underexplored in the reviewed literature, but could hold the key to moving beyond the current reactive approach (Vachon and Klassen, 2006b) and join isolated processes into a ‘closed loop’. There was limited research on how supply chain relationships can be harnessed to achieve sustainability, especially within the environmental domain. While social sustainability literature was more limited greater reference was made to relationships, perhaps due to the more ‘human’ focused nature of this field.

The relative wealth of literature on ‘green’ supply chains (Table 8) indicates the extent to which the environmental dimension has been incorporated into SCM research to date. There is recognition that firms have made strong progress in the environmental dimension of sustainability (Krause et al., 2009, Sarkis et al., 2010a) and the review has illustrated a range of environmental practices within supply chains. However, significant development in societal and cultural issues is considered lacking (Krause et al., 2009) and research literature to date has been limited in the social component of sustainability (Pagell and Wu, 2009, Schaefer, 2004, Sharma and Ruud, 2003).

This oversight may be because the social elements of sustainability are particularly difficult to attain or less tangible/measurable than environmental sustainability, or they may not even represent an appropriate goal for business (Schaefer, 2004, Lamming and Hampson, 1996). Sharma and Ruud (2003) also suggest that addressing the social dimension and achieving ‘true’ sustainability is only possible in supply chains that operate within definable geographic regions.
and are not ‘globally fragmented’, therefore challenging the role that SCM can play in achieving social sustainability across the highly globalised supply chains that currently dominate in practice.

The literature agrees that a supply chain’s performance should be measured not just by profits, but also by its impact on environmental and social systems (Pagell and Wu, 2009). If a sustainable supply chain is one that performs well across all 3 dimensions then SSCM needs to represent the actions taken to achieve this goal (Pagell and Wu, 2009) and involve the inter-connection and interaction between components and interfaces across supply chains (Svensson, 2007). While the relatively small body of explicit SSCM literature recognises the 3 dimensions there is limited research into how they can be integrated in practice. The SSCM framework developed by Carter and Rogers (2008) (Figure 4) is intended to operationalise the 3BL concept, and it forms a focus of the thesis as a mechanism for understanding the balance between economic, environmental and social performance in the supply chain context.

**Current Status of SSCM Research**

The review of sustainability and supply chain literature was conducted on articles between the years 1983 and 2011, and as illustrated by Figure 3 there has been growing interest and research in the field of SSCM during that period. Since the literature review was completed in the early stages of the thesis it was considered appropriate to replicate the process for papers published since the start of 2012 to gain a view of how SSCM research has continued to develop. The same keywords were employed to search the same set of databases, and the same review process applied; as a result 34 new relevant articles were identified for structured review.

This process revealed continued growth in the sustainability and supply chain management related literature, with 18 papers published in 2012 and 16 in 2013; 13 of these were explicitly related to SSCM and/or sustainable supply chains and 8 additional papers covered the field of GSCM or green/environmental supply chain practices (Caniels et al., 2013, Colicchia, 2013, Bell
et al., 2013, Green et al., 2012, Golicic and Smith, 2013, Shi et al., 2012, Abbasi and Nilsson, 2012, Hajmohammad et al., 2013). This maintains the environmental and practice-based bias identified in the original literature review and the social dimension is still significantly underrepresented in SSCM research (Winter and Knemeyer, 2013, Goebel et al., 2012, Gimenez and Tachizawa, 2012, Miemczyk et al., 2012, Morali and Searcy, 2013) and the management of social issues in supply chain practice underdeveloped (Klassen and Vereecke, 2012, Seuring, 2013). Only 1 new article explicitly addressed social responsibility in supply chains (Hoejmose et al., 2013).

The other dominant theme within the recent literature was sustainable procurement and sourcing, with a total of 8 papers across 2012 and 2013 (Schneider and Wallenburg, 2012, Crespin-Mazet, 2012, Goebel et al., 2012, Miemczyk et al., 2012, Chicksand et al., 2012, Caniels et al., 2013, Adebajo et al., 2013, Hoejmose and Adrien-Kirby, 2012), and there were 7 literature reviews, all but 1 of which (Hoejmose and Adrien-Kirby, 2012) were systematic (Igarashi et al., 2013, Hassini, 2012, Gimenez and Tachizawa, 2012, Miemczyk et al., 2012, Abbasi and Nilsson, 2012, Ahi and Searcy, 2013); this indicates a continued need to understand the field and builds on the structured literature review paper developed from this thesis and published in Supply Chain Management: An International Journal (SCMIJ). The paper was cited by a number of the reviewed journal articles, and SCMIJ was the most featured journal, providing 9 of the 32 reviewed articles.

The current SSCM literature covers a wide and diverse range of topics, which illustrates the dynamic nature of the field and the continued need for structured reviews to understand how it is developing; however it is still recognised that the majority of SSCM research focuses on individual aspects of sustainability in the supply chain context rather than examining the multiple performance dimensions concurrently, and highlights the need for a more holistic approach (Winter and Knemeyer, 2013, Goebel et al., 2012), and that environmental and social issues do not just affect the focal firm, but the whole supply chain (Cruz, 2013).
There is recognition in the literature that the current SSCM framework emphasises economic performance and if an environmental or social practice has a negative impact on the economic bottom line it is not sustainable, and there is an implicit acceptance in the SSCM literature that profits are still the key measure of supply chain performance (Pagell and Shevchenko, 2014). No true sustainable supply chain exists to date, rather some are just more sustainable than others (Beske, 2012), and the role of supply chain relationships was acknowledged together with a need for more research on relationships and collaboration, rather than practices (Caniels et al., 2013, Colicchia, 2013, Seuring and Gold, 2013). This also reflects a growing interest in understanding SSCM through network approaches (Tate et al., 2013).

There is continued emphasis on Multi National Corporations (MNCs) (Gold et al., 2013) and large organisations in SSCM research, (Morali and Searcy, 2013, Carbone, 2012), in terms of practices and examples of the impact of poor supplier performance e.g. the Mattel product recall due to suppliers using lead-based materials (Gimenez and Tachizawa, 2012, Carbone et al., 2012). Industry specific research and more understanding of the role of firm size and characteristics in sustainability practices (Hassini et al., 2012) is required, and there is an acknowledged research gap in understanding sustainability and SSCM from an SME perspective (Walker and Jones, 2012). As they make up 99% of companies worldwide (Curran and Blackburn, 2001) SMEs could make a significant contribution to SSCM research; as a consequence of the gap identified through the review of sustainability and supply chain literature a review of SME literature was undertaken, and the research focus applied specifically to the SME context.
Chapter 5: Review of SME Literature

Introduction

The review of sustainability and SCM literature indicated an emphasis on the use of case studies as a research method (Winter and Knemeyer, 2013), reflecting the developing nature of the field. Where research focused on sustainability practice in business and industry, there was a bias towards the study of larger organisations (Gimenez and Tachizawa, 2012, Carbone et al., 2012, Morali and Searcy, 2013). Academic research exhibits a tendency to focus on the Large Enterprise (LE) (Curran and Blackburn, 2001) and to date most sustainability research has focused on large organisations with more limited explicit discussion of SMEs (Kusyk and Lozano, 2007, Friedman and Miles, 2002). This results in part from the conventional logic that suggests large organisations are the heart of the economy (Davies and Crane, 2010) and yet SMEs account for over 95% of private sector firms in most industrialised economies, and in the UK specifically represent over 99% of business, employing 57% of jobs within the private sector (Curran and Blackburn, 2001).

As the small business sector continues to grow in importance it is more necessary to examine its role in an economic, social and environmental framework; the supporting evidence from the preceding reviews indicated that this was a key research gap and prompted the review of current SME literature and its relationship with the identified sustainability and supply chain themes. The interests of small businesses and society as a whole do not always coincide; time is needed for researchers to make theoretical as well as empirical contributions to the SME research field and for characteristics to be identified that distinguish SMEs and large firms and how they operate (Storey, 1999).

Characteristics of UK SMEs

SMEs are not merely small versions of business (Kechiche and Soparnot, 2012) and should not be treated as ‘shrunken down’ large firms (Battisti and Perry, 2011). In the UK, definitions for SMEs refer to firms having either a turnover of not more than £40 million or an average
number of employees of 250 or fewer; micro firms are defined as having less than 10 employees, small employing less than 50 people and medium fewer than 250 (EuropeanCommission, 2003). Within the UK SMEs provide 50% of turnover, with 99.3% of SMEs having fewer than 50 employees and 75% less than 10 (Howarth and Fredericks, 2012).

The economic impact of UK SMEs has grown since the 1970s due to a move from manufacturing to service industries and structural changes in organisations, downsizing and other supply chain based reasons (Howarth and Fredericks, 2012).

A key difficulty in researching SMEs is the complexity of the definition beyond these quantifiable employee numbers or turnover. SMEs are not an homogenous group (Curran and Blackburn, 2001, Jenkins, 2004) and the SME sector is diverse and heterogeneous (Hillary, 2003), but there are consistent characteristics identified within the literature with regards to firm size, organisational structure and management, and resource availability/constraints. SMEs can be seen as social entities that revolve around personal relationships, are often short of cash, likely to operate in a single market, find it difficult to diversify risk and are vulnerable to loss of customers (Jenkins, 2004). They can be more driven by the beliefs, values and motivations of the people who run them and work in them (Kusyk and Lozano, 2007, Davies and Crane, 2010), and there is often a high degree of personal authority among staff along with management who are visible and involved in the company operations (Hudson Smith and Smith, 2007).

**Organisational Structure and Management**

The most common form of SME is owner-managed where ownership and control lie with the same person (Jenkins, 2006). As a result they can clearly reflect the personalities of the owner-manager (Storey, 2009-2010) and SME behaviour is often understood in terms of owner-manager characteristics. Understanding of a firm’s activities comes from sense making, based on dialogue and language after action; the sense that is made of a situation is based on the owner-manager’s own identity and what they identify with around them (Howarth and
Fredericks, 2012). Due to the high level of involvement of owner-managers in the firm’s operations many SMEs combine flat, loose, non-hierarchical organisational structures and informal operating practices; few management layers and a lack of bureaucracy can lead to employees developing a high degree of personal authority and ownership (Hudson Smith and Smith, 2007).

Figure 8 illustrates the key role played by the owner-manager and how their level of involvement and the organisational structure can change as the firm grows (Storey, 1999). From its initial development to the growth stage the owner-manager is more involved in the day-to-day running of the business, maintaining an entrepreneurial style, but moving from a role of direct supervision to one of coordination. As the firm expands in size, moving perhaps from a micro to a medium sized or even large enterprise, it tends to become more independently managed and formalised, and the style and identity of the owner-manager can have less of an influence.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Owner-manager Role</th>
<th>Management Style</th>
<th>Organisation Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inception</td>
<td>Direct supervision</td>
<td>Entrepreneurial,</td>
<td>Unstructured</td>
</tr>
<tr>
<td>Survival</td>
<td>Supervised supervision</td>
<td>Entrepreneurial,</td>
<td>Simple</td>
</tr>
<tr>
<td>Growth</td>
<td>Delegation/coordination</td>
<td>Entrepreneurial, coordinate</td>
<td>Functional, centralised</td>
</tr>
<tr>
<td>Expansion</td>
<td>Decentralisation</td>
<td>Professional, administrative</td>
<td>Functional, decentralised</td>
</tr>
<tr>
<td>Maturity</td>
<td>Decentralisation</td>
<td>Watchdog</td>
<td>Decentralised functional/product</td>
</tr>
</tbody>
</table>

*Figure 8: Owner-Manager Role in 5 Stages of SME Growth (Storey, 1999)*

In terms of day-to-day running and decision-making more emphasis tends to be placed on areas in the business that require immediate attention and owner-managers are forced to make more short term decisions with little strategic planning (Paik, 2011). Owner-managers pursue a variety of objectives, which include satisfactory flow of income, maintenance of ownership and job satisfaction (Storey, 1989); many do not run their businesses to maximise financial performance (Simpson et al., 2011), pursuing ‘profit-satisficing’ strategies that just enable them to stay in business (Fitjar, 2011). Consequently SME decision-making and behaviour is more readily affected by a ‘double bottom line’ (Howarth and Fredericks, 2012), that balances owner control and firm survival, as illustrated in Figure 9.
The SME business model recognises the role that owner-managers and their beliefs play in decision-making and the sense they make of their situation; they tend to have complete faith in their business idea and approach, and innovation is often a distinctive trait of owner-managers (Barrow, 1998). Figure 9 indicates there is a greater emphasis on stability and survival within SMEs than larger organisations, and even where owner-managers are more visionary in their approach they need to be convinced that any changes will not have a serious impact on their business approach, level of control or firm performance. Consequently most SMEs exist between the extremes and change when they must (Howarth and Fredericks, 2012), but it is recognised that some SMEs are fluid and more capable of rapid change (Holt and Ghobadian, 2009).

**Resources and Constraints**

SMEs face challenges with the availability and use of resources; they have low capital investments and very high working capital requirements (Thakkar et al., 2009), are more confronted with financial constraints, have more manpower bottlenecks in terms of too few or unqualified personnel and often are unable to substitute for the lack of sales and profits through other products (Pullen et al., 2008). SMEs typically have fewer products, fewer customers and lower volume while lacking economies of experience and learning capacity.
(Arend and Wisner, 2005). They have higher capital and transaction costs, are more reactive and technologically focused with weak marketing skills (Thakkar et al., 2009).

SMEs are typically described as possessing resource poverty because their size does not allow them access to financial resources, they often operate on narrower margins (Fitjar, 2011) and are vulnerable to economic uncertainty (Prasad et al., 2012). They tend to be relatively opportunistic, are generally more cash focused, short term in their decision-making, and less likely to have the skills and experience to handle the complexity of network transactions (Arend and Wisner, 2005). New SMEs can be particularly vulnerable and experience high failure rates due to fewer resources, including the number of employees, management expertise and technical support (Paik, 2011).

SMEs are unlikely to be able to restrict or eliminate the entry of new firms into their market and owner-managers recognise there is always the risk that a competitor may emerge which could be terminal to the business (Storey, 2009-2010). Because of their limited power over the competitive market (Thakkar et al., 2009) SMEs respond to changes over which they have little or no direct influence; this can lead to the reactive approach focused on immediate survival highlighted in Figure 8, rather than a long-term strategy aligned and adaptable to its competitive environment (Hudson Smith and Smith, 2007). SMEs exhibit a wide range of objectives in the running of the business, which magnifies their performance variation, and because of their resource poverty often view legislation as a disproportionate burden because the unit cost of compliance is higher than for larger firms (Storey, 2009-2010).

However despite these resource issues and constraints other characteristics of SMEs enable them to respond and adapt to these challenges in more resourceful and innovative ways than larger ‘resource rich’ organisations. Recognising their more limited access to skills and expertise due to lower employee numbers SMEs are more likely to have knowledge-based advantages; they highly value communication, cooperation and trust (Paik, 2011), tend to place more emphasis on the management of knowledge in tacit forms (Thakkar et al., 2011)
and instil better communications and incentives for exploiting internal knowledge (Arend and Wisner, 2005).

As a consequence of having fewer products and customers, and lower volume which limits their economies of scale and experience, SMEs are more likely to differentiate through superior product features, quality and customer service (Arend and Wisner, 2005), and tend to be moderately specialised with specific core competencies (Hong and Jeong, 2006). Because of their smaller size, simpler structure and proximity to and awareness of the competitive market SMEs may also be faster at recognising opportunities, more flexible in adjusting their approach to innovation and their typically flatter, less rigid management structures can allow employees to be more innovative and involved (Rogers, 2004). This can make them flexible and adaptable to changing market needs and often results in a high potential for innovation (Hudson Smith and Smith, 2007), especially as this is often a distinctive trait of SME founders (Barrow, 1998).

**SMEs and Supply Chains**

SMEs can play key roles in SCM as they participate in value adding activities and SMEs that occupy a high position in the supply chain can possess dominant value propositions in terms of reputation, management leadership and relationship strengths (Hong and Jeong, 2006). SMEs are more vulnerable due to their reliance on SCM partners and therefore are more likely to pursue cooperative frameworks that are based on trust, reputation and pursuit of mutual benefits (Arend and Wisner, 2005). Owner-managers are particularly sensitive to activities related to their internal stakeholders i.e. customers, employees and suppliers (Lepoutre and Heene, 2006), and stakeholder relationships may be based on a more informal, trusting basis characterised by intuitive and personal engagement rather than planned, formal and strategic stakeholder management (Jenkins, 2004).

To further understand these issues the key differences between SMEs and LEs in SCM practice are identified, and in turn illustrates how applicable established SCM theories are to SMEs. Table 10 indicates that SMEs are more likely to focus on specialised market niches (Preuss and
Perschke, 2010), which requires understanding and harnessing of their core competences, and importantly building strong supplier and customer relationships. Building on the findings from the SCM literature review this can contribute to SMEs actively collaborating with other SMEs to strengthen their supply chain and they are more likely to focus on specific performance outcomes (Hong and Jeong, 2006).

<table>
<thead>
<tr>
<th>Category</th>
<th>SCM by LEs</th>
<th>SCM by SMEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive priorities</td>
<td>Market dominance through sustaining large market share</td>
<td>Market niches through sustaining profitable market position</td>
</tr>
<tr>
<td>Key strategies</td>
<td>Exert influences in supply chain – both upstream &amp; downstream; strategic alliance with suppliers &amp; distributors</td>
<td>Focus on specialised market; build on unique competences; effective customers/suppliers management</td>
</tr>
<tr>
<td>External control structure</td>
<td>Command &amp; control toward their small suppliers &amp; distributors; collaborate with more dominant suppliers &amp; distributors</td>
<td>Either accept command &amp; control by OEM or 1st tier supplier or utilise their negotiation strengths; pursue collaboration with other SMEs</td>
</tr>
<tr>
<td>Internal control structure</td>
<td>Decentralised, structured &amp; highly specialised; multiple core competences development</td>
<td>Centralised, semi-structured &amp; moderately specialised; specific core competences development</td>
</tr>
<tr>
<td>Goals of SCM processes</td>
<td>Operational effectiveness with multiple performance outcome requirements (e.g. cost, quality, delivery, time, customer value &amp; disposal); bigger scopes of information &amp; product flows</td>
<td>Operational effectiveness with focused performance outcome requirements (e.g. specific definition of order qualifiers &amp; winners); smaller scopes of information &amp; product flows</td>
</tr>
</tbody>
</table>

Table 10: Comparison of SCM practices - LEs vs. SMEs (Hong and Jeong, 2006)

To date there has been limited literature on SMEs and their SCM practices (Quayle, 2003), and yet the survival and growth of SMEs may depend on how they allocate resources through their strategic focus and secure better negotiation terms through improvement of supply chain relationships (Hong and Jeong, 2006). Alliances and networks can help SMEs overcome size and resource constraints through increased innovation, reduced costs and reduced circumstances of uncertainty (Thakkar et al., 2009). SCM offers SMEs possible leverage, differentiation, resource access and risk benefits, and to the entrepreneur has potential benefits to leverage its scalable competences e.g. through product design in a cooperative network. This can introduce new challenges in terms of technology, possible increased transaction hazard costs that SMEs are ineffective in mitigating and high initial fixed costs for effective implementation of SCM (Arend and Wisner, 2005).
SCM implementation in SMEs is required due to increased pressures resulting from globalisation and considerable expenditure on goods and services, but there are indications that SMEs are less able to harness the benefits of SCM and supply chain inefficiency is a prevalent issue. An organisation’s ability to provide value to customers can be severely impeded by a dysfunctional supply chain (Thakkar et al., 2011). Effective SCM also directly impacts the bottom line, but SMEs often do not appear to realise this contribution and do not see a problem with their own SCM capability (Quayle, 2003). Procurement is the largest spend in manufacturing firms and effective SCM is therefore critical for manufacturing SMEs (Paik, 2011).

SMEs face issues in power resources and have substantially less control in enforcing supply chain practices (Simpson et al., 2011, Vaaland and Heide, 2007). They rely more heavily on on-going and partnership relationships with similar sized suppliers, but true vertical integration/ownership which enables much greater control of the supply chain is generally not an option for SMEs (Arend and Wisner, 2005) – see Figure 10. Through market dominance and greater buying power larger focal organisations in contrast are able to engage in more transactional relationships and can force suppliers to meet specific cost and performance requirements (Vaaland and Heide, 2007) and are more likely to use regulation and formal auditing procedures to manage their supply chains (Preuss, 2005b).

<table>
<thead>
<tr>
<th>Less integrated</th>
<th>Relationship</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transactional/arm’s length</td>
<td>Order-by-order, minimal interaction, price key order winner</td>
</tr>
<tr>
<td></td>
<td>On-going</td>
<td>Medium term contracts</td>
</tr>
<tr>
<td></td>
<td>Partnership</td>
<td>Long term contracts, sharing of information</td>
</tr>
<tr>
<td></td>
<td>Strategic alliance/joint venture</td>
<td>Long timescales, extensive sharing of information</td>
</tr>
<tr>
<td>More integrated</td>
<td>Ownership</td>
<td>Backward or forward integration, full sharing of information</td>
</tr>
</tbody>
</table>

Figure 10: Types of Firm-Supplier Relationships (Hill, 2000)

Within complex and global supply networks an SME’s relationship to other SMEs and suppliers is important to survive competition in the market, which further drives small firms towards longer term partnerships over purely transactional interactions (Spence and Schmidpeter, 2003). Two dimensions can be applied in defining SME characteristics within the SCM context.
that builds on the different forms of firm-supplier relationships illustrated in Figure 9; strategic focus where the firm will compete on low cost or value-added operations, and supply chain relationship position, which reflects the firm’s competitive positioning and relationship strength/level of integration. High and low measures on these 2 dimensions result in the 4 SME classifications illustrated in Figure 11.

Figure 11: Value-added chain relationship position model (Hong and Jeong, 2006)

‘Efficiency’ SMEs that focus on low cost and have a low supply chain relationship are more likely to be one of many small competitors in the market, and will be more likely to have short or medium term supply contracts to enable flexibility, while ‘innovation’ SMEs with their focus on value-added and stronger supply chain relationships in comparison will have a sustaining competitive position. They have a strong negotiating position and their value creation capabilities allow them to be dominant members in the market (Hong and Jeong, 2006). This suggests that different sizes of SMEs may be more likely to take a specific position on the matrix, with newer and micro firms initially focusing on minimising cost in order to compete. As firms grow and evolve supply chain relationships can become stronger and together with changing priorities and capabilities enable the firm to make the transition from one classification to another. A firm’s classification and whether it is in transition in turn may influence how and the extent to which SMEs approach sustainability (Preuss and Perschke, 2010).
SMES and Sustainability

While key characteristics of SMEs and their supply chains can be identified, what is less well-understood and documented in the literature is the range of activities undertaken by SMEs, some of which base their entire business rationale on sustainable principles (Rodgers, 2010) and how these activities are managed across the supply chain. The characteristics of SMEs, including their embedded commitment to principles and use of ethical and moral arguments for their commitment to responsible practice (Pedersen, 2009) should enable them to achieve sustainability more easily than LEs, which apply a stronger emphasis on profitability and prioritise their shareholders over other key stakeholders.

It is often assumed that SMEs are just ‘little big firms’ (Tilley, 2000), but the literature acknowledges that firm size matters in terms of sustainability (Hoivik and Mele, 2009, Jenkins, 2004) and more insight is needed into the sustainability and SME relationship (Kusyk and Lozano, 2007, Friedman and Miles, 2002). Research examining sustainability from the SME perspective is relatively limited (Battisti and Perry, 2011) and yet, unlike LEs, SMEs have no legal pressure to maximise shareholder value (Hoivik and Mele, 2009) and are free to spend company money as they see fit (Spence, 2007), which can enable flexibility to pursue environmentally and socially responsible activities (Jenkins, 2004). Their tendency to apply a reduced focus on profit maximisation contrasts the sustainability approaches of large organisations, which in practice skew towards economic performance.

SMEs can be more heavily driven by the beliefs, values and motivations of the people who run them (Kusyk and Lozano, 2007, Davies and Crane, 2010) and many owner-managers do not run their businesses to maximise financial performance (Simpson et al., 2011). Some SMEs specifically base their business rationale on sustainable principles; business is not just seen as an income stream, but as a vehicle for social and environmental change (Rodgers, 2010). SMEs are therefore more likely to be environmentally and socially responsible for its own sake (Kechiche and Soparnot, 2012).
The implementation of sustainability in SMEs depends on various factors including the individual personality of owners/managers, institutional, organisational and personnel factors, and contextual factors. Their smaller scale increases personal contact between owner-manager and staff, which can translate into more direct communication of sustainability principles (Kechiche and Soparnot, 2012). Sustainability can bring advantages including enhanced reputations, improved working relations, production and quality, and increased motivation and productivity. SMEs are generally well positioned to develop innovative products and take advantage of new and emerging markets where sustainability is a key feature, and a focus on resource management and responsible processes can reduce costs and increase efficiency (Gherib and Berger-Douce, 2012). They often have insufficient human resources to drive systems-based sustainability initiatives and are less inclined to use formal instruments such as policies to foster sustainable behaviours (Jenkins, 2006).

The recognised heterogeneity of SMEs is reflected in their response to sustainability, which can differ due to cultural differences arising from diverse ownership structures, strategy and owner-manager characteristics (Kechiche and Soparnot, 2012) and therefore initiatives need to acknowledge the variability of SME characteristics (Jenkins, 2004). SME sustainability research has been fragmented and largely descriptive in terms of SMEs variable characteristics; there is a need to move from the ‘what’ to the ‘why’ of SME environmental and social practices and develop meaningful categories of theoretical relationships of constructs (Kusyk and Lozano, 2007).

**Environmental**

SMEs are significant sources of national wealth, but also of potential and considerable harm to the environment (Gherib and Berger-Douce, 2012, Tilley, 2000); one estimate is that SMEs collectively account for up to 70% of industrial pollution worldwide (Battisti and Perry, 2011, Hillary, 2003). Despite this cumulative impact SMEs have been seen to avoid environmental responsibilities (Howarth and Fredericks, 2012). One perspective is that SMEs are less inclined
to act proactively with environmental initiatives; their lack of management resources prevents activities not essential for day-to-day operations and they are less exposed to reputational risks (Battisti and Perry, 2011). The level of environmental commitment of SMEs also varies according to the profile of the owner-manager (Gherib and Berger-Douce, 2012).

Internal barriers to environmentally responsible behaviour include resource availability, understanding of environmental issues, implementation and company culture, while external barriers include certifiers/verifiers, economics, institutional weaknesses, support and guidance (Hillary, 2003). The internal benefits of successfully implementing an Environmental Management System (EMS) are organisational, financial and people-related, while external benefits are more commercial, environmental, and communication-related. However a major irritation for SMEs is the cost of certification and that benefits do not materialise as expected (Hillary, 2003). Consequently the literature suggests that the bigger the SME the more likely an EMS and other environmental initiatives will be put into practice (Murillo and Lozano, 2006).

SMEs are not required by law to take responsibility for the environment to the same extent as large organisations; consequently they need their own unique understanding of the environmental issues they face (Tilley, 2000) and how to address them. A firm’s sector can determine its potential usage of natural resources as well as its potential to pollute, and pollution and inefficient use of resources directly represent costs to the firm (Cambra-Fierro et al., 2008). Environmental awareness and eco literacy within a firm can drive environmental supply chain practices and supplier participation (Caniels et al., 2013); the literature suggests that low standards of eco-literacy are common among owner-managers and there is limited internal motivation for addressing the environmental impacts of their operations, as well as tension between what is economically appropriate and environmentally acceptable behaviour (Tilley, 2000).
Social

Corporate Social Responsibility (CSR) captures the obligations of organisations to society and can encompass both environmental and social issues (Klassen and Vereecke, 2012), to include health and safety, social/community management and employee/labour/human rights issues (Adebanjo et al., 2013). While historically it has focused on large companies, the SME business sector is so significant worldwide in terms of economic, social and environmental impact attention has turned to socially motivated principles and practices in this context (Kechiche and Soparnot, 2012).

According to a UK-wide study of socially responsible SMEs, owner-managers do not see CSR as an external add-on, but rather as an integral part of how they manage the firm (Kechiche and Soparnot, 2012); small companies may even be carrying out CSR without explicitly recognising it as this (Jenkins, 2004). The business case for CSR in SMEs seems to rely on the faith of owner-managers, with a strong belief that ‘doing good is good business’ (Fitjar, 2011, p.32), and while the application of CSR concepts within the supply chain context is relatively recent it offers potential for transferring socially responsible practices along the supply chain (Govindan et al., 2013, Ciliberti, 2008, Ciliberti et al., 2008).

SMEs have characteristics that can more readily aid the adoption of CSR; they are flexible and adaptable, creative and innovative, the owner-manager can more easily influence the values and culture of the firm and champion CSR, there is more fluid communication, a leaner, less hierarchical management structure, and the benefits of CSR are felt more immediately (Jenkins, 2006). Most SMEs use moral and ethical arguments to justify why CSR is important (Jenkins, 2006) and owner-managers are especially capable of being motivated by social and ethical reasons (Spence and Schmidpeter, 2003) and the desire to do good (Fitjar, 2011); ‘sustainability in small firms seems to be driven by the owner-managers and their values and beliefs, rather than any economic conditions’ (Battisti and Perry, 2011, p.183). Spence and Rutherford (2000) recognise that the reasons for being in business are far more complex and
socially motivated than purely financial reasons and propose 4 frames for an SME’s perception of social responsibility that reflect this diversity.

<table>
<thead>
<tr>
<th>SME social perspective frames</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit maximisation priority</td>
<td>The drive for maximising profit is the company’s top priority</td>
</tr>
<tr>
<td>Subsistence priority</td>
<td>Long-term survival through ensuring security of livelihood; maintenance of a certain standard of living</td>
</tr>
<tr>
<td>Enlightened self-interest priority</td>
<td>Active in social issues with conscious awareness of the positive influence that the owner-manager perceives this will have on their business</td>
</tr>
<tr>
<td>Social priority</td>
<td>Social values and actions are integrated into the business life and take priority over maximising profit</td>
</tr>
</tbody>
</table>

Table 11: The 4 social perspective frames of SMEs (Jenkins, 2006)

As a major source of employment SMEs can be key contributors to their local communities, as well as through the tax revenues they provide (Prasad et al., 2012). By moving from profit maximisation and applying a stronger, more enlightened social priority, as illustrated in Table 11 SMEs can play an increasingly important social role in terms of engagement and civic issues in economic regional development, and illustrates that to be socially responsible a firm should sometimes engage in activities that benefit stakeholders such as employees, suppliers and society at large, even if they reduce the present value of its cash flows (Mackey et al., 2007).

The literature suggests that small business owners can often be detached from more local economic initiatives (Spence and Schmidpeter, 2003), indicating a broader engagement in social issues and global supply chain responsibility (Pedersen, 2009).

With regard to the key drivers of CSR larger organisations place a stronger emphasis on systems and certification, while SMEs often have insufficient human resources to drive systems-based CSR initiatives (Jenkins, 2004). SMEs are therefore less inclined to use formal instruments to foster ethical behaviour and CSR for SMEs focuses less on policies, procedures and external elements and more on practicalities of internal elements of CSR (Jenkins, 2006).

To ensure that CSR engagement is relevant to SMEs and not focused on larger organisations there needs to be a clear understanding of the key differences between LEs and SMEs in how and why they approach CSR.
Table 12: Divergence in CSR Theory for Large and Small Organisations (Jenkins, 2004)

Table 12 illustrates that due to their size SMEs tend to have fewer stakeholders and their social responsibility is more likely to be directed towards its local community rather than larger society. Owner-manager principles will strongly influence how an SME will approach CSR and consequently there is typically a less defined business case for SME CSR. CSR approaches will largely be informal (Preuss, 2005a), more intuitive and less focused on standards and measurements, and conducted on a small scale (Jenkins, 2004). The response of SMEs to CSR can differ due to cultural differences arising from their diverse ownership structures, strategy and owner-manager characteristics (Kechiche and Soparnot, 2012), and therefore CSR initiatives need to acknowledge the variability of SME managerial characteristics (Jenkins, 2004).

Social capital is generated through CSR and its power comes from a focus on the positive outcomes of sociability; a key benefit is that it lowers transaction costs (Spence and Schmidpeter, 2003) through the trust and mutual benefit that develops with suppliers. Unlike physical, financial or human capital social capital is not located within a certain place (Kontinen and Ojala, 2012), but is embedded in the relationships that SMEs develop with their network of suppliers, customers and key stakeholders, and in turn contributes to information sharing.
and strategic decision making (Jansen et al., 2011). The less social capital a firm possesses the more it is exposed to opportunistic behaviour and the more difficult it is to establish long-term relationships. In contrast the more closed and dense the network a firm operates within the better the information sharing and greater the levels of trust, leading to more cooperation and potential collaboration (Kontinen and Ojala, 2012) and stronger social capital.

Internal social capital based on strong internal relationships and interactions can reduce transaction costs, facilitate information flows, knowledge creation and accumulation and creativity. External social capital connects SMEs to diverse networks and external stakeholders and makes it possible to obtain resources from other firms, which in turn can contribute to innovation (Kontinen and Ojala, 2012). In the supply chain context there are 3 dimensions of social capital – structural, relational and cognitive. Structural reflects the overall pattern of both formal and informal supply chain connections; the relational dimension refers more specifically to the personal relationships that can develop through a history of interactions and how this contributes to trust, respect and reciprocity; while cognitive social capital refers to shared representation, interpretation and systems of meaning (Prasad et al., 2012). All 3 will have a strong influence on how an SME achieves and manages sustainability within its supply chain.

**SMES and SSCM**

The identified academic research bias towards LEs (Curran and Blackburn, 2001) means that there has been limited explicit discussion of SSCM within the SME context and it represents a key research gap. Carefully designed and well-managed networks are an effective means to strengthen SMEs’ economic, social and environmental performance (Enderle, 2004) and specialisation in a particular area of sustainability can be a key element for developing other sustainable supply chain practices (Murillo and Lozano, 2006). There are exemplar firms who operate responsibly and succeed as a business and many SMEs have owner-managers who
have strong environmental and social principles (Tilley, 1999) that are translated into their supply chain practices and relationships.

There has been insufficient attention to the differences within the SME category and yet there is an indication from the review of the literature that sustainability practices change as an organisation grows, with medium-sized firms displaying increasingly formalised objectives and processes (Preuss and Perschke, 2010). Spence (2007) identifies the evolution and growth of SMEs as a key research area, with size and organisational structure as influencing factors. Smaller firms typically have a more informal approach to supply chain relationships and owner-managers interact with their suppliers on more of a one-to-one basis (Preuss and Perschke, 2010), while larger firms are more likely to implement formal supplier monitoring (Jenkins, 2006).

The literature review has identified consistent themes with regard to SME characteristics. Their size influences how they approach business and their access to resources; they tend to have a less hierarchical management structure, although this can take the form of owner-managed or independently managed. These characteristics extend to how they structure their supply chains, with a strong emphasis on personal, long-term relationships; while owner-manager principles more strongly impact business priorities and in the context of SSCM can translate into specific social or environmental commitments beyond profit maximisation, which is further reflected in different social priorities.

**Conclusion**

The specific focus on SME supply chain and sustainability literature that evolved from the literature reviews has identified themes relating to SME characteristics including firm size, management structure, owner principles and resource availability, and how these characteristics influence and contribute to supply chain structure and relationships. These themes were then aligned with the environmental and social practices of SMEs; practices that can be heavily influenced by owner principles and in turn rely on strong supply chain
relationships and the social capital that is generated (Spence and Schmidpeter, 2003, Kontinen and Ojala, 2012).

SSCM research has tended to focus on LEs (Curran and Blackburn, 2001) and multiple industry perspectives (Carter and Easton, 2011). This is due to a number of factors; small firms are considered to have insufficient resources; methodologies created for large firms are not easily adapted to SMEs; more information is available to research LEs and they have a higher public profile (Tilley, 2000). However SMEs represent 99% of companies worldwide (Curran and Blackburn, 2001, Pedersen, 2009) and their characteristics, unique perspective and issues they face in achieving sustainability (Davies and Crane, 2010) represents an underexplored, but highly relevant research area (Walker and Jones, 2012).

The established profit maximisation priority of large firms means that current SSCM literature tends to emphasise the economic dimension, with interaction between the economic and environmental performance better developed than interactions with the social dimension (Ashby et al., 2012). The review of SME literature has indicated that many SME owner-managers do not run businesses to maximise financial performance (Simpson et al., 2011), whilst strong beliefs, including those related to environmental and social responsibility are likely to be associated with a founder (Pedersen, 2009) and be strongly culturally embedded. In addition the size and lack of hierarchy within SMEs potentially enables principles to be more easily operationalised and communicated.

As there is an assumption that SMEs operate simpler, more strongly integrated supply chains (Bordonaba-Juste and Cambra-Fierro, 2009, Vaaland and Heide, 2007), such firms could be better positioned to harness the benefits of the long-term partnerships advocated in SSCM literature (Nyaga et al., 2010). The SME supply chain structure may also align with specific sustainability principles and practices, and in turn be driven more by close supplier relationships than by the introduction of regulated standards, typically considered a suboptimal approach (Preuss, 2005b).
Explicit SCM and SME research is currently underdeveloped, as evidenced by the limited literature on this specific field, but the literature also indicates that SMEs are engaged in environmentally and socially responsible supply chain practices, practices that strongly align with owner-manager principles. The review of SME literature suggests that the social dimension of sustainability is potentially more fully developed in this key business sector and could address the identified gap in current SCM research and offer insight on how to achieve full integration and balance of the 3 sustainability dimensions.

The review of SME literature highlights a stronger emphasis on CSR and social capital than currently evidenced in the broader sustainability and supply chain literature; CSR reflects the importance of charity and community engagement to smaller firms and owner-manager principles have a strong influence on how small firms approach sustainability in their operations and they focus on specific core competences, which align with these principles. Commitment to operating sustainably translates into trust-based, long-term and often highly personal supplier relationships, which generates strong social capital.
Chapter 6: Theoretical Lenses for SSCM

Introduction
A specific theory was not applied prior to the literature reviews as sustainability and SCCM are dynamic, expansive and developing research areas, and it was considered that focusing on a single theory could constrain the review process and potentially exclude relevant literature and theoretical directions. This chapter summarises the 3 literature reviews, identifies and discusses a series of established theoretical lenses applicable to developing research in the SSCM and SME context, and highlights the theoretical contribution made through employing multiple lenses, rather than a single theory.

A theory is a statement of relations among concepts within a set of boundary assumptions and constraints (Bacharach, 1989). Management theories, including those in the operational context, can be viewed and employed in at least 3 complementary ways; as analytical tools that help explain and predict the outcomes of phenomena, as interpretive tools that enable us to understand and make sense of complex phenomena, and as tools to act in the world and shape our actions (Twyoniak, 2007).

The research process mapped and presented in Figure 1, Chapter 2 aims to describe and explain the phenomena of SSCM within SMEs, through the review of relevant literature and a parallel research phase; in-depth case studies then develop theory that can be subsequently tested (Meredith et al., 1989). The decision to combine and employ 3 lenses rather than a single theory makes an important theoretical contribution to this research field; the original conceptual model through its strong focus on the more intangible, tacit components of SSCM provides a framework and opportunity to more fully analyse and understand SSCM.

Summary of the Literature Reviews
The series of literature reviews presented in the preceding chapters have refined a broad view of sustainability and how it is defined, to how the 3 dimensions of sustainability are operationalised and balanced in supply chains through SSCM, and finally how sustainability
and SSCM are specifically addressed within SMEs and the extent to which this is currently represented in the academic literature. The literature review process was informed by the initial research questions presented in Chapter 2 and was refined as it progressed, resulting in a recognition of the lack of SSCM research in the SME context and the subsequent review of relevant SME, sustainability and supply chain literature in Chapter 5.

Key themes were identified through the literature reviews, as summarised in Table 13 and they informed the final research objectives, questions and methodology. The first theme establishes the different dimensions and strengths of sustainability and an inherent assumption that there are trade-offs between the dimensions. These 3 dimensions inform the discipline of SSCM, which looks to balance social and environmental performance with economic performance (Carter and Rogers, 2008); this is reflected in the second key theme, through the importance of supply chain relationships and supply chain orientation. Within these relationships are the key issues of trust and power, while an emphasis on sustainability extends supply chain boundaries to a product lifecycle responsibility (Stokes, 2009). A range of environmental practices and processes are recognised, together with the importance of certification/accreditation for monitoring and evidencing environmental performance.

<table>
<thead>
<tr>
<th>Key theme</th>
<th>Sub-Themes</th>
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<tbody>
<tr>
<td><strong>Sustainability</strong></td>
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<tr>
<td>Defining sustainability</td>
<td>Sustainability dimensions</td>
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<td></td>
<td>Sustainability strengths</td>
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<td></td>
<td>Sustainability trade-offs</td>
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<td><strong>Sustainability in Supply Chains</strong></td>
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<tr>
<td>Supply chain practice</td>
<td>Environmental practice &amp; process</td>
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<tr>
<td></td>
<td>Certification &amp; accreditation</td>
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<td></td>
<td>Lack of social dimension research</td>
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<td>Supply chain boundaries</td>
<td>Product lifecycle</td>
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<td></td>
<td>Closed loop</td>
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<td></td>
<td>Role of purchasing</td>
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<td>Supply chain relationships</td>
<td>Supply Chain Orientation</td>
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<td></td>
<td>Trust &amp; power</td>
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<tr>
<td></td>
<td>Commitment</td>
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<tr>
<td></td>
<td>Collaboration</td>
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<tr>
<td><strong>Sustainability in SMEs</strong></td>
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<tr>
<td>Owner-manager principles</td>
<td>Commitment</td>
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<tr>
<td></td>
<td>Trust</td>
</tr>
<tr>
<td></td>
<td>Sustainability literacy</td>
</tr>
<tr>
<td></td>
<td>Personal values &amp; morals</td>
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</table>
While the environmental dimension is well developed and documented, the social dimension is significantly underrepresented in the SSCM literature and is recognised as a key research gap (Pagell and Wu, 2009, Schaefer, 2004, Sharma and Ruud, 2003), alongside the underexplored role and impact of supply chain relationships on sustainability (Vachon and Klassen, 2006b). The SME literature offers the potential to address these gaps and represents the final key theme; it highlights that SMEs may place a stronger emphasis on social responsibility than larger organisations (Spence and Schmidpeter, 2003) and than currently evidenced in the literature. SMEs often do not have a primary focus on financial performance, are more likely to pursue cooperative supply chain relationships based on trust and mutual benefits (Arend and Wisner, 2005), and evidence stronger social priorities (Jenkins, 2006).

**Theoretical Lenses**

A range of theories are applicable to sustainability, which represents an expansive research area, and research in the supply chain discipline currently employs a diverse range of multi-disciplinary theories (Chicksand et al., 2012), including stakeholder theory, transaction cost economics (TCE), resource dependence theory, contingency theory and institutional theory (Morali and Searcy, 2013). The purpose of this research is to understand sustainability and SSCM specifically within the context of SME supply chains with an emphasis on how sustainability is enabled, managed and communicated across the firm’s supply chain. It is intended to gain insight and understanding into the ‘why’, not just the ‘how’ of SME environmental and social practices and in turn develop meaningful categories of theoretical relationships (Kusyk and Lozano, 2007) that can progress SSCM research beyond the dominant Western economic paradigm (Key, 1999).
Good research is grounded in theory (Defee et al., 2010), but as the field of SSCM is still evolving viewing the discipline through multiple lenses, conceptual frameworks or theories offers the potential for valuable insights and profitable lines of enquiry (Chicksand et al., 2012) from a single set of data. Theory triangulation i.e. the use of multiple lenses is one of 4 types of triangulation relevant to qualitative research (Denzin, 1978), and can yield diverse findings that can broaden perspectives and interpretations of a phenomenon (Padgett, 1998).

The review of the literature encapsulated a range of potential management and operational theories, but its emphasis on the themes of SSCM practice, the importance of supplier relationships and owner-manager principles, as summarised in Table 13, resulted in 3 specific theories being identified. The 3 lenses of the Resource Based View of the firm (RBV), Social Network Theory (SNT) and Social Capital Theory (SCT) are all relevant to understanding sustainability in the chosen context, offering differing perspectives of the phenomenon, but have been relatively under-employed in SSCM research to date (Meredith et al., 1989). Each lens aligns with key aspects of the literature reviews, as illustrated in Table 14.

<table>
<thead>
<tr>
<th>Theoretical Lens</th>
<th>Alignment with Reviewed Literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource Based View</td>
<td>GSCM, processes, resource efficiency, RL, EM, recycling, reuse, DfE, knowledge sharing and integration of external resources</td>
</tr>
<tr>
<td>Social Network Theory</td>
<td>SCM, Supply Chain Orientation, EM, CLSC, product stewardship (RL, recycling, reuse)</td>
</tr>
<tr>
<td>Social Capital Theory</td>
<td>Supply chain relationships, social resources, CSR, SME CSR, Fairtrade, supply management (economic and natural capital)</td>
</tr>
</tbody>
</table>

Table 14: Alignment of Lenses and Reviewed Literature

The RBV is a strategic management theory, and considers a firm’s competitive advantage and organisational outcomes in relation to its tangible and intangible resources (Barney and Hesterley, 2008). The reviewed supply chain and SSCM literature identified a range of resource-focused practices and processes related to green supply chains, such as reverse logistics and the reuse/recycling of materials; while this indicated an emphasis on the more tangible aspects of the RBV there was also recognition of the importance of supply chain relationships and the sharing of knowledge.
SNT along with SCT has evolved within the social sciences domain and has therefore been applied to a wide range of subject areas and disciplines, including those within the field of business and management (Borgatti et al., 2009). The focus of SNT is on the connectivity and structure of networks of actors, whether individuals, communities or organisations; within the reviewed literature this again related to tangible practices, but specifically those that would rely on a connected and coordinated supply chain, such as product stewardship, environmental management and closed loops. The structure of networks was reflected in the study of Supply Chain Orientation (SCO) in Chapter 4, Figure 6, and their connectivity through the discipline of SCM.

SCT emphasises the value of relationships and interactions, a key output of SNT, and it therefore related strongly to the studies of supply chain relationships within the literature, especially those that focused on long-term, mutually beneficial and trustful relationships. It also aligned strongly with the general CSR literature that was reviewed as well as CSR specifically in relation to SMEs where the importance of social capital in overcoming firm constraints was explicitly recognised. Socially motivated supply chain practices such as Fairtrade illustrate the value that can be achieved through committed relationships and principles, and the broader supply management literature positioned social capital in relation to other forms of capital, namely economic and natural (Nahapiet and Ghoshal, 1998).

All 3 of the lenses are applicable to the value added chain relationship model presented in Chapter 5, Figure 11; the RBV emphasises resource efficiency and innovation through knowledge sharing, SNT focuses on supply chain coordination through its emphasis on structure and connections, and SCT aligns with the collaboration quadrant, where value is in the relationships, but can also contribute to innovation. There are also links to the 4 social perspective frames (Table 11); a focus on resources (RBV) aligns with profit and organisational survival priorities, while SCT aligns with enlightened self-interest and social priorities.
These 3 theoretical lenses will be applied to the collected research data to develop a framework of understanding for SSCM in SMEs and address the identified research gaps, but as highlighted the use of these specific lenses also makes its own theoretical contribution to the fields of SSCM and SME research. Each lens is described and critiqued/analysed in the following sections and then connections and differences between them identified and their implications for the research process evaluated.

**Resource Based View of the Firm**

The RBV is a leading theory of competitive advantage (Powell, 2001), predicated on explaining performance differences between firms and sits within the field of strategy, where realism is a dominant philosophical view (Westnes, 2007). Its basic argument is that value creating resources and capabilities are heterogeneously distributed among firms, opening up the possibility of a source of sustainable competitive advantage (Barney, 1986b; Barney, 1991).

The literature identified the RBV’s relevance (Barney, 1991) for understanding and harnessing supply chain relationships; the sharing of meaningful, rare, valuable, inimitable or non-substitutable information can create ‘distinctive visibility’, and relational embeddedness gained through a history of interactions can improve performance and provide a sustainable competitive advantage (Soler et al., 2010, Bernardes, 2010). Competitive advantage comes from a firm’s ability to exploit its strategic resources, and focuses on internal operations and capabilities rather than the external market and stakeholders (Wills-Johnson, 2008). The RBV enables a firm to understand what it has the ability and the opportunity to do (Paulraj, 2011).

Firm resources can take the form of physical capital, which includes technology, plant and equipment, and raw materials; human capital, which includes training, experience, judgment, intelligence, relationships and the insight of managers and workers; and organisational capital, which includes formal reporting structures, planning, control and coordinating systems as well as the informal relations among groups within a firm (Barney, 1991). Resources can be tangible
e.g. physical equipment, personnel-based and intangible (Russo and Fouts, 1997), with information considered a critical intangible resource (Autry and Griffiths, 2008).

Strategic resources are those that can be considered valuable, rare, inimitable and non-substitutable (Barney and Hesterley, 2008), as illustrated in Figure 12. There are 5 sources for these resources, namely causal ambiguity (tacit), history, legal property rights, social complexity, and time compressive diseconomies (Wills-Johnson, 2008); the mix of these can create strategic resources. Socially complex resources include interpersonal relationships, firm reputation and customers; social/environmental commitment and responsibility can have positive reputational effects (Russo and Fouts, 1997) and make a firm imperfectly imitable (Barney, 1991), while tacit resources are skills based and people intensive (Hart, 1995).

<table>
<thead>
<tr>
<th>Resource Based View of the Firm</th>
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</thead>
<tbody>
<tr>
<td><strong>Strategic resources:</strong></td>
</tr>
<tr>
<td>- Valuable – contribute to firm effectiveness or efficiency</td>
</tr>
<tr>
<td>- Rare – limited in supply</td>
</tr>
<tr>
<td>- Inimitable – cannot be easily replicated by competitors</td>
</tr>
<tr>
<td>- Non-substitutable – other resources cannot fulfil the same function</td>
</tr>
<tr>
<td><strong>Socially complex resources</strong></td>
</tr>
<tr>
<td>- relationships, reputation, customers, coordinated action</td>
</tr>
<tr>
<td><strong>Tacit resources</strong></td>
</tr>
<tr>
<td>- skills-based, people-intensive, 'learning by doing'</td>
</tr>
<tr>
<td><strong>Embeddedness</strong></td>
</tr>
<tr>
<td>- firm culture and principles</td>
</tr>
</tbody>
</table>

Figure 12: Resource Based View of the Firm

Critics argue that the RBV is just a view, not a theory that can be tested (Priem and Butler, 2001), as it does not appear to meet the empirical content criterion required of a theoretical system (Tokuda, 2005). There is no clear definition on key variables and constructs, the explanation of the resources presented in Figure 12 is considered vague, and there is limited ability to provide any reliable predictions (Priem and Butler, 2001). The RBV’s assumption of heterogeneity creates a tautology (Powell, 2001), where the statement of a relationship e.g. rare resources create a competitive advantage, is true by logic and therefore cannot be falsified. Falsifiability determines whether a theory is constructed such that empirical refutation is possible; theories should be able to be disproved if not proved (Bacharach, 1989).
The ontological foundations of the RBV lie within realism, considered a *common sense approach* to knowledge (Foss, 2005) (Westnes, 2007); it denies that it is possible to have any objective knowledge of the world. A pragmatic epistemology (Maxwell, 2012) aligns with realism, where the purpose of research is not to find reality, but to facilitate human problem-solving (Powell, 2001). While the intangibility of resources/capabilities creates issues around measurability and observability, the philosophy underpinning the RBV means that statements about unobservables may be considered true (Westnes, 2007). If a prediction is made on the basis of a theory containing unobservable elements, and it survives repeated attempts to falsify it, then it is justifiable to respond as if the theory was true, even if there is no certainty that the unobservable entities exist (Westnes, 2007).

As most firms compete today as supply chains (Gold et al., 2009, Soler et al., 2010), an increasingly appropriate framework for RBV is the network of a firm’s resources, including intangible resources that are generated through supplier relationships (Wills-Johnson, 2008), and which would be considered unobservable. Firms that have been able to build their SCM capabilities internally can use these capabilities to gain competitive advantages (Barney, 2012) and create socially complex resources through on-going interactions with their supplier network. Historical, long-established, personal supplier relationships can create highly tacit skills and resources, which with the complexity of the supply chain make a firm more inimitable.

Hart (1995) developed a Natural Resource Based View of the firm (N RBV), which recognised the key role of tacit, socially complex and rare resources as well as cultural embeddedness, shared visions and strong moral leadership, all intangible and unobservable elements. The emphasis of the model applied to the environmental dimension of sustainability, but employing a resource-based framework can enable firms to understand how their social and environmental performance can create competitive advantage, and is a relevant lens to apply to SSCM. Table 15 indicates the importance of shared vision as a key resource for moving from reactive, preventive approaches to sustainability, to proactive, future-focused responses. The
embeddedness of sustainability in a firm’s culture can also represent an inimitable resource, although the RBV literature recognises that a unique ethical culture does not necessarily generate sustained excellent performance (Barney et al., 2001).

<table>
<thead>
<tr>
<th>Strategic Capability</th>
<th>Environmental Driving Force</th>
<th>Key Resource</th>
<th>Competitive Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollution Prevention</td>
<td>Minimise emissions &amp; waste</td>
<td>Continuous improvement</td>
<td>Lower costs</td>
</tr>
<tr>
<td>Product Stewardship</td>
<td>Minimise lifecycle cost of products</td>
<td>Stakeholder integration</td>
<td>Pre-empt competitors</td>
</tr>
<tr>
<td>Sustainability</td>
<td>Minimise environmental burden of firm growth &amp; development</td>
<td>Shared vision</td>
<td>Future position</td>
</tr>
</tbody>
</table>

Table 15: Natural Resource Based View of the Firm (Hart, 1995)

SCM explicitly aims to address environmental and social performance in conjunction with a firm’s economic performance, and tangible and intangible resources are relevant to each of these dimensions. These resources extend beyond the boundaries of the focal firm into the supplier network, and the emphasis of the RBV is on the strategic use of resources; how a firm manages its supply chain and the resources within it can contribute to successful performance across the 3 dimensions, but the literature suggests the emphasis has been on tangible resources that provide economic value and improve financial performance, rather than environmental and social performance. While the RBV recognises that resources are determinants of firm performance (Priem and Butler, 2001), it also emphasises the key role of intangible, tacit and socially complex resources, which could progress to more balanced SSCM.

The role of relationships in SSCM is underexplored, as highlighted by the literature reviews and yet the RBV acknowledges the different resources that can be generated and harnessed through on-going interactions with suppliers. SMEs are often considered to be resource poor, so the effective harnessing of resources across their supply chain could be seen as being of greater strategic importance. Because of resource poverty SMEs are also more likely to build long-term, collaborative relationships and in turn develop and embed more tacit and socially complex resources, so the RBV is very relevant in this specific context.

While not an operational theory the RBV is firmly established within management and strategy disciplines and focuses on the firm, the unit of analysis for this research, and its
assumptions around heterogeneity suit the SME context (Tokuda, 2005). Its usefulness is recognized in relation to generating understanding and providing structure for organisational strategy and decision-making (Twyonik, 2007), and it explicitly recognizes human capital, which links strongly to the social dimension of sustainability. As the human/social dimension is currently under-researched thinking of organisations as social structures maintained by interactions could enhance the RBV (Twyonik, 2007); this research therefore has the potential to contribute to its theoretical development.

Social Network Theory

SNT originates primarily from social psychology foundations (Scott, 2000) and is increasingly being applied in the business context (Borgatti et al., 2009). It has emerged in the last 30 years as a tool for assessing many types of social structures (Autry and Griffiths, 2008), and builds on Network Theory, an established theoretical framework which has traditionally focused on actors and the linkages that comprise a focal network (Chicksand et al., 2012). SNT assesses multiple structural connections and the relationships these connections represent (Autry and Griffiths, 2008). Its structural component, as presented in Figure 13, tends to employ primarily quantitative data collection methods and analytical techniques, suggesting a more objective philosophy; the relational component in contrast is more subjective and qualitative in nature, important to understanding network complexity, but is currently less developed (Bernardes, 2010).

SNT’s emphasis is on connections and relationships rather than more tangible, physical resources, processes and practices, which tend to dominate in the supply chain literature (Burgess et al., 2006). SNT considers the inter-relationships between actors and the ties between actors within a network framework, and how patterns of ties contribute to organisational outcomes (Wills-Johnson, 2008). The supply chain literature is becoming aware of potential contributions of network analysis, as social networks can facilitate interaction across organisational boundaries (Galaskiewicz, 2011).
Social network analysis focuses on the different types and strengths of relationships and how they provide context for organisational action and decision-making (Galaskiewicz, 2011), so aligning with the outputs of the RBV. The strength of the ties between actors in networks is a key focus of social network research with tie strength best represented by intangible social and/or business relationships; ties can be strong, weak or absent (Autry and Griffiths, 2008). Social network ties are considered important in building trust, which can then facilitate information exchange, cooperation and coordination, but there is also a danger that ties can be too thick or ‘chummy’ (Galaskiewicz, 2011).

<table>
<thead>
<tr>
<th>Social Network Theory</th>
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<tbody>
<tr>
<td><strong>Organisational outcomes:</strong></td>
</tr>
<tr>
<td>Relational</td>
</tr>
<tr>
<td>- Strength of ties – ‘friendships’, reciprocity</td>
</tr>
<tr>
<td>- Trust – actors in network trust each other, mitigate risk</td>
</tr>
<tr>
<td>- Social meanings – how relationships are understood &amp; acted upon</td>
</tr>
<tr>
<td>Structural</td>
</tr>
<tr>
<td>- Content flows – movement/coordination of materials, products &amp; information</td>
</tr>
<tr>
<td>- Density – proportion of active network connections</td>
</tr>
</tbody>
</table>

Figure 13: Social Network Theory

SNT incorporates relational and structural network concepts to understand organisational outcomes (Autry and Griffiths, 2008), as indicated in Figure 13, and can map both relationships and content flows through network analysis. It is considered that makes networks work are the underlying social meanings of the relationships in the network; ‘how networks are structured matters, but it is the relationships, and what goes along with them that matters much more’ (Galaskiewicz, 2011, p.7). The content of social networks can be seen as a way of describing the meanings, which people attach to relationships, and the understandings they have about the implications that their involvement has for their actions and behaviours, in respect to those relationships. For example, if a network actor considers a relationship as a friendship, they are likely to engage in activities and behaviours, which they perceive to be appropriate to those of a friend (Neergaard et al., 2005).
Supply chains represent networks of organisations and as SSCM has evolved from SCM the theoretical lens of SNT is relevant to understanding how sustainability can be addressed across complex supplier networks and the role that supplier relationships can play in achieving environmental and social performance. The structural component illustrated in Figure 13 applies to how suppliers are connected within a network and what supply interactions occur between suppliers in terms of information, materials, components etc., while the relational component focuses explicitly on the social interactions and their outcomes within a network.

SNT represents a powerful tool for analysing the content, pattern and connections of relationships in a network (Choi and Kim, 2008), and arguably is focused on answering how and why questions (Fattore et al., 2009), which feature strongly in this research. However, a key criticism of SNT is that it lacks theoretical understanding and is merely descriptive (Borgatti et al., 2009), that networks tend to be viewed as static rather than changing over time, and as the unit of analysis in SNT is the connection of individuals, how they are connected is more important than the actual nature and value of the network relationships (Perry-Smith and Shalley, 2003).

This may be reflective of the currently more quantitative nature and structural focus of SNT (Bernardes, 2010); structures of connections are more easily mapped, especially if viewed statically, and mechanisms have been developed to facilitate this process (Borgatti et al., 2009), while the relationships and interactions that create and enable these connections are more intangible. This implies similar criticism to the RBV in terms of the extent to which the theory can be tested and its components observed/measured. However SNT is a developing theory, applicable across multiple disciplines, and description represents a key component of the research process (Meredith et al., 1989) and the understanding of complex phenomena such as SSCM.

While it employs both quantitative and qualitative techniques, the former enabling a level of measurability within the theory, SNT’s social psychology foundations (Scott, 2000) and strong
emphasis on social structures positions it within a constructivist ontology, where actors create their own constructs of reality rather than being independent from an established view of reality (Grix, 2002); this aligns with epistemologies that enable these constructs of reality to be interpreted. The key purpose of SNT is to understand the richness and complexity of networks, and how and why they work, rather than present a purely objective reality or knowledge of network practice (Westnes, 2007).

The relational outcomes of SNT, while currently less developed than its more measurable structural component, align strongly with the social dimension of SSCM, through a focus on trust and socially constructed meanings, but also offer the potential for harnessing these interactions to address environmental and social performance. SMEs are more likely to rely on long-term, trust-based supplier relationships to overcome size-related constraints, so this theoretical lens offers the potential for understanding how the structure and nature relationships contribute to the achievement of sustainability across a complex, multi-tiered supply network. Social capital is considered an output from the relational component of SNT (Wills-Johnson, 2008), and it is the value of this and the relationships that generate it that form the focus of Social Capital Theory.

**Social Capital Theory**

Social Capital Theory (SCT) represents a specific aspect of the social network literature (Wills-Johnson, 2008) and is considered a useful perspective for theorising the nature of connection and cooperation between organisations (Starkey and Tempest, 2004). Social capital affects organisational processes (Jansen et al., 2011) and differs from the physical, human and organisational capitals presented in the RBV (Barney, 1991) as it is not located within a certain place, but is embedded in relationships. It can increase and decrease, but limited social capital is usually considered to be detrimental (Kontinen and Ojala, 2012). Like sustainability it can be interpreted as having multiple dimensions as well as strong and weak positions (Pirolo and Presutti, 2010).
SCT is not yet considered to be rich theoretically (Williams and Durrance, 2008) and while it sits within the social sciences, unlike the RBV it has been applied to rather than explicitly evolved from business management theories. The concept has been criticised by theorists from across the social sciences, including economists and organisational theorists (Baron and Hannon, 1994), as being ambiguous, tautological and metaphorical rather than “real” (Thomson, 2003). However its relational emphasis addresses a key criticism of the SNT, where the structural component is currently more developed, and it offers potential for more fully understanding the nature and quality of relationships.

Social capital is defined as the ‘sum of the actual and potential resources within, available through, and derived from the network of relationships by an individual or social unit’ (Nahapiet and Ghoshal, 1998, p.243). Lin et al. (2001) see these resources as being embedded in the social structure of relationships and they can be accessed or mobilised in purposive actions. This definitional emphasis on resources links social capital with the RBV of the firm, but also recognises the key importance of relationships for creating and harnessing these resources, an area still underexplored in the SSCM literature.

<table>
<thead>
<tr>
<th>Social Capital Theory</th>
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<tbody>
<tr>
<td><strong>Resources</strong> embedded in social structure of relationships</td>
</tr>
<tr>
<td>• Beliefs</td>
</tr>
<tr>
<td>• Trust</td>
</tr>
<tr>
<td>• Norms</td>
</tr>
<tr>
<td>• Rules</td>
</tr>
<tr>
<td>• Networks</td>
</tr>
<tr>
<td>Structural</td>
</tr>
<tr>
<td>• Pattern of connections – ties between individuals, network configuration</td>
</tr>
<tr>
<td>Relational-cognitive</td>
</tr>
<tr>
<td>• Personal relationships</td>
</tr>
<tr>
<td>• History of interactions/length of relationships</td>
</tr>
<tr>
<td>• Shared representation, interpretations &amp; systems of meaning</td>
</tr>
<tr>
<td>• Meaningful communication</td>
</tr>
</tbody>
</table>

**Figure 14: Social Capital Theory**

The resources of social capital are trust, rules, norms and collective action and this translates into 5 parallel forms of social capital namely trust, beliefs, norms, rules and networks (McElroy et al., 2006), illustrated in Figure 14. It has been traditionally conceptualised as the 2 main
network configurations of structural and relational-cognitive. The relational-cognitive configuration represents the extent to which relationships are based on trust, expectations of reciprocity and cognitive identification (Pirolo and Presutti, 2010) and contributes to the strength of ties and embeddedness highlighted in SNT (Autry and Griffiths, 2008). There are 4 key criteria for identifying the strength of social capital; frequency of contacts, the emotional intensity of the relationship, the degree of intimacy and the reciprocal commitments between actors in the relationship (Pirolo and Presutti, 2010).

There are 3 forms of social capital. Structural is objective and represents the overall pattern of impersonal connections between individuals, addressing properties such as network density; relational refers to kinds of personal relationships developed through a history of interactions, and key aspects are respect, friendship and trust, while cognitive indicates shared representation, interpretation and systems of meaning among people in the same network and is the least represented in social capital research (Prasad et al., 2012, Nahapiet and Ghoshal, 1998). Social capital can be seen as an enduring source of advantage and a valuable intangible asset, and a growing body of research suggests that building social capital through supplier relationships can strengthen supply chain performance (Carey and Lawson, 2011).

SCT builds on the RBV, specifically focusing on the resources that are generated through ongoing relationships, and on SNT through its application of structural and relational dimensions. There is a stronger emphasis on the personal dimension of relationships, in terms of individual and shared beliefs, and how these translate into embedded intangible resources, such as trust and norms. Owner-manager principles and beliefs were a key theme within the reviewed SME literature, and in the SSCM context can relate to specific environmental and social performance commitments; using social capital as a theoretical lens will allow the role of shared beliefs/values/principles on achieving SSCM to be explored and the impact of personal ‘friendships’ within a supply chain. There is also recognition that while social capital is a relevant theory in this context limited attention has been applied to its role at the supply chain level (Autry and Griffiths, 2008).
SCT has 2 key approaches, and can enable a richer view of a phenomenon than SNT, which focuses primarily on how actors within the network are connected (Perry-Smith and Shalley, 2003). SCT places greater emphasis on the value of relationships, a recognised output of SNT, and views both the network structure and its content; however SCT receives the same tautological criticisms as the RBV and SNT since tangible evidence of the value and nature of relationships and social capital cannot be easily produced or tested. Content views of SCT, which focus specifically on the quality of relationships, in terms of trust, reciprocity, fairness and history of interaction, are also considered vague (Thomson, 2003).

Theories of financial and natural capital have typically been ontologically objective as they can be measured/are tangible; however while the recent generation of capital theories, including SCT, share most of the underlying assumptions of classical theories, the components that create value are intangible rather than tangible (Thomson, 2003). This positions SCT ontologically within constructivism, and its emphasis on how the nature of relationships creates value and generates social capital aligns it with interpretivist/relational epistemologies.

Consistent with social constructivist theories it is argued that actors construct social capital, which then manifests itself as social structures (Thomson, 2003). This means that ontologically there is a different relationship among theoretical constructs whereby nothing is assumed (Maxwell, 2012) and there is no objective view of reality. A core premise of SCT is that of embeddedness, where actors are not perfectly rational because they are embedded in social structures (Autry and Griffiths, 2008), and capital is seen as both a socially produced element and a relation or structure (Thomson, 2003).

This highlights the highly subjective and interpretive nature of SCT, even in comparison to the RBV and SNT, and the criticisms and challenges that arise as a result. In its current status SCT can be considered descriptive and potentially vague (Thomson, 2003), and research techniques are highly qualitative (Grix, 2002). However the quality components that the theory has developed (Figure 14), while not easily measurable, are valid and relevant to all
forms of relationship, whether between individuals or organisations. SCT applied to supply chain relationships and the role that trust, reciprocity and shared meanings plays is nascent, but has great potential for understanding sustainable supply chains (Autry and Griffiths, 2008). It offers a valuable perspective that goes beyond traditional, economically-focused business approaches (Carey and Lawson, 2011), which dominate in current research. Social capital can represent the more intangible value of a firm’s network of relationships with its suppliers, customers and partners. It facilitates resource exchange and innovation, aids creation of intellectual capital, strengthens supplier relationships and ensures business survival (Prasad et al., 2012). Social capital can generate better information flows (Halpern, 2005) and is considered to be the ‘relational glue’ that underlies effective supply chains (McGrath and Sparks, 2005, P.216).

**Linking the Lenses**

The 3 theoretical lenses identified from the literature reviews have each been described and critiqued, and their relevance to SSCM in the SME context discussed. While each has different strengths and weaknesses, a ‘common sense’, more subjective approach (Westnes, 2007) underpins all 3 lenses. This aligns with the purpose of this research, which is to more fully understand and make sense of SSCM, and solve human problems (Powell, 2001).

![Figure 15: Interaction between chosen Theoretical Lenses](image)
Figure 15 visually summarises the key connections between the components of each lens, and emphasises how they are soft rather than hard theories through their collective focus on relationships, social complexity and shared meanings and embeddedness. This contrasts with the current focus on hard, quantifiable processes within the SSCM literature, and justifies the need to use theories that will develop a richer, more subjective view of the field and its more intangible, tacit and human components.

The critiques of the 3 theoretical lenses highlight that they come from different backgrounds, and only the RBV has explicitly evolved from management theory; none is a purely operational theory. They are all relatively nascent and still developing, and can be criticised for being merely descriptive (Borgatti et al., 2009), possessing a lack of theoretical understanding or native theory, and tautology through issues of falsifiability of statements, and the unobservable nature of the components of each theory (Westnes, 2007).

Operations theories and methods tend to be more objective philosophically and typically focus more on quantifiable, statistical techniques. Consequently there is criticism that operations management research typically applies a narrow range of theories that deal with the abstract not reality, and constrain its understanding of more complex and social/human phenomenon within the field (Meredith et al., 1989). Table 16 compares the underlying ontologies and epistemologies of the 3 chosen theories, and while differences exist they are philosophically compatible as they are all fundamentally ‘real world’ philosophies that acknowledge a degree of subjectivity.

<table>
<thead>
<tr>
<th>Theoretical Lens</th>
<th>Foundation</th>
<th>Ontology</th>
<th>Epistemology</th>
</tr>
</thead>
<tbody>
<tr>
<td>RBV</td>
<td>Strategy/strategic management</td>
<td>Realism</td>
<td>Pragmatism/Interpretivism</td>
</tr>
<tr>
<td>SNT</td>
<td>Social sciences/social psychology</td>
<td>Constructivism</td>
<td>Interpretivist/relational</td>
</tr>
<tr>
<td>SCT</td>
<td>Social sciences</td>
<td>Social constructivism</td>
<td>Relational</td>
</tr>
</tbody>
</table>

Table 16: Philosophies of the chosen Theoretical Lenses

The RBV sits between objective and constructivist ontologies, but is not purely scientific or positivist in nature as theoretically it recognises subjective and human elements, especially
tacit resources and capabilities, and social complexity; while a pragmatic, problem-solving epistemology tends to be the norm in the RBV, its recognition of these components also lends it towards interpretive approaches. Both SCT and SNT have constructivist ontologies, and while this translates into epistemologies that support interpretation of constructed realities, SCT applies a stronger focus on relational understanding through its focus on the value of social capital and how it is created through relationships. As a result of their underlying philosophies the 3 lenses also tend to employ qualitative techniques that enable a rich understanding of a studied phenomenon.

By employing these 3 specific theoretical lenses an original conceptual model for researching and understanding SSCM has been developed and it makes an explicit theoretical contribution to the field. While current literature recognises some of the links and overlaps between SCT and SNT, they have not been used in conjunction, therefore the application of these 2 social sciences lenses together with a more established, firm focused management theory represents a highly novel and original theoretical approach.

While the RBV is potentially the more developed and focused theory, and has foundations in management theory, SCT encapsulates elements of RBV and SNT, and social capital is a dominant concept in the reviewed SME literature. The SME context forms the focus of this research and while it is not yet theoretically rich (Williams and Durrance, 2008) and open to interpretation, SCT applies the strongest emphasis on relationships, and how their value is harnessed, a key gap in current SSCM research. The concept of embeddedness is also more fully articulated, particularly relevant to SME principles and relationships, and the more intangible components of SSCM.

Despite the challenges highlighted in the critique these facets make SCT the strongest of the 3 lenses for this research, and through its links to the RBV and SNT offers potential for the richest and most holistic view of the phenomenon. Like SSCM it is a dynamic and evolving concept, and this research makes a contribution to the theoretical development of SCT, and its
more constructive and subjective nature can overcome some of the constraints associated with more traditional OM research (Meredith et al., 1989). While SCT is not considered a pure management or operational theory its explanatory richness enables it to be employed in 2 complementary ways; through interpretive tools and understandings that enable sense to be made of complex phenomena (Twyoniak, 2007) and tools that can offer practical solutions to human problems (Powell, 2001).

**Conclusion**

This chapter has presented 3 specific and interrelated theoretical lenses applicable to understanding sustainability within the context of a firm and its supply chain. The RBV is a firm-centric theory that provides a framework for understanding and harnessing strategic resources and represents an important management theory in the SCM and SSCM disciplines (Chicksand et al., 2012); the tacit and intangible aspects of these resources can provide a rare and inimitable competitive advantage and the social complexity of a firm’s supply chain interactions and relationships is recognised as a key contributor. SCT applies an emphasis on the social capital resources of trust, rules, norms and collective action (McElroy et al., 2006) that can be derived from a network of relationships (Nahapiet and Ghoshal, 1998) and is therefore useful for formalising the notion of intangible rather than tangible assets and resources within the RBV (Wills-Johnson, 2008).

SCT has been described as a growth area in organisational network research and this field has increasingly turned its focus from social networks to social capital, arguing that social capital is the value of a network’s form and content (Neergaard et al., 2005). Social capital was well represented in the reviewed SME literature, but not specifically in conjunction with supply chains; SCM and SSCM research has paid limited attention to social capital elements that are critical to SMEs (Prasad et al., 2012) and yet SCT has significant potential for supply chain analysis in all sizes of organisation (Autry and Griffiths, 2008). Social capital has a significant role to play in reinforcing SME performance both within the firm and across its supply chain.
(Pirolo and Presutti, 2010), and decision makers in SMEs rely heavily on social ties (Jansen et al., 2011).

SNT may equally provide an appropriate analytical framework for identifying social capital at the firm level and considering the impact that social capital may have on actions and behaviours. A social network is conceptualised as possessing both structural and interactional dimensions (Autry and Griffiths, 2008), which aligns with the different forms of social capital; it suggests that by understanding the network within which a firm is embedded, much can be learned about its social capital (Neergaard et al., 2005). Social network theory represents one of a number of relevant theories increasingly applied to the SSCM discipline (Chicksand et al., 2012).

There is a recognised theoretical distortion towards profit maximisation and economic performance (Pagell and Shevchenko, 2014); this was reflected across the literature reviews, which indicate that SSCM research to date has emphasised the environmental dimension’s interaction with economic performance. While the importance of supply chain relationships is acknowledged, it is underdeveloped in comparison to more tangible, quantifiable operational processes and practices. The use of multiple theoretical perspectives could address this distortion; while the 3 lenses maintain a relevance to economic performance, they do not use it as their primary focus, and SMEs are more about the individual owner-manager and principles than the prevalent macro competitive paradigm, which can enable a multi-level, holistic understanding of SSCM (Amundson, 1998).

The lenses are philosophically compatible and underpinned by a strong recognition and understanding of intangible and tacit resources and capabilities, and the contribution that is made through the social complexity of supply chain/network relationships and the network configuration (Nahapiet and Ghoshal, 1998). Embeddedness is central to SNT and SCT, and its premise is that the structure of, and behaviours within, the network will influence organisational outcomes and create meaning in relationships (Tate et al., 2013). It represents
the extent to which specific resources, including trust and beliefs, are embedded within the firm and its supply chain relationships, and aligns with the organisational component of social performance, illustrated in Carter and Rogers’ SSCM framework (Chapter 4, Figure 5).

The chosen theories offer potential for bridging key gaps in SSCM research around operationalising and balancing social with environmental and economic performance, and the use of trustful, long-term and collaborative supplier relationships to create and harness necessary resources. Understanding how this can be achieved in SMEs, which have limited resources, but potentially a more embedded approach to social responsibility represents a relevant SSCM research perspective.
Chapter 7: The Clothing Industry

Introduction

The European Commission defines the clothing industry as a diverse and heterogeneous industry which involves a wide range of activities that transform fibres into yarns, yarns into fabrics and these into clothing (Gardetti and Torres, 2013). While many industries have significant environmental and/or social impacts, the scale and scope of these issues throughout highly complex global supply chains makes the clothing industry, ‘one of the industries with the longest and most complicated industrial chains of the manufacturing industry’ (DEFRA, 2011, p.4) a highly relevant research area. More than $1 trillion per annum is spent on clothing globally and more than 26 million people are employed in the industry with particular growth in jobs for women in poor countries. It is a major user of chemicals and a leading violator of child labour laws (Cooperrider and Fry, 2012).

With the relaxation of trade quotas in 1985, years of UK manufacturing heritage were replaced by a clothing market highly reliant on imports. The UK clothing industry increasingly has become less about making clothes than selling them; this has contributed heavily to the trend of ‘fast fashion’ that dominates the high street (Siegle, 2011). There is currently no other European market where fast fashion is more commonplace than in the UK (Pasquenelli & Ravasio in Gardetti and Torres, 2013). The industry is dominated by large multiple retailers, which has created a highly competitive mass market focused on fast fashion, value retailers such as Primark and supermarket clothing. This has contributed to the significant decrease in the cost of clothing (Ritch and Schroder, 2012), which in conjunction with increased purchase frequency has developed a ‘throwaway’ attitude to clothing. This has resulted in a significantly increased rate of garment disposal (Allwood et al., 2006); from the estimated 35kg of clothing and textiles that each UK consumer purchases annually on average, approximately 75% goes to landfill (de Brito et al., 2008).
Globalisation trends have made the supply chains of UK focal firms broader and more international (de Brito et al., 2008) and the UK clothing industry has seen the outsourcing of most if not all production activities to overseas suppliers (Bergvall-Forsberg and Towers, 2007). The clothing sector is organisationally complex (Forman and Sogaard Jorgensen, 2004) and supply chains are frequently very long with many different tiers; issues around ethical behaviour is complicated by extensive subcontracting in this industry (Lobel, 2006). They are dominated by large, powerful retailers while at the other end are large numbers of small manufacturers with limited power (Bruce et al., 2004). The power concentrates in those companies selling products to the end consumers, consumers who are increasingly demanding customised products within shortening lifecycles (Seuring, 2001).

This has driven a significant reduction in supply chain lead times even though production is increasingly located overseas, adding time and complexity to processes. The successful entry into the UK clothing market of Swedish retailer H&M, and Spanish company Zara, which has its fashion supply chain products located close to its headquarters, enabling them to respond to the demands of fast fashion has increased the significance of quick response for UK retailers (Hughes, 2005). High street fashion retailer Topshop for example has reduced its production period from 9 to 6 weeks (Siegle, 2011) and is able to increase production of popular items whilst ceasing production on poor sellers (Hughes, 2005).

The clothing industry can be seen as an extreme case for managing environmental issues due to the frequent shifts in product portfolio and its internationally organised product chains that substantially influence and extend the stages where environmental impacts can occur. Suppliers in both developed and developing countries are involved in these extended supply chains adding social and cultural considerations, as well as differences between government regulations. Today not only are environmental standards a key focus in clothing supply chains, but also key social issues such as workers’ rights, working conditions and child labour (Forman and Sogaard Jorgensen, 2004). This also extends to the impacts on societal capital, i.e. society
as a whole, which benefits both individuals and their communities through education, health and welfare and social development (Dyllick and Hockerts, 2002).

The Clothing Supply Chain

Clothing products begin as natural (e.g. cotton, wool), man-made using cellulosics (e.g. viscose) or synthetic fibres using oil (e.g. polyester, nylon). There are 6 key clothing supply chain levels: fibre production which includes the growing, harvesting and cleaning of fibres; spinning, where fibres are converted into yarn; weaving or knitting of yarn into fabric; dyeing and finishing of fabric; garment production, and finally the distribution and retailing of the finished product (Allwood et al., 2006). Ecological and social impacts can occur at all of these levels, but at different intensities (Goldbach et al., 2003), as illustrated in Figure 16.

<table>
<thead>
<tr>
<th>Fibre Production (natural &amp; synthetic)</th>
<th>Spinning Fibre into yarn</th>
<th>Knitting/weaving Yarn into fabric</th>
<th>Wet Treatment (washing, dyeing)</th>
<th>Manufacture Finished garments</th>
<th>Distribution Retailer &amp; customer</th>
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<td>Fair pricing</td>
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Figure 16: The Clothing Supply Chain and its Environmental and Social Impacts

Most of the major environmental impacts in clothing supply chains relate to the use of energy and toxic chemicals, while from the social perspective the concerns are around fair treatment, working conditions, worker rights and child labour (Allwood et al., 2006). Clothing production processes make intense use of chemical products and natural resources (land and water), generating a high environmental impact (Fletcher, 2008). Furthermore, the search for lower cost production has led to a dramatic relocation of production sites towards the Far East (de Brito et al., 2008), which brings social and regulatory implications. There has been a growing response to many of these supply chain issues and since the 1990s a number of NGOs have been established to actively encourage and campaign for ‘ethical’ clothing e.g. the Clean Clothes Campaign and Labour Behind the Label (Goworek, 2011).
Organically grown fibres are actively promoted by pro-sustainability organisations (de Brito et al., 2008) because of their reduced impact on the environment. Organic cotton became commercially available in the early 1990s (Goworek, 2011) and is grown without the use of synthetic pesticides and defoliated by natural means. Interest is increasing in this raw material due to growing awareness of problems of soil toxicity and the harmful effects on workers from conventional pesticides. However despite its positive benefits to the environment and continued growth in the sales of organic cotton products it still represents less than 1% of total world cotton production (Allwood et al., 2006), while conventional cotton farming is responsible for 11% of the world’s pesticide consumption (Goworek et al., 2012).

Fairtrade is a well-developed social practice that as well as seeking fairer relationships with suppliers, aims to establish more direct relationships between groups of producers and consumers (Barratt Brown, 1993). It provides an alternative model of international trade based on better trading conditions and price, as well as educating consumers about the negative effects of traditional trade (Davies and Crane, 2010). It has the underlying ‘people’ principles of good working standards and conditions for workers, but also acknowledges the need to preserve resources, assess environmental impacts and cooperate where resources are trans-boundary (Strong, 1997). Fairtrade cotton farmers are paid a minimum price plus a premium that contributes to regional development projects (Goworek, 2011).

Organic and Fairtrade cotton are currently the most prominent, recognisable approaches to sustainability in the clothing industry. However they relate most specifically to the raw material stage of a natural fibre and do not explicitly translate their principles along the entire supply chain. The extreme negative impacts of conventional cotton production are well acknowledged and organic and Fairtrade contribute to addressing these important issues; however they also echo the current emphasis on the ‘greening’ of individual processes/products through the bias towards pollution prevention. As Figure 16 illustrates, pollution also occurs at the washing and dyeing stage of the clothing supply chain; in addition
waste is generated at all production stages, as are issues of energy use, whilst how workers are treated permeates the whole supply chain.

While the media and NGOs have brought manufacturing issues such as pollution and working conditions to greater awareness the issues relating to sustainability extend well beyond the purchasing stage (Goworek et al., 2012) to encompass the care of a product and its responsible disposal; as previously highlighted at least 75% of disposed clothing currently goes to landfill and maintains a linear rather than a closed loop supply chain. Recycling and reuse contribute to closed loop models and are proactive methods of addressing sustainability. These can have a positive impact on a product’s lifecycle and address the issue of resource availability, which is especially important as virgin resources become scarcer (Sarkis et al., 2010b). Recycled fibre represents a low-impact alternative to other fibre sources, with reduced energy and resource consumption as well as chemical consumption if it is not over-dyed (Fletcher, 2008).

A major challenge in creating sustainable supply chains, especially in such a complex industry, is not in creating standards or technical measures, but the management and coordination of all actors (Goldbach et al., 2003). Organic cotton, Fairtrade and the recycling of synthetic products into useable raw materials are all positive recognitions of the importance of operating more responsibly, but there is a need to move away from simply changing processes, to embedding sustainability in practice and in the relationships that connect the stages and promote supply chain transparency. While collaborative long-term relationships are considered vital for SSCM, the clothing industry has traditionally been highly transactional in nature, focusing on minimising costs and, while supply chain partnerships exist, there are questions as to whether these are mutually beneficial relationships (Bruce et al., 2004).

Industry Responses to Sustainability

There are visible changes to how organisations in the retail industry as a whole are responding to issues of environmental sustainability when it comes to clothing. For example, Wal-Mart has become the biggest consumer of organic cotton for apparel products. This move has required
the world’s biggest retailer to build strong relationships with its key suppliers throughout the entire supply chain, with the goal of making it more transparent (Speer, 2007). UK clothing retailers have recognised the growing importance of sustainability and consumers are increasingly demanding socially and environmentally responsible products; ethical consumption is ‘the taking of purchase decisions not only on the basis of personal interests, but also on the basis of the interests of society and the environment’ (Jobber, 2006, p.217). Larger retailers have responded to this demand by launching sustainable ranges and there has also been a growth of small-scale ethical retailers within the sector (Goworek et al., 2012).

Industry responses to environmental sustainability are varied; active clothing company Howies produces garments from recycled cotton yarn (Goworek et al., 2012), while leading UK retailer Marks and Spencer has committed to every one of its products having a ‘Plan A’ sustainability feature by 2015, and looks at all stages of its complex supply chain network to enable this (Grayson, 2011). Sports brand Nike announced in 2011 that it would eliminate all releases of hazardous chemicals across its global supply chain by 2020 (www.greenbiz.com, 2013), and major denim jeans retailer, Levis has developed products that significantly reduce the amount of water used in the processing stages (www.greenbiz.com, 2010).

Cleaning outputs and increasing recycling are viewed by the industry as ways to boost environmental performance in clothing supply chains (de Brito et al., 2008) and a ‘fibre to final product’ approach needs to permeate how organisations address environmental issues (Kogg, 2003). However the process of greening a clothing supply chain is highly complex (Kogg, 2003), as there are environmental considerations at all stages to include product design, raw materials, weaving, dyeing, manufacturing, packaging, transport, and disposal, as illustrated in Figure 16. As far as finished ‘green’ products are concerned they have also tended to occupy niche sectors, as despite the increased demand for environmentally responsible products, consumers are generally unwilling to pay more for them (Seuring, 2001).
A well known and commonly available recycling method utilised in the industry is the conversion of plastic PET bottles into polyester fibre (Fletcher, 2008) and this has been used by mainstream retailers such as Marks and Spencer in a range of clothing products. Leading fibre supplier Teijin (www.teijin.co.jp) has extended this technology to allow worn polyester garments to be 100% recycled back into polyester fibre. However economies of scale need to be sufficient to make closing the loop viable (Sarkis et al., 2010b) and the return of used products to the manufacturer by the end consumer is a key issue. Translating the closed loop model into mainstream, commercial supply chains is an important challenge for the UK clothing industry, but there are signs that the practices of re-use and recycling are becoming sources of added value in supply chains, creating new products from ‘waste’ (Fletcher, 2008).

From Somewhere (www.fromsomewhere.co.uk) progresses the closed loop model from specific customer niches into mainstream retail, transforming ‘liability stock’, that is, finished fabrics which manufacturers order as a contingency, into affordable fashion clothing which is sold via major retailers. Their recent collaboration with F&F at Tesco has enabled them to apply a replicable strategy to a highly commercial supply chain, and illustrates that closed loops can be achieved at a scale to make a tangible impact. Other approaches to the recycling, reuse and disposal of used clothing include Marks and Spencer’s collaboration with Oxfam to offer store vouchers in exchange for clothing donations (Fletcher, 2008) and the charity TRAID selects appropriate and high quality garments from its recycling banks, which are then sold through its retail chain, encouraging garment re-use (Goworek et al., 2012).

When addressing the social dimension in clothing supply chains there are 3 key social issues, namely wages, working hours and working conditions and there are 3 aspects of the clothing supply chain which negatively affect a firm’s ability to uphold its ethical requirements. These 3 aspects are pressures to shorten product lead times i.e. time from order to product delivery, to improve the flexibility of response, for example through changing orders/products mid-season, and achieving the lowest product cost; all 3 compromise ethical behaviour and can have a negative impact on the workers in a supply chain (Perry in Gardetti and Torres, 2013).
The key issues around how workers are treated are frequently highlighted at the product assembly stage of the supply chain as this is an extremely labour intensive stage and sewing makes up 30% of the whole garment cost (Perry in Gardetti and Torres, 2013); the legal minimum wage in developing countries is often below the living wage and sewers frequently work without any formal contracts (Fletcher, 2008). However, labour issues are prevalent throughout the supply chain; farm workers are exposed to toxic pesticides, child labour is commonplace for cotton picking in countries with state cotton quotas, and low prices are typically paid to small farm owners (Fletcher and Grose, 2012).

Violations of workers’ rights were brought to the public’s attention in the 1990s and there has been growing pressure for the clothing sector to improve labour rights and working conditions (Fletcher, 2008). There have been a number of formalised industry responses to these social issues including codes of conduct, standards and labels (Larsson et al. in Gardetti and Torres, 2013); codes of conduct are more applicable at the industry level, while certification is organisation-related and labels more product-related (van Bommel in Gardetti and Torres, 2013).

Codes of conduct and standards that specifically address the social dimension include the SA 8000 Standard, introduced by Social Accountability International. It employs initiatives that emphasise worker education and training, the right to form a union and the active involvement of workers, NGOs and independent auditors in the monitoring of standards (Fletcher, 2008). The Global Compact is a joint initiative between the United Nations Development Project (UNDP), the Economic Commission for Latin America and the Caribbean (ECLAC) and the International Labour Organisation (ILO); it aims to foster the alignment of business operations with universally agreed and internationally applicable ethical objectives (Gardetti and Torres, 2013). The Ethical Trading Initiative (ETI) is a UK-based industry body formed from an alliance of fashion retailers, trade unions and voluntary organisations including Marks and Spencer and Sainsbury’s, which aims to improve the ethical standards of clothing production (Goworek et al., 2012).
The Fairtrade Mark and labelling system was introduced for seed cotton in 2005 and also incorporates some environmental criteria as a means to minimise the use of agrochemicals and prohibit the use of hazardous pesticides (Fletcher, 2008). European not-for-profit organisation Made-By has the goal of full supply chain transparency, and data on the label it has developed gives consumers the opportunity to see the full production history of a product (Fletcher, 2008). Environmental certification methods include ISO 14001, a process-oriented system that certifies an organisation has a satisfactory Environmental Management System (EMS) (Harris, 2007), as well as certifications that relate to specific materials or processes employed by organisation, such as the Global Organic Textiles Standard (GOTS).

Consumers rely on retailers to source and label environmentally and/or socially responsible products, and it can have implications for the reputation and level of trust consumers have in a retailer. Major retailers Primark, Gap and Wal-Mart have all experienced negative impacts on their reputation through NGO exposures of unethical practice in their supply chains despite their commitment to ethical behaviour (Ritch and Schroder, 2012). Equally standards, certifications and audits alone do not guarantee responsible supply chain behaviour. Despite established ILO standards violations remain endemic in the clothing industry, especially among subcontractors and home workers; violations of workers rights for example still occur in factories that have passed audits (Fletcher, 2008).

Furthermore the myriad unsupported claims on ‘environmentally-friendly’ products, including clothing has resulted in consumer scepticism about the validity of the ‘green’ properties of products (Harris, 2007). The concept of environmental sustainability can be abused and used as a means to hide business practices in ‘the pleasing green packaging of sustainable development’ (Luke, 2005), a view reiterated by Moon (2007) who recognises the danger of sustainability being used for image-making purposes.

The clothing industry and research related to sustainability in this specific sector has to date tended to focus on large, well-known retailers and brands (Fletcher and Grose, 2012,
Birtwistle, 2007); it reflects an emphasis and greater awareness of the negative impacts associated with such organisations and the spotlight that has been directed on their unsustainable and unethical behaviour by NGOs and other stakeholders. The reputational impact of negative press, such as that experienced by Nike when it was revealed their suppliers were employing child labour (Ritch and Schroder, 2012), has prompted large clothing retailers to address sustainability in their supply chains, and accept responsibility for their supply chain practices.

This suggests that large clothing organisations are reacting primarily to external pressure, the enforcement of standards and certifications in the industry, and a need to protect brand image and reputation (Mahler, 2007), rather than explicitly designing and managing their supply chains for sustainability. Their greater and legal responsibility to shareholders and therefore profit maximisation (Jenkins, 2004) suggest an inherent skew towards economic performance, which aligns with the reviewed literature and reflects the challenge of balancing this dimension with environmental and social performance. SMEs are less well represented in current clothing industry research and yet due to their characteristics, which include reduced emphasis on profit maximisation and strong owner-manager principles they offer the potential for a more proactive, innovative, motivated and balanced response to sustainability, which could contribute to SSCM research.

**SMEs in Clothing Supply Chains**

The UK clothing industry has a number of large integrated companies and retailers, but is characterised by SMEs (Hughes, 2005); it is ‘fragmented and heterogeneous, dominated by small and medium enterprises (SMEs) which account for more than 80% of the market.’ (DEFRA, 2011, p.4). Not only does it have a relatively large proportion of its workforce in small firms, but also a large number of female workers and low wage levels (Rainnie, 1985). The sector commonly exhibits a lack of trust between large retailers and SMEs, which can restrict building of relationships, information sharing, innovation and long-term potential for success.
Buyers can exploit the imbalance of power, and there is a short-termist, often transactional approach to purchasing (Oxborrow and Brindley, 2012) within the industry.

While it is possible to establish a clothing SME relatively cheaply and operate it profitably, the power and constraints enforced by large retailers on SMEs stifles growth (Rainnie, 1985). This typifies the buyer-controlled supply chain and there is risk that SMEs, particularly manufacturing firms, may struggle to meet sustainability requirements and be eliminated from supply chains (Perry and Towers, 2009). Sustainability pioneers are also susceptible to takeover by large firms, which can compromise sustainability principles (Illge and Preuss, 2012).

The typical UK clothing SME is now essentially a sourcing operation with manufacturing based overseas, and price pressure, shorter product lifecycles and lead times have all increased supply chain pressure (Perry and Towers, 2009). There is however recognition in the sector that retaining a UK manufacturing base is desirable because it can maintain jobs and improves supply chain efficiency and control (Hughes, 2005). Due to size and resource constraints clothing SMEs are rarely vertically integrated (Arend and Wisner, 2005) and tend to focus on a specific function within the supply chain e.g. fibre production, dyeing. Effective SCM and strong supply chain relationships are therefore key for SMEs to compete in the industry and to address power imbalance they are more likely to pursue trust-based cooperative frameworks with similar SMEs (Arend and Wisner, 2005).

The UK ethical clothing industry consists mainly of small companies, which as highlighted in the SME literature have low economies of scale and therefore struggle to compete with larger, ‘fast fashion’ retailers (Goworek et al., 2012). The lack of resources associated with SMEs also limits the extent to which smaller firms can communicate their principles and activities to the consumer compared to larger organisations such as Tesco or Marks and Spencer, which can promote extensively to benefit both their public images and sales targets (Pasquenelli & Ravasio in Gardetti and Torres, 2013).
SMEs are particularly engaged in alternative responses to incorporating sustainability in clothing ranges including ‘upcycling’, which incorporates pre-consumer waste from textile manufacturers in clothing designs, evidenced by UK firm From Somewhere, and the use of post-use industrial waste in products as evidenced by Worn Again (Goworek et al., 2012). Charitable organisation TRAID Remade (www.traidremade.com) reconstructs second-hand clothing into customised one-offs, and Junky Styling (www.junkysyling.co.uk) has applied a similar approach to develop a unique fashion brand from recycled men’s suiting. Other clothing SMEs establish their whole business on strong sustainability principles; People Tree is committed to ‘slow fashion’ and aims to be 100% Fair Trade throughout its supply chain. It purchases Fair Trade products from marginalised producer groups in the developing world and uses organic cotton and sustainable materials.

**Conclusion**

Clothing and textiles is a long established industry and through the relaxing of trade quotas and increasingly global markets it has seen extensive outsourcing in the last 30 years, particularly of manufacturing functions, which has in turn created highly complex, multi-tiered global supply chains. Despite technological developments it remains a highly labour intensive industry that employs large numbers of women. It is therefore exposed to many of the social issues highlighted in the sustainability literature, including working conditions, fair treatment and child labour. The scale of the industry and the nature of its production processes also means it has a severe impact on the environment globally, through the high use of water and energy both in manufacturing and product after care, chemical pollution, waste generation and production of carbon emissions through global transport of materials, components and finished goods.

The clothing industry therefore represents a highly relevant research area for understanding how and why firms address sustainability in their supply chains, and the extent to which they integrate the 3 sustainability performance dimensions in their decision-making, practices and
principles. Major retailers are increasingly responding to environmental and social issues, through pressure from stakeholders and particularly NGOs, and recognition of their supply chain responsibilities. However the literature reviews have indicated that SMEs are an under-researched sector and beyond high profile high street brands the clothing industry is dominated by SMEs, both as focal firms and suppliers. SME focal firms are often established and promoted as having specific sustainability commitments rather than reacting to external pressure, and consequently provide an appropriate focus for this research.

Through my experience within the textile industry I have had the opportunity to work with and supply materials, equipment and finished goods to national and international SMEs, major high street retailers and a range of large organisations. The need to inform and interact with both customers and suppliers to ensure their requirements are met, and my personal interest in understanding more than just the processes involved, made me significantly aware of the importance of relationships within business.

I therefore have a natural inclination towards the ‘human’, less tangible elements of business, which has translated into a research focus on richer, more subjective views of organisational practice/behaviour. This has guided me towards a more constructivist ontological position and a preference for qualitative, interactive research techniques that develop rich understandings, interpretations and ‘stories’; these preferences align strongly with the chosen theoretical lenses and are discussed in more detail in the Methodology chapter.

My first-hand industry experiences have also significantly influenced my interest in and commitment to sustainable supply chain practice, and an emphasis on the role that supply chain relationships has to play in achieving sustainability. This has driven me to identify and pursue research philosophies, tools and techniques that can more fully capture the human/social elements of SSCM, develop a more complete and coordinated understanding of sustainable supply chains, and offer practical recommendations for managers facing the challenges of implementing sustainability within their organisations.
Chapter 8: Research Methodology

Introduction

The literature review chapters have illustrated that sustainability is an extensively discussed and debated concept, and it is an important and growing area for academic research. The reviewed literature repeatedly refers to the 3 sustainability dimensions of economy, environment and society, but few articles explicitly discuss the integration and balance of all 3. A win-win-win scenario is often presented as the result of Elkington’s (1994) 3BL approach, but there is limited empirical evidence of whether this is achievable, and how decisions can be made to ensure the 3 dimensions are adequately and appropriately addressed. The literature recognises that there is greater emphasis on the economic and environmental dimensions, with social sustainability and its interactions with the other dimensions currently underrepresented (Pagell and Wu, 2009, Schaefer, 2004, Sharma and Ruud, 2003).

Supply Chain Management (SCM) is a well-developed and highly relevant discipline for the implementation of sustainability goals and practices; Sustainable Supply Chain Management (SSCM) represents an important and growing facet of this research field and explicitly focuses on environmental and social performance and considers how integral relationships are to its achievement. SSCM research is still developing and to date has tended to focus on Large Enterprises (LEs) (Curran and Blackburn, 2001) and multiple industry perspectives (Carter and Easton, 2011). However SMEs represent 99% of companies worldwide (Curran and Blackburn, 2001, Pedersen, 2009) and their particular characteristics and challenges and how these relate to achieving SSCM represents a key research gap (Walker and Jones, 2012). SMEs provide a unique and important perspective and the issues they face in achieving sustainability (Davies and Crane, 2010) can contribute to both SSCM research and practice.

There is, therefore, substantial scope for developing and enhancing the SSCM concept and its frameworks through the proposed research and by applying a focus on SMEs and their supply chain practices, principles and commitments. The following chapter will detail the research
questions derived and developed from the series of literature reviews, and will explain and justify the methodology that will be employed to achieve the research aims and objectives.

**Research Aims, Objectives and Questions**

The fundamental goal of research is to create knowledge, structured information that is readily accessible and of lasting value (Melnyk and Handfield, 1998). The research question traditionally represents the knowledge gap which has to be filled in order to solve the research problem (a problem of operations, theory or learning) and achieve the research aims (de Weerd-Nederhof, 2001). The first stage of the research process involves defining the research question, which invariably requires contributing to building a body of knowledge and developing theory.

Theory is a systematic attempt to understand what is observable in the world and creates logic from observable facts. Ideally it will have both explanatory as well as predictive value, and will identify relevant variables and the connections between them (Key, 1999). It is ‘a set of well-developed concepts related through statements of relationship, which together constitute an integrated framework that can be used to explain or predict phenomena’ (Strauss and Corbin, 2008, p.15). Theory building requires rich description of the studied phenomena, which can be achieved through the collection and analysis of qualitative data (Mintzberg, 1979).

Deductive theory is a sequential process and typically begins with a strong grounding in related literature, identifies a gap and deduces a hypothesis that can then be empirically tested (Bryman and Bell, 2007). Inductive theory, the approach which is applied in this thesis, focuses on the process of discovery and has an intrinsic link to practical experience (Leonard and McAdam, 2001). The researcher begins with an area of study, which for this research is SSCM within SMEs, and allows the theory to emerge from the data; in ‘emergent strategies’ patterns are identified both during and after the research process (Mintzberg, 1979).

In reviewing the literature on sustainability and supply chains the focus has been on understanding how the concept of sustainability is framed and defined, and then applied in
supply chain practice, as indicated in the initial research aims and questions presented in Chapter 2. The review of SME literature recognises that SSCM is a relatively undeveloped area of research in this particular context, but also that SMEs offer valuable and new theoretical and practical perspectives on addressing environmental and social performance in supply chains.

It is the aim of this research to investigate and understand the concept of SSCM in the specific context of SMEs, in order to contribute to and develop existing SSCM research. Its objectives are to examine SSCM and supply chain frameworks to understand how the 3 sustainability performance dimensions are addressed in practice, and gain insight into the current skew towards the more tangible, measurable economic and environmental performance dimensions in SSCM (Preuss, 2005a, Vachon and Klassen, 2006a, Ashby et al., 2012). This research will explicitly attempt to understand the relatively neglected social dimension and how to embed social performance in SSCM; focusing on the unique perspectives offered by SMEs it will examine how such firms address social performance in their supply chain practice, in conjunction with economic and environmental performance, and explore how SME characteristics and supplier relationships contribute to SSCM in this context.

The research questions, which have evolved from the reviewed literature, are presented in Table 17 and emphasise the ‘how and why’ focus of the research. Each question aligns with a key theme or concept from the reviewed literature and is applied specifically to SMEs; where necessary or appropriate sub-questions have been developed to enable deeper interrogation of a theme. The research questions initially aim to understand how SMEs interpret sustainability and whether they explicitly respond to the 3 recognised dimensions of sustainability. The enquiry then progresses to how SMEs practice sustainability and structure/manage their supply chains, and finishes by focusing on potentially less tangible SSCM components which exist in the individual characteristics of SMEs and their supplier relationships.
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<th>Literature themes</th>
<th>Research questions</th>
<th>Sub Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defining sustainability</td>
<td>How do SMEs interpret sustainability?</td>
<td>Do SMEs recognise different dimensions of sustainability?</td>
</tr>
<tr>
<td>SSCM balance</td>
<td>How do SMEs approach the balance of economic, environmental and social performance?</td>
<td>What level of importance do they apply to each dimension and why?</td>
</tr>
<tr>
<td>Practice Performance</td>
<td>How do SMEs practice sustainability and how is performance measured?</td>
<td></td>
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<tr>
<td>SSCM</td>
<td>How do SMEs structure and manage their supply chains?</td>
<td>How does this contribute to addressing sustainability?</td>
</tr>
<tr>
<td>Supply chain relationships</td>
<td>How do SMEs approach their supply chain relationships and do these relationships contribute to successful SSCM?</td>
<td>What role does trust, commitment and shared understandings play?</td>
</tr>
<tr>
<td>SME characteristics</td>
<td>How do the specific characteristics of SMEs contribute to sustainable supply chain performance and why?</td>
<td>Are there SME characteristics that enable more effective SSCM?</td>
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Table 17: Research Questions

The extent to which these research questions are answerable depends both on their tangibility/specificity, and the potential answers which will be provided in response to the interview questions posed to each SME. Specific sustainable practices and definitions may differ between individual SMEs, for example, but through appropriate questioning can be recorded and compared. ‘Softer’ questions around the nature of relationships and whether certain characteristics influence SSCM in SMEs are more subjective and open to interpretation, both by the interviewees and within the data analysis itself.

While the interpretive nature of both the questions and the resulting data may present a challenge the purpose of the research is to gain deep insight into SSCM within this specific context, with an emphasis on the currently underexplored intangible dimension of social sustainability. While some of the research questions in Table 17 may not have a definitive answer, it is important not to constrain the research process through the use of ‘yes/no’
questions, as this will prevent the development of a rich picture of the studied phenomenon (Leonard and McAdam, 2001).

Within operations management there is a recognised need to balance academic rigour and professional relevance, with a focus purely on theory potentially limiting the understanding of complex phenomena, such as sustainability. This is emphasised by a call for ‘engaged scholarship’ where there is a process of engagement during the research process with practitioners (Thomas, 2009). A key contribution of this research will be the use of practitioner insight from the studied SMEs to inform and contribute to SSCM theory, and to use a methodology that will allow the key issues to emerge from interaction with firms (Eisenhardt and Graebner, 2007).

Ghoshal (2005) highlights that there has been a lack of impact of management research on operations practice, and that research has historically tended to adopt a ‘scientific’ model, which does not adequately address the more ‘human’ elements of practice. As someone from an industry rather than academic background, I have a natural preference for research that provides practical insights and outputs as well as a theoretical contribution. In addition my personal experiences of the importance of relationships in business has guided me away from purely scientific, positivist research philosophies to those that enable the human and social elements of business practice and behaviour to be captured. This has been reflected in the choice of 3 ‘soft’ theoretical lenses, as documented in Chapter 6, and the following research methodology.

**Research Philosophy**

Methodology is a way of thinking and studying reality, with methods representing the procedures and techniques used for gathering and analysing data (Strauss and Corbin, 2008). The philosophical orientation i.e. how reality is perceived will have a tangible impact on the chosen research methodology and data collection techniques. Ontological assumptions and commitments will influence the ways that research questions are established and how the
research is conducted (Bryman and Bell, 2007). Different views of reality lead to different propositions as to what reality is (ontology), the different ways of establishing what can be accepted as real (epistemology), and different strategies for validating claims about reality (Hart, 2000). Epistemology concerns what should be regarded as acceptable knowledge in a discipline and whether the social world should be studied in the same way as the natural sciences, while ontology is concerned with whether social entities should be considered as objective entities external to actors, or as a construction built up from the perceptions and actions of social actors (Bryman and Bell, 2007).

There are 2 key philosophical viewpoints of how research should be conducted, namely positivism and constructivism, although a range of positions and other philosophies exist between the two. Ontologically positivism applies a singular and objective view of reality, while constructivism considers reality as shaped by perceptions, cultural biases, perceptions and assumptions (Hart, 2000). Epistemology considers the procedures that can be used to establish what can be accepted as real; in positivism the social world exists externally and is objectively real, and can be measured through objective, measurable methods, while in constructivism reality is determined by people and does not rely on gathering facts and data, but rather on understanding different meanings and experiences (Easterby-Smith et al., 2002) in the chosen research context.

A researcher’s personal experiences, views and values significantly inform and influence their ontological position, which in turn will lead to the choice of corresponding epistemologies and a preference for certain methodologies and data collection techniques (Grix, 2002). My own industry experiences, including those related specifically to sustainability in supply chains, have directed me towards a constructivist rather than a positivist ontological position. I desire to interpret and understand the complexity of a phenomenon through my research, through a passion and enthusiasm for the people not just processes within business.
Table 18 illustrates key differences between positivism and constructivism in terms of the researcher’s role and how the research should be approached. Methodological issues arising from the 2 philosophies is how to validate what they claim to be knowledge, and whether to employ deductive or inductive processes. Deductive aligns strongly with positivistic research methodologies and often fails to provide deep insights and rich data into a phenomenon, and capture the complexity of organisational settings (Leonard and McAdam, 2001), as it involves a strict separation between researcher and practitioner to preserve ‘objectivity’. Inductive processes in contrast encourage the active participation of researchers, as illustrated in Table 18, and align with constructivism through its aims to gain insight and understanding of complex ‘real world’ phenomena. Mintzberg (1979) posits that an inductive approach requires detective work to identify patterns, and a ‘creative leap’ to break away from the expected and describe something new.

<table>
<thead>
<tr>
<th></th>
<th>Positivism</th>
<th>Constructivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>The observer</td>
<td>Must be independent</td>
<td>Is part of what is being observed</td>
</tr>
<tr>
<td>Human interests</td>
<td>Should be irrelevant</td>
<td>Are the main drivers of science</td>
</tr>
<tr>
<td>Explanations</td>
<td>Must demonstrate causality</td>
<td>Aim to increase the general understanding of the situation</td>
</tr>
<tr>
<td>Research progresses through</td>
<td>Hypotheses &amp; deductions</td>
<td>Gathering rich data from which ideas are induced</td>
</tr>
<tr>
<td>Concepts</td>
<td>Need to be operationalised so they can be measured</td>
<td>Should incorporate stakeholder perspectives</td>
</tr>
<tr>
<td>Units of analysis</td>
<td>Should be reduced to simplest terms</td>
<td>May include the complexity of ‘whole’ situations</td>
</tr>
<tr>
<td>Generalisation through</td>
<td>Statistical probability</td>
<td>Theoretical abstraction</td>
</tr>
<tr>
<td>Sampling requires</td>
<td>Large numbers selected randomly</td>
<td>Small numbers of cases chosen for specific reasons</td>
</tr>
</tbody>
</table>

Table 18: Contrasting implications of positivism & constructivism (Easterby-Smith et al., 2002)

SSCM is an evolving discipline with few explicit or pre-established theories, as highlighted in the literature review, so a constructivist philosophical orientation is relevant and applicable to the research, and an inductive methodology is employed as it aims to generate insight into SSCM. The theory/insight developed through an inductive approach directs the researcher to literature which best informs, explains and contextualises the findings, and reflects the continuous interplay between data collection and analysis (Goulding, 1998). Such theory is
more likely to be representative of reality, can enhance understanding and provide a meaningful guide to action (Strauss and Corbin, 2008).

**Research Design**

Figure 17 illustrates the 2 discussed philosophical viewpoints against the level of researcher involvement, and positions different forms of research design within it. Quantitative research is generally more representative of a positivist orientation, which primarily employs quantitative methods such as experiments and surveys to gather data, and yield statistical findings, while constructivist research design is more qualitative, and represents any type of research that produces findings not arrived at via statistical procedures or other quantification methods, but does have a range of interpretations. It takes place in the natural setting, which allows a high level of detail to be gained about an individual, place or phenomenon, and for the researcher to be involved in actual experiences (Creswell, 2003).

![Figure 17: Matrix of Research Designs (Easterby-Smith et al., 2002)]
As illustrated in Figure 17, 2 forms of case method align with the chosen constructivist philosophical orientation and differ only in level of researcher involvement. The case method focuses on understanding dynamics present within single settings (Eisenhardt, 1989), and is especially appropriate where real life situations are examined over a period of time (Leonard and McAdam, 2001). The literature review indicated an emphasis on the use of case studies in SSCM research (Winter and Knemeyer, 2013), as it is an emergent discipline (Yin, 2009). It also indicated that individual case studies or multi-industry studies have dominated to date; the research aims to address this gap by applying a multiple case study approach to take a deeper dive into the UK clothing industry (Carter and Easton, 2011). The researcher takes a detached role, in line with Yin’s case method approach; more participatory involvement was requested, but was not achievable within the chosen sample of UK clothing SMEs.

The case method is a theory-building approach deeply embedded in rich empirical descriptions of particular instances of a phenomenon based on a variety of data sources, and typically addresses ‘how’ and ‘why’ questions (Eisenhardt and Graebner, 2007), as indicated in Table 19. It focuses on contemporary events and uses data collection methods that are interactive and humanistic; its emergent nature means that research questions may change or be refined as the project progresses (Creswell, 2003).

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Type of Research Question</th>
<th>Requires control over behavioural events?</th>
<th>Focuses on contemporary events?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>How &amp; why</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Survey</td>
<td>Who, what, where</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>How many</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How much</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Archival Analysis</td>
<td>Who, what, where</td>
<td>No</td>
<td>Yes/no</td>
</tr>
<tr>
<td></td>
<td>How many</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How much</td>
<td></td>
<td></td>
</tr>
<tr>
<td>History</td>
<td>How &amp; why</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Case study</td>
<td>How &amp; why</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Table 19: Relevant situations for research strategies (Yin, 1989, p.17)

While the results of case studies are not necessarily subject to statistical generalisation, they can generate theoretical constructs, propositions and mid-range theories (Eisenhardt, 1989, Yin, 2009), relevant to an emerging discipline such as SSCM. Yin (1981, p.59) clarifies that ‘the
A distinguishing characteristic of a case study is that it attempts to examine a contemporary phenomenon in its real-life context. It is a simpler, more direct methodology that provides in-depth data (Mintzberg, 1979), which can use either qualitative or quantitative evidence or both. This evidence can come from any combination of fieldwork, archives, questionnaires, verbal reports or observations (Yin, 1981, Eisenhardt, 1989).

Qualitative research aligns strongly with the chosen constructivist philosophy and consists of 2 conditions; detailed observation of the real world and avoiding prior commitment to any theory (de Weerd-Nederhof, 2001). The theoretical lenses detailed in Chapter 6 evolved from the reviewed literature, rather than being specified at the start of the research, and the research purpose is to study real world SSCM practice within the SME context. Miles and Huberman (1994) believe the researcher should gain a holistic overview of the context being studied, with multiple interpretations possible from the resulting information, and emphasise that the majority of the analysis is done with words. Table 20 details the different types of qualitative data collection, and illustrates its highly descriptive nature.

<table>
<thead>
<tr>
<th>Data Collection Types</th>
<th>Options</th>
<th>Advantages</th>
<th>Limitations</th>
</tr>
</thead>
</table>
| **Observations** | • Complete participant  
• Observer as participant  
• Participant as observer  
• Complete observer | • Researcher has 1st hand experience with participants  
• Can record information as it is revealed  
• Unusual aspects can be noticed during observation  
• Useful in exploring topics that may be uncomfortable for participants to discuss | • Researcher may be seen as intrusive  
• ‘Private’ information may be observed that cannot be reported  
• Researcher may not have good observing skills  
• Certain participants may present special problems in gaining rapport |
| **Interviews** | • Face to face  
• Telephone  
• Group | • Useful when participants cannot be observed directly  
• Participants can provide historical information  
• Allows ‘control’ over line of questioning | • Provides ‘indirect’ information filtered through the views of interviewees  
• Provides information in a designated place rather than in a natural field setting  
• Researcher’s presence may bias responses  
• People not equally articulate and perceptive |
| **Documents** | • Public  
• Private  
• Email discussions | • Enables researcher to obtain language and words of participants  
• An unobtrusive form of | • May be protected information  
• Requires researcher to search out information in hard-to-find places  
• Requires transcribing or scanning |
information
- Represents data that are thoughtful
- Saves time and expense of transcribing

for computer entry
- Materials may be incomplete
- Documents may not be authentic or accurate

Audiovisual
- Photographs
- Visual recordings
- Art objects
- Computer software
- Film

May be an unobtrusive method
Opportunity for participants to directly share their reality
Creative as captures attention visually

May be difficult to interpret
May not be accessible publicly or privately
Presence of an observer may be disruptive and affect responses

Table 20: Qualitative Data Collection Types (Creswell, 2003, p.186)

The review of SSCM literature has indicated that sustainability in the supply chain context is an emerging field of research, reflected in the dominant use of inductive and qualitative research methods and techniques. A key aim of the research is to gain insight into SSCM practice within SMEs, through understanding how firms interpret and address sustainability, and this supports the primary application of qualitative data collection methods. Qualitative data is rich, full, earthy, holistic and real, which is relevant to gaining understanding of a complex concept or phenomenon, but it is also labour intensive (Miles, 1979), and because the context is part of the study there will always be many variables (Yin, 1981).

Case studies typically use multiple data collection methods from a number of entities by a direct observer in a single natural setting, and consider temporal and contextual dimensions of the studied phenomenon (Meredith, 1998). Face to face interviews represent the primary means of data collection for the case research, supported by field observations (Table 20). These qualitative methods can explore substantive areas about which little is known or where new viewpoints are required, as well as acquiring intricate details, such as thought processes and individuals’ perception (Strauss and Corbin, 2008).

Qualitative data collection methods are particularly relevant to the chosen research design as they allow deeper dimensions to emerge (Jick, 1979), but a key criticism of case study research is its lack of rigour, due mainly to issues around validity and reliability (Yin, 2009). Reliability means that the research study is objective and other researchers could reach the same conclusion in the same setting, while validity relates to whether the research measures what it
is meant to measure, and the results are valid in similar settings outside the study (Karlsson, 2009). These issues are addressed by ensuring the research process is well structured and fully considers the key criteria of case selection and data collection (Seuring, 2008a). Each studied case can stand on its own as an analytic unit (Eisenhardt and Graebner, 2007), and the multiple cases employed in this research serve as replications, contrasts and extensions to the emerging theory (Yin, 2009).

The use of theory triangulation, through the application of multiple theoretical lenses, and data triangulation, can address validity and reliability issues and produce findings that can broaden perspectives and interpretations of the studied phenomenon (Padgett, 1998). Data triangulation combines qualitative and quantitative methodologies and data sources, with the underlying idea that multiple viewpoints will create greater accuracy i.e. through cross validation. Both approaches are employed in this research; 3 theoretical lenses are applied to the research data, which consists primarily of interviews and observations, and relevant quantitative data such as financial reports.

Triangulation through the use of multiple qualitative and quantitative data sources (Jick, 1979), and the development of a chain of evidence ensure validity; a case database was developed for each of the studied SMEs and included full transcripts together with supporting data from other sources. This contributes to a structured chain of evidence (Yin, 2009), and allows the data for each case to be compared and contrasted, and convergent lines of inquiry identified (Patton, 2002). To address the issue of reliability, a research protocol was developed (Appendix 2), and utilised in the data collection to ensure consistency in the approach and that the same study could be repeated with equivalent results (Yin, 2009). Confidence in research findings and results occurs when there is convergence in the multiple forms of theory and data, but divergence can generate alternative, more complex explanations of the studied phenomenon (Meredith, 1998).
Case Study Criteria and Protocols

The selection of cases is an important aspect of building theory from case studies, and for ensuring reliability and validity. The concept of a population is key, because the population defines the set of entities from which the research sample is to be drawn. Also, the selection of an appropriate population controls extraneous variation and helps to define the limits for generalizing the findings (Eisenhardt, 1989). The case study protocol (Appendix 2) encompasses the principal documentation needed to provide the researcher with the necessary focus, organise the visits and ensure that the trail of evidence is thoroughly documented, and also outline the site characteristics to be sought (Stuart et al., 2002).

Choosing which sites to visit is a difficult element of case-based research and Eisenhardt (1989) stresses choosing cases that are likely to replicate or extend the emergent theory. However, bounded rationality and the high cost associated with case research can lead researchers to seek out easy-to-access, but potentially sub-optimal research sites. The literature suggests that 4 to 10 useable sites are necessary for case research (Eisenhardt, 1989), depending on the number of critical causal variables proposed, although it can be conducted using as few as 1 to 3 companies (Stuart et al., 2002). Multiple case studies tend to provide a stronger base for theory building (Yin, 2009) and the research employs this approach to enable comparison between UK clothing SMEs implementing sustainability in their supply chains.

There are 2 distinct research phases within the thesis, as illustrated in the Research Process diagram in Figure 1, Chapter 2; Phase 1 is a series of mini case studies that was conducted in parallel to the literature review to identify and develop key themes and research questions, while Phase 2 represents the primary research. The Phase 1 research was recognised as a mechanism to help to refine the data collection content and procedures, and potentially provide conceptual clarification for the primary research design. It made no assumptions on either theory or practice, and the information derived from this process further clarified the issues being studied and provided real life insight (Yin, 2009) alongside the literature reviews.
A purposive or judgmental theory-based sampling method (Patton, 1990) was applied for the selection of the mini case studies, which were chosen due to their characteristics and based on the researcher’s knowledge of the population and the purpose of the research study. The sample is representative of SSCM within the SME context, with participants selected to have specific similarities to other firms (Davies and Crane, 2010), and align with key SME characteristics identified in the literature review. Clothing SMEs tend to operate within an informal network and promote themselves to differing extents, so a snowball sampling technique was jointly employed where each interviewee was asked to propose other suitable firms. This resulted in a total of 14 participant SMEs, together with 2 NGOs, suggested by interviewees for their focus and specific insights on social issues within the clothing industry. A larger number of cases were appropriate to the Phase 1 research as it was intended to provide a broader insight on current clothing SME sustainability practice, which could then be studied in more detail through focused in-depth case studies.

Three specific selection criteria were applied for the mini case studies, informed by the SME literature review; the participant firms had to be a UK-based clothing SME, with fewer than 250 employees or a turnover of less than £40M, and had to be explicitly committed to addressing environmental and/or social performance within their supply chain practices. They needed to be firms that embed environmental and/or social performance within the business, and their approach to sustainability not explicitly the result of external pressure or regulation (Lee, 2008, Friedman and Miles, 2002).

The Phase 1 research findings confirmed that the use of case studies would be appropriate for the primary research, and identified a number of themes that warranted more detailed and in-depth study. The research featured 14 UK clothing SMEs that could each be considered suitable for further study, so it was necessary to apply a sampling frame to identify the most relevant units of analysis (Miles and Huberman, 1994). The unit of analysis in this research is the UK clothing SME and its supply chain (Yin, 2009), and a qualitative sampling approach was applied to enable the characteristics of each of the 14 participating firms to be recognised.
A ‘funnel’ approach was employed, which enabled focus to be tightened from the mini case studies, which provided insight into the UK clothing SME supply chains, to a specific number of cases for more detailed study (Silverman, 1993). The Phase 1 research sampling strategy contains elements of snowball, opportunistic and convenience criteria, but as the sampling process developed the cases became more extreme and/or intensity cases that represented specific research requirements (Miles and Huberman, 1994). A total of 4 cases were identified through this process, in line with Eisenhardt’s minimum guideline and reflecting the smaller number typically used in case-based research, as highlighted in the literature. Their choice was based on conceptual not representative grounds; the characteristics of the 4 chosen SMEs are both similar and contrasting, which enables the understanding of single cases (Miles and Huberman, 1994), and illustrates different potential approaches to and prioritisation of environmental and social performance within UK clothing SME supply chains.

**Data Collection**

Semi-structured interviews represent the primary form of data collection in this research, and to ensure consistency in communication a case study interview protocol was utilised. It provides interviewees with an overview of the research project, its purpose and how they will be involved, together with details of the interview procedure. The provision of questions or interview themes in advance helps to promote research credibility and also promote validity and reliability, as the interviewee can consider the topic and organise supporting documentation (Saunders et al., 1997). However the questions may still be adjusted or adapted in response to any new or interesting facets that arise during the interview process (Reuter et al., 2010).

Qualitative interviewing is open-ended, yet directed, shaped yet emergent, and paced yet unrestricted, and while it can be used as a single method it complements other methods such as observations and surveys (Charmaz, 2006). An interview guide is beneficial for providing a structure and set of questions/topics for the interview process (Reuter et al., 2010). However
the purpose of semi-structured qualitative interviewing is to be interactive, allowing interviewees to share openly their views, experiences and stories and provide rich, descriptive data. The interviewer should be able to adapt lines of questioning in response to participants’ answers (Charmaz, 2006), and harness the opportunity to explore emergent themes and patterns as the interview progress (Easterby-Smith et al., 2002).

More than any other qualitative data collection method, interviewing presents the challenge of asking significant questions without forcing responses. The use of open questions typically avoids bias, as there is no one objective view; they may not always obtain the information being sought, and there is a range of ‘probe’ techniques that can address this issue, but again to avoid bias the probes should not lead the participant to a specific response. The questions, together with the researcher’s interviewing style can have a strong impact on the context, frame and content of the study (Charmaz, 2006), as well as level of trust gained between parties. Trust is a key factor in the effectiveness of social interaction within qualitative interviewing; a series of short interviews can help to develop relationships and trust, and enable data to be collected over time rather than attempting to get it all ‘in one go’ (Easterby-Smith et al., 2002). This technique was employed for the primary research case studies as they were conducted over a 12 month period, and the researcher’s prior industry experience contributed to relaxed and trustful interviews throughout the whole research process.

Yin (2009) strongly advocates the use of multiple methods, creating a case study database and maintaining a chain of evidence, to ensure case research rigour. Therefore beyond the use of semi-structured interviews for primary data collection, archival records, artefacts, internal company documents and multiple interviewees were used to contribute to a more complete picture of the environment being studied, and relevant quantitative data such as financial reports acquired to enable data triangulation (Jick, 1979).
Data Analysis

‘Qualitative analysis involves a radically different way of thinking about data’ (Strauss and Corbin, 2008, p.59), and the researcher must learn to listen and let the data speak to them. While systematic data create the foundation of theory it is anecdotal, ‘soft’ data is that enables the theory to be ‘built’ (Mintzberg, 1979). It is an iterative process and there is an overlap of data analysis with data collection, with field notes often serving as an on-going commentary. It is considered legitimate in theory-building research to alter and even add data collection methods during the study (Eisenhardt, 1989).

As previously discussed qualitative data is rich, full, earthy, holistic and real, but because the context is part of the study there will always be many variables (Yin, 1981), and the volume of rich data it can generate can also yield over complex theory (Eisenhardt, 1989). Data reduction is therefore of key importance and the preliminary analysis refines, iterates and revises frameworks, and can also suggest new avenues for further data collection (Miles, 1979). Case study data analysis is undertaken in 2 phases; it starts with within case analysis and the development of individual profiles for full acquaintance with each case, and is followed by cross case analysis to identify differences and common patterns across the studied cases (Reuter et al., 2010), as well as plausible themes and generalisations (Miles, 1979). Cross case comparison is likely to prove more fruitful and aligns with Mintzberg’s ‘detective work’ approach, and in both phases of analysis the researcher must preserve a ‘chain of evidence’ (Yin, 1981).

The coding of data forms a key analytical stage, but should be initiated only when the scope of study has been scaled down and has determined what is meaningful, as there are major pitfalls in using categories that are too small and numerous (Yin, 1981). This form of analysis looks for explanations and aims to gain understanding of the studied phenomena (Strauss and Corbin, 2008), and employs coding schemes (Strauss and Corbin, 2008, Miles, 1979, Charmaz, 2006) to enable pattern recognition (Mintzberg, 1979) and the identification of similarities and
differences (Eisenhardt, 1989). This process will create different categories of phenomena, which can then develop into major themes (Miles, 1979).

A codified procedure for analysing data (Travers, 2002) is a dynamic and fluid process (Strauss and Corbin, 2008). Coding strategies are the process of breaking down the data into distinct units of meaning, which can then be labelled to generate concepts. Concepts are subsequently clustered into descriptive categories and then re-evaluated for interrelationships, which are gradually evolved into high order categories, or 1 underlying category, which indicates an emergent theory (Goulding, 1998). The organising of data typically commences with open coding to identify categories, and then the different dimensions of the categories and the links between are identified. Finally through selective coding the categories are refined and a framework emerges (Travers, 2002).

Data interpretation can be guided by existing literature and theory, and there is a highly recursive process between theory building and theory testing (Leonard and McAdam, 2001). Different people can interpret data differently, but this does not mean that any one viewpoint is more valid (Strauss and Corbin, 2008), although there should be literature to underpin the viewpoint. To ensure validity and reliability the presentation of the process is of key importance as better stories and constructs can be reached (Seuring, 2008a). Verification is done throughout the course of the research project and the developed theory should be true to the collected data (Goulding, 1998).

**Conclusion**

This chapter has discussed the key purpose of the research, its objectives and finalised research questions, and the methods to be employed. SSCM is a dynamic, evolving and contemporary phenomenon (Nguyen Cam, 2004), and a constructivist philosophy is appropriate to explore the different meanings and experiences in this specific context, without assuming a pre-existing reality (Easterby-Smith et al., 2002). Inductive theory building aligns with constructivism as it aims to gain understanding of complex ‘real world’ phenomena.
(Mintzberg, 1979); a case method focuses on understanding dynamics present within single settings (Eisenhardt, 1989), and is especially appropriate where real life situations are examined (Leonard and McAdam, 2001). It is a theory-building approach deeply embedded in rich empirical descriptions of particular instances of a phenomenon, and typically addresses ‘how’ and ‘why’ questions (Eisenhardt and Graebner, 2007).

The chosen methodology and nature of the research focus dictate a more qualitative than quantitative approach, although it is acknowledged that multiple forms of both data will be employed where appropriate to enable data triangulation and ensure the validity and reliability of the research. The primary use of qualitative data will enable a rich, real-world view of the sustainability phenomenon in the context of SME supply chains, and the application of multiple, interrelated theoretical lenses enable the phenomenon of sustainability performance within SME supply chains to be understood from different perspectives.
Chapter 9: Phase 1 Research

Introduction

The Phase 1 research was recognised as a means to help to refine the data collection content and procedures, as well as providing conceptual clarification for the primary research design. The information derived from this stage provided clarification of the issues being studied and real life insight (Yin, 2009) into the concept of sustainability, and was conducted in parallel to the review of relevant sustainability and supply chain, as illustrated in Figure 1, Chapter 2. It made no assumptions on either theory or practice, and the informal, semi-structured approach employed allowed real life experiences and perceptions of sustainability to be recorded.

Mini Case Studies

A purposive theory-based sampling method (Patton, 1990) was utilised for the selection of appropriate firms to enable a series of mini case studies, using the researcher’s judgment and knowledge of the studied population. The resulting sample is representative of the phenomenon of SSCM within the SME context, with firms selected to have specific similarities to other firms (Davies and Crane, 2010), and align with key organisational characteristics identified in the SME literature review. As clothing SMEs tend to operate within an informal network and promote themselves to differing extents a snowball sampling technique was jointly employed where each interviewed firm was asked to suggest other firms suitable for study according to the selection criteria. This resulted in 14 participant SMEs as well as the inclusion of 2 NGOs, suggested by firms for their focus and insights on social issues within the clothing industry.

Three specific selection criteria were applied, informed by the SME literature review; the first 2 were explicitly related to the SME definition in that they had to be a UK-based clothing SME, with fewer than 250 employees or a turnover of less than £40M, and in order to address the
sustainability and supply chain literature they had to be explicitly committed to addressing environmental and/or social performance within their supply chain practices. Unlike larger UK clothing organisations which have typically adapted existing supply chains for sustainability, they needed to be firms that embed sustainability within the business, and their approach to sustainability not explicitly the result of external pressure or regulation (Lee, 2008, Friedman and Miles, 2002).

The primary means of data collection was a series of semi-structured interviews conducted at each SME’s head office to allow direct observation of their operations. All the organisations who were willing to participate were informed that it was an early phase of the research, and they therefore appreciated there was no fixed agenda at this stage (Yin, 2009). It was emphasised that the interviews would take no longer than 1 hour and would be essentially an informal discussion about their approach to and views on sustainability within their organisations and supply chains. All interviews were recorded with the participants’ approval, subsequently transcribed and key themes identified.

Interviews are one of the most importance sources of case study information (Yin, 2009, Karlsson, 2009); informed by themes identified from the literature reviews interviewees were asked to discuss their SME characteristics, share their experiences and understanding of sustainability, if and how they prioritised the 3 sustainability dimensions and how it translated into supply chain practice. To ensure consistency in communication a protocol provided interviewees with an overview of the research project’s purpose and how they would be involved, together with details of the interview procedure. A set of standard questions were established for the interviews (Appendix 3), but they were adapted in response to any new or interesting facets that arose during the interview process (Reuter et al., 2010). Top level financial data was obtained, with marketing material and product catalogues provided by participating firms, and a range of supporting information sourced from each firm website and linked resources.
To address the case research issue of reliability a protocol was implemented whereby all proceedings were recorded, including the quoting of interview dates, details of individual settings and where and how archival data was collected. Each firm/interviewee was also provided with a copy of their transcript, to offer the opportunity for constructive feedback and correction of any errors in interpretation or transcription.

Table 21 presents the key characteristics of the 14 participating SMEs; in line with the reviewed literature the management and supply chain structure of each firm was identified, together with their approach to the environmental and social aspects of sustainability. Organisations vary in the focus of their supply chain activities (Walker and Jones, 2012) therefore some SMEs applied a stronger emphasis to environmental or social sustainability, which was often reflected in the forms of certification they employed. All of the firms applied a partnership or strategic alliance approach to their supply chain relationships, evidenced by extensive sharing of information and long-term commitments. Only one firm wholly owned any of its supply chains and this was in combination with strategic alliances.
<table>
<thead>
<tr>
<th>Firm</th>
<th>Interviewees</th>
<th>Description</th>
<th>Employees</th>
<th>Turnover</th>
<th>Management Structure</th>
<th>Supply Chain Structure</th>
<th>Sustainability Emphasis</th>
<th>Social Perspective</th>
<th>Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Owner</td>
<td>South west-based SME, supplying range of garments &amp; textiles made from organic cotton, organic linen, hemp, organic wool &amp; untreated silk &amp; cotton. Online sales, own retail outlet &amp; via 3rd party retailers.</td>
<td>&lt;10</td>
<td>£250,000 - £500,000</td>
<td>Owner managed</td>
<td>On-going &amp; Partnership</td>
<td>Emphasis on Environmental with strong recognition of the social dimension</td>
<td>Subsistence priority</td>
<td>GOTS (Global Organic Textiles Standard)</td>
</tr>
<tr>
<td>B</td>
<td>Founder Supply Chain Manager</td>
<td>Start up SME based in Cornwall specialising in performance clothing, primarily for the surfing market. Selling online &amp; via 3rd party retailers.</td>
<td>&lt;10</td>
<td>£500,000 - £1M</td>
<td>Owner managed</td>
<td>Partnership &amp; strategic alliances</td>
<td>Strong emphasis on Environmental</td>
<td>Subsistence priority</td>
<td>GOTS</td>
</tr>
<tr>
<td>C</td>
<td>Owner</td>
<td>Supplies company clothing made from Fairtrade certified cotton, organic &amp; recycled fibres direct to corporate clients &amp; via online sales.</td>
<td>10 plus supporters</td>
<td>£250,000 - £500,000</td>
<td>Owner managed</td>
<td>Partnership</td>
<td>Emphasis on the social dimension</td>
<td>Enlightened self-interest priority</td>
<td>Fairtrade</td>
</tr>
<tr>
<td>D</td>
<td>Sales Director</td>
<td>Supplying direct to major high street retailers with shirting, &amp; nightwear. Offer Fairtrade &amp; organic products &amp; manufacture through wholly owned factories.</td>
<td>+200</td>
<td>&gt;£10M</td>
<td>Independently managed</td>
<td>Strategic alliances &amp; some ownership</td>
<td>Social sustainability integrated in business philosophy &amp; environmental initiatives undertaken</td>
<td>Profit maximisation priority</td>
<td>Fairtrade</td>
</tr>
<tr>
<td>E</td>
<td>Owner Designer</td>
<td>Promotes sustainable, crafted garments, quality of craftsmanship &amp; aesthetic in Fair Trade context. Garments manufactured in UK &amp; supplied via online sales &amp; wholesale.</td>
<td>1 externally funded employee</td>
<td>&lt; £250,000</td>
<td>Owner managed</td>
<td>On-going &amp; Partnership</td>
<td>Environmentally conscious products but emphasis on operating within a fair &amp; socially responsible way</td>
<td>Enlightened self-interest priority</td>
<td>Fairtrade</td>
</tr>
<tr>
<td>F</td>
<td>Owner</td>
<td>Bristol-based SME whose sole aim is to provide employment for the Indian community they work in partnership with. Use Fairtrade certified organic cotton &amp; supply customers via own network of</td>
<td>+30</td>
<td>£500,000 - £1M</td>
<td>Owner managed</td>
<td>Strategic alliances</td>
<td>Were established to explicitly address the social dimension</td>
<td>Social priority</td>
<td>Fairtrade</td>
</tr>
<tr>
<td></td>
<td>Key Characteristics of Participant SMEs</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>G</strong></td>
<td>Supply Chain Manager</td>
<td>Lifestyle retail brand established &amp; trading in the south west. Soil Association certified &amp; organic cotton products sold via own 11 shops, website &amp; wholesale.</td>
<td>+130</td>
<td>£5M - £10M</td>
<td>Independently managed with owner involvement</td>
<td>Partnership &amp; Strategic alliances</td>
<td>Established on environmental dimension but inherent commitment to social responsibility</td>
<td>Profit maximisation priority</td>
<td>Soil Association &amp; GOTS</td>
</tr>
<tr>
<td><strong>H</strong></td>
<td>Owner</td>
<td>Specialist wool mill on Devon-Cornwall border. Adds value to farmers’ fleece by turning into high quality yarn to generate additional income. Also produce scarves, cushions &amp; blankets for retail.</td>
<td>11</td>
<td>£250,000 - £500,000</td>
<td>Owner managed</td>
<td>On-going &amp; Partnerships</td>
<td>Emphasis on Environmental</td>
<td>Enlightened self-interest priority</td>
<td></td>
</tr>
<tr>
<td><strong>I</strong></td>
<td>Owner</td>
<td>Cornwall based SME producing organic cotton clothing for babies &amp; children, sold online &amp; via boutique brands.</td>
<td>25</td>
<td>£1M - £5M</td>
<td>Owner managed moving to independent managed</td>
<td>Strategic alliances</td>
<td>Strong emphasis on Environmental</td>
<td>Subsistence priority</td>
<td>GOTS</td>
</tr>
<tr>
<td><strong>J</strong></td>
<td>Owner</td>
<td>Fairtrade &amp; organic underwear supplier with focus on addressing poverty. Sold online &amp; via 3rd parties.</td>
<td>4</td>
<td>&lt; £250,000</td>
<td>Owner Managed</td>
<td>Partnership &amp; Strategic alliances</td>
<td>Strong emphasis on Social</td>
<td>Social priority</td>
<td></td>
</tr>
<tr>
<td><strong>K</strong></td>
<td>Owner</td>
<td>Exclusively UK sample &amp; garment production site serving retail customers &amp; fashion designers.</td>
<td>10</td>
<td>&lt; £250,000</td>
<td>Owner managed</td>
<td>On-going &amp; Partnership</td>
<td>Emphasis on Social</td>
<td>Enlightened self-interest priority</td>
<td></td>
</tr>
<tr>
<td><strong>L</strong></td>
<td>Owner</td>
<td>Supplier of ethically made garments to fashion brands, corporate wear &amp; promotional clothing sectors.</td>
<td>10</td>
<td>£500,000 - £1M</td>
<td>Owner managed</td>
<td>Partnership</td>
<td>Emphasis on Environmental</td>
<td>Enlightened self-interest priority</td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>Sales Director</td>
<td>Supplier of low carbon corporate wear, workwear, promotional wear &amp; leisure wear, with fundamental principles of sustainable production</td>
<td>40</td>
<td>£5M - £10M</td>
<td>Independently managed</td>
<td>Strategic alliances</td>
<td>Strong emphasis on Environmental</td>
<td>Subsistence priority</td>
<td>GOTS</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>General Manager</td>
<td>Fairtrade fashion brand working with 50 groups of artisans &amp; farmers in 15 developing countries</td>
<td>29</td>
<td>£1M - £5M</td>
<td>Independently managed</td>
<td>Strategic alliances</td>
<td>Strong emphasis on Social but clear consideration of Environmental</td>
<td>Social priority</td>
<td>Fairtrade</td>
</tr>
</tbody>
</table>

Table 21: Key Characteristics of Participant SMEs
Data Analysis

A case database was developed for each of the studied SMEs, which included interview transcripts (Appendix 4) together with supporting data from other sources, including available Financial Data from Companies House (Appendix 5). This contributed to a structured chain of evidence to ensure construct validity (Yin, 2009), and allowed the data for each case to be compared and contrasted, and convergent lines of inquiry identified (Patton, 2002). Thematic coding was applied to the cases to enable key themes to be extracted from the interview data (Miles, 1979); the emphasis of the coding was on supply chain practices and the behaviours of each case in relation to the dimensions of economic, environmental and social performance.

Cross-case analysis deepens understanding and not only helps to establish specific conditions under which a finding will occur, but forms more general categories of how these may be related (Miles and Huberman, 1994). It looks for explanations and aims to gain understanding of the studied phenomena, using coding schemes (Eisenhardt, 1989, Charmaz, 2006). Synthesis occurs when data from individual cases is structured into a uniform framework to enable comparisons to be made, patterns established and conclusions formed (Mintzberg, 1979, Yin, 2009), with supporting information used to verify, triangulate and enhance the analysis.

Inductive analysis of the cases was guided by the reviewed literature; the SMEs were grouped against the initial selection criteria and then incorporated into a detailed pivot table framework (Appendix 6), which analysed other key SME and supply chain characteristics identified from the literature. The themes of firm size, management structure, supply chain structure and relationships, owner-manager principles and sustainability priorities from the literature and emergent themes from the within-case analysis were incorporated into this framework, which enabled pattern matching and explanation building, and ensured the internal validity of the research (Patton, 2002).
Findings

Informed by the SME literature the findings recognised the specific characteristics of SMEs, and identified key similarities and differences between the 14 mini cases. These characteristics were aligned to how each SME defined and approached sustainability within their organisations, and this led to a focus on how their supply chain practices related to the 3 dimensions of sustainability and whether the SMEs prioritised specific performance dimensions. The relationship between SME characteristics and supply chain relationships was subsequently explored, and indicated the role of supply chain structure and configuration in SSCM, as well as the potential impact of SME growth on supply chains and owner-manager principles.

SME Characteristics

The studied firms represented micro, small and medium sized enterprises with the smallest having just 1 employee and the largest over 200. Most were owner-managed, with larger firms more likely to be independently managed, and consequently the studied firms tended to have less hierarchical management structures. While their operating and management structures were generally more informal the firms had strong communication with their suppliers, perhaps due to more cooperative forms of relationship, which in contrast to the literature enabled good access to and sharing of information.

They were all focal firms who supply similar-sized wholesale or retail customers, i.e. they initiate the business transaction, and conceive and design the products intended for consumption (Cavusgil et al., 2008), and there was evidence of strong customer loyalty across the firms. Some of the smaller SMEs felt that providing sustainable product choices and alternatives represents a key step in changing consumer purchasing, but Firm D believed that ‘consumers have an acceptance of non-ethical or non-environmental properties and while that is there such products will exist – retailers can’t change that’. NGO 1 in further contrast believed that consumers act within a market
controlled by companies and governments, suggesting that smaller businesses have limited power in changing consumer opinion.

Table 10 (Chapter 5) indicates how SMEs approach SCM in comparison to LEs, and the majority of studied firms operate in niche/specialised markets (Hong and Jeong, 2006), focusing on specific customers or products that reflect their business principles, for example Firm I operates in the baby-clothing sector. Consequently the goals of their SCM processes are specific performance objectives strongly linked to sustainability, with suppliers chosen more on their ability to meet these objectives than on cost or delivery. There were indications, especially among the smaller firms that they are prepared to tolerate higher costs and supply chain delays to get the right product. While this indicates priorities other than profit maximisation it supports the view that SMEs often struggle to harness the benefits of SCM and are likely to experience dysfunctional supply chains (Thakkar et al., 2011).

A further constraint related to SCM as well as firm size was product transportation, and it represented a potential compromise to environmental performance. 5 of the firms encountered supply chain problems where products had to be airfreighted to prevent delays in getting products to the customer. Firm F considers the use of airfreight to transport finished products as its Achilles heel and the owner is ashamed about making this compromise, but recognises there are limited alternatives when shipping in small quantities. Firm E’s owner acknowledged a dilemma in supplying UK-produced garments to a global market, especially as a current lack of environmentally friendly logistics makes airfreight the only viable transport option, reiterating the perceived lack of power for smaller businesses to change established behaviours within the industry.

Supply chain structure was measured by the nature of the contracts the SMEs had and the extent of the information shared with suppliers. The firms did not exert power or dictate to their suppliers and a cooperative, partnership approach with similar sized SMEs was the main supply
chain structure. None of the SMEs were vertically integrated, but the largest by both employee numbers and turnover did own some of its supply chain. Long-term, cooperative supplier relationships enable SMEs to overcome specific constraints, and leverage scalable competences (Arend and Wisner, 2005); this was evidenced by a significant number collaborating with suppliers on developing/designing materials, processes and products. Firm B for example has collaborated with a UK farmer to reintroduce a specific sheep breed in order to produce their own Merino quality wool, providing strong market differentiation and removing their reliance to source fibre from New Zealand.

**SME Approaches to Sustainability**

Each interviewee was asked to provide their organisation’s definition or understanding of sustainability, as summarised in Table 22. Most firms were aware of the Brundtland definition, introduced in Chapter 3, and acknowledged both environmentally and socially responsible behaviour, but many had their own sustainability interpretation or focus. A number prioritised the social dimension, and while having an awareness of environmental issues it was considered core to how they operate. Others apply a more balanced view by operating ethically and offering environmentally responsible products, but only 2 firms explicitly included economic viability in their definitions. The 2 NGOs represented both small and large-scale responses to social issues within the clothing industry, with the former an independent campaigning initiative committed to spotlighting unethical work practices, and the latter a registered charity focusing on the fair pricing of raw materials.

<table>
<thead>
<tr>
<th>Firm</th>
<th>Definition of Sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Applies 12 sustainability criteria that cover product properties, social responsibility and product after care.</td>
</tr>
<tr>
<td>B</td>
<td>Think Brundtland definition is the best. ‘Not being too greedy and making longer lasting entity which can be passed onto others to do the same thing’.</td>
</tr>
<tr>
<td>C</td>
<td>Focused on Fairtrade and trading as ethically as possible while considering impacts on the environment.</td>
</tr>
<tr>
<td>D</td>
<td>‘Being conscious of the environment, an awareness of decisions and products and the effect of your actions on the environment.’ Don’t explicitly see social dimension as part of sustainability as it is something that is embedded in their business.</td>
</tr>
</tbody>
</table>
‘Respect for all the resources we use. Fabric to be part of a natural cycle, way garments are produced is with respect for skilled craftsmen so are creating something of value that gives them a livelihood. It’s a balance with people’s lives’.

‘Being sustainable environmentally for the long-term, and in who you employ and whether you will be able to continue to employ people like that’.

‘We do all we can both ethically and environmentally to make the best products ... and do what we believe is right. The only way to make this sustainable is to turn a profit to support our growth and beliefs’.

‘It’s about the planet that our grandchildren and great grandchildren will inherit and in a business context it’s actually the same so what we try to do is tread lightly’.

‘Doing the best that you can but being aware that you’re not going to be perfect, so always looking for better ways.’

‘It’s about maximising profit for your shareholders, but we redefine what we mean by profit and by shareholders. Profit is social, environmental and financial and shareholders are our stakeholders so every beneficiary of the trade… should be a shareholder in our business

‘Make things last longer... keep consumption to a minimum... and maintaining things so that they last longer.’

‘To be sustainable you have to be minimising your impact on the environment and you need to be doing it with respect for the people who are in your value chain.’

‘In the broadest term it is about minimising the negative and maximising the positive impacts across all the areas of impact. Essentially it’s social, economic and environmental.’

‘What is sustainability? You have environmental, social and economic.’

Apply a 3-legged stool analogy. Need to be ‘socially just, environmentally sound and economically viable’. Have to have all 3 or sustainability will collapse.

They believe there is no single definition, but their organisation is socially driven and ‘it’s about people and the impact on the people’.

Table 22: Participant Definitions of Sustainability

‘Sustainability can be ‘bolted on’ and represent a good first stage which can then lead to another and so on... but to be effective in the long term it has to be embedded in the planning, strategy and vision of an organization’ (Firm A). Firm D believed there needs to be a ‘culture of sustainability’, but recognised that it is an on-going commitment, considering themselves ‘probably one of the best suppliers socially and ethically, but we could probably do a lot better. Firm G reiterated this; ‘for every product we produce we’re constantly trying to improve it ethically and environmentally’. There was recognition between the companies that change is needed in the industry and that ‘some action is better than no action’ (Firm A).

Firm G strongly believes that sustainability makes good business sense, with commercial positives arising from environmental and socially responsible behaviour. They aim to systematically address all 3 dimensions; their brand is based on environmentally conscious organic products, they
operate a transparent and ethical supply chain where they state they will not compromise on their social responsibility, and their business is continually growing and making a profit. Firm E also feels it addresses all 3 dimensions, but not in a systematic way; the environment through use of natural fabrics, social via strong personal relationships with all its suppliers and a focus on maintaining skills and sustaining businesses, and while not currently making a profit it believes that all 3 will ultimately be achieved.

The studied firms apply different social or environmental emphases and the findings indicated an alignment between owner-manager principles and their chosen sustainability commitment (Davies and Crane, 2010, Pedersen, 2009). Recognising the current gap in SME and sustainability research the following quotes indicate why certain SMEs and their owners undertake environmental and social commitments and how these principles influence what practices are implemented (Kusyk and Lozano, 2007):

‘We were set up for the social dimension, so that’s it, but the environment is an important part of that. Also we want to be seen as the good people and want to tick all the boxes’
(Firm F)

‘Environmental and social occurs at different levels at different stages of the chain, but it’s how we break it down so that on a real living wage framework everybody gets paid a fair, equitable piece of the pie’
(Firm J)

‘It’s very much on the basis of the mission to support and develop Fairtrade businesses and provided by Fairtrade producers in developing countries, largely in Bangladesh and India.’
(Firm N)

‘My personal vision is to prove that you can run a sustainable green business successfully and that growing it bigger is not necessarily a bad thing’
(Firm I)

Many of these commitments extend beyond financial performance and the firms do not aim to compromise their established sustainability principles for short-term financial gain. The equivalent consideration of social responsibility contrasts the current bias towards the economic-environment intersection (Ashby et al., 2012), and reflects the stronger development of CSR SME research and how social responsibility tends to be more integrated within small firms (Kechiche
and Soparnot, 2012). Interestingly the largest firm did not explicitly recognise social responsibility as part of sustainability (Jenkins, 2004), but as ‘one area we as a business believe in very strongly... We genuinely care about the people in our factories’.

**SME Supply Chain Practices**

The analysis identified emergent themes related to how founder/firm principles are translated into supply chain practices; interviewees were not prompted to specify practices, but rather to discuss their supply chains in relation to sustainability, so the presented themes represent both well-established industry practices, such as the use of organic cotton, and others that evolved from the data, such as product longevity.

Table 23 consolidates the range of different supply chain practices identified from the interviews, from raw materials to finished product care and disposal, and indicates how the studied SMEs each prioritise the sustainability performance dimensions in relation to these practices. 3 sets of ranking were applied to environmental, social and economic performance, so that each had a different level of priority; the first ranking prioritised environmental performance, the second social and the third economic. The SMEs were mapped against this structure to align individual practices to a specific ranking based on each firm’s sustainability principles.

Firms A, B, L and M all rank organic cotton as top priority for environmental performance, while A and L recognise its contribution to their social performance, and L and M its economic impacts (higher cost, but higher product price). Firms F, I, J and N also recognise the environmental importance of organic cotton, but their specific principles mean they prioritise social over environmental performance in relation to this particular practice, and only Firm I acknowledges how it contributes to its economic performance. Firms D and G are 2 of the largest, most commercial of the studied SMEs and rank organic cotton as most important for their economic performance, and only recognise its relevance to environmental and not social performance.
## Supply Chain Practices

<table>
<thead>
<tr>
<th>Order of Priority</th>
<th>Organic cotton</th>
<th>Recycled Polyester</th>
<th>Natural Fibres</th>
<th>Responsible Dyeing</th>
<th>Waste Mgt (Processing)</th>
<th>Water Mgt</th>
<th>Waste Mgt (Manufacturing)</th>
<th>Energy Use</th>
<th>Product longevity</th>
<th>Product Care</th>
<th>Product Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental</td>
<td>A B L M</td>
<td>B</td>
<td>A B E G H L M</td>
<td>A E F H L M</td>
<td>A L</td>
<td>M</td>
<td>F H</td>
<td>M N</td>
<td>B E I</td>
<td>M</td>
<td>B</td>
</tr>
<tr>
<td>Social</td>
<td>A L</td>
<td></td>
<td>A E L M</td>
<td>A E F H L M</td>
<td>A L</td>
<td>M</td>
<td>M N</td>
<td>E I</td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic</td>
<td>L M</td>
<td>B</td>
<td>G L M</td>
<td>M</td>
<td>H</td>
<td>M</td>
<td>I</td>
<td>B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>F I J N</td>
<td></td>
<td>C I J N</td>
<td>C I J N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental</td>
<td>F I J N</td>
<td></td>
<td>C I J</td>
<td>C I J N</td>
<td></td>
<td></td>
<td></td>
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<td>Economic</td>
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</tr>
<tr>
<td>Economic</td>
<td>D G</td>
<td>D</td>
<td>D</td>
<td>A I</td>
<td>K</td>
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<tr>
<td>Environmental</td>
<td>D G</td>
<td>D</td>
<td>D</td>
<td>A I</td>
<td>K</td>
<td></td>
<td></td>
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</table>

Table 23: Supply Chain Practices and SME Sustainability Performance Priorities
In contrast to current SSCM literature the economic dimension is underrepresented in these findings; the majority of the studied firms prioritise environmental and social performance over financial, and less than 50% explicitly consider economic performance in relation to their sustainability practices. It is pertinent to note that it is the 2 largest firms by both number of employees and turnover for whom economic performance takes priority in their supply chain practices. Social performance is also better represented in the findings than suggested by the current literature, with 5 of the studied firms considering it as their key priority and a further 5 firms as their second priority.

Table 23 illustrates that while most of the studied firms acknowledge that 3 sustainability performance dimensions exist, they are not all considered in relation to every supply chain practice. This may be due to stronger commitments to specific practices and principles, a perceived lack of relevance of all performance dimensions to these practices, or recognition that not all practices lend themselves to all 3 dimensions; Firm B for example prioritises environmental performance in all its supply chain practices, but while it recognises the use of recycled polyester has financial implications through higher cost, this specific practice does not have a direct social relevance. The studied firms’ understandings of each sustainability performance dimension and their connection to supply chain practice are discussed in the following sections.

**Economic**

Current economic systems prioritise profit and growth, but price is only one factor according to NGO 1; however there were strong issues related to price highlighted by all the interviewed SMEs. Firm D for example observed that during the recession retailers’ key purchasing criteria was price, driven by their drive for profit, and they found they were arguing over very small amounts of money per garment; they also experienced pressure from buyers to find sustainability features or processes that do not cost money.
The increased cost of sustainable raw materials such as Fairtrade or organic cotton causes increased costs throughout the supply chain, and many organisations within the clothing industry find it difficult to adapt their existing business models, according to NGO 2. The supply chain is also subject to rises in the market cost of raw materials, which can have a significant impact on profit margins. The current higher cost of sustainable products can create a barrier, with Firm C ruled out of tendered business opportunities because of its higher unit pricing. It may also cause more responsible customers who want to buy sustainably to face a purchasing dilemma; for example with a difference of +£2.00 between a standard T-shirt and Fairtrade/organic T-shirt, buyers feel they should purchase the more economically viable product without appreciating that the other is better quality and will last longer.

Other economic challenges facing the SMEs was the holding of stock and maintaining cash flow (Firm C), achieving sales and getting a good volume of turnover when production and fabric costs are really high (Firm E). During their 25 years in business Firm F has always managed to be relatively profitable, but the recession in conjunction with increased cotton prices has had a serious impact, compounded further by bad debts and poor payment from wholesale customers. They see profit and the economic dimension as being of equal importance to environmental and social performance, emphasising that ‘business isn’t sustainable if you can’t get investment or be profitable’. This view is echoed by Firm G who states that ‘you go into business because you want to grow and sustain it into the future, so it needs to make money’.

A number of the firms currently accept lower margins on some of their products; for Firm C it gives them pleasure to sell a sustainable product even if at a lower price, while Firm B explicitly want to establish their business based on innovative and environmental fabrics, so are willing to compromise on profit at this stage. Firm E’s owner is still self-funding the business, but was reluctant to increase prices as she feels there is a maximum price that people are prepared to pay for her products. Firm G pursues a balance of margin, so will accept lower margin on
certain products as long as their overall margin target is achieved, and despite the premium on organic cotton they deliberately choose to not pass this cost onto their customers.

Firm G also highlighted that the use of organic materials had contributed strongly to the development of and consumer association with its brand, and illustrates the commercial benefits that can be derived from an environmentally focused approach; this aligns with the more strongly developed economic-environmental intersection identified in the literature reviews (Ashby et al., 2012). A number of firms recognised the economic/commercial advantages of specific practices, but few ranked economic performance as their priority, in line with the reviewed SME literature.

Environmental

Most of the SMEs recognised a need to manage environmental resources for present and future needs, in line with the Brundtland definition, and environmental performance is strongly addressed in the raw material stage through the choice of natural, recycled or organic fibres. The firms applying the strongest environmental emphasis demonstrate their commitment through the use of specific certification standards; while the chosen fibres and certification represent a higher cost these SMEs are unwilling to compromise on this product characteristic. ‘If we sell more organic cotton it’s better for the planet, there’s no two ways about it’ (Owner, Firm I). The use of organic cotton is core to Firm G’s brand and they ‘chose Soil Association because we genuinely believe that the products made under that set of standards would meet the standards we expect and promote’ (Supply Chain Manager, Firm G).

Responsible dyeing was seen as a means to minimise environmental impact, either through use of natural dyes or the treatment of chemicals before release into water sources, but it also had social implications and for some firms this was of greater priority than the environment, as illustrated in Table 23. In contrast to the literature owner-managers exhibited high levels of eco-literacy and a very clear understanding of the extent of the environmental and social impacts associated with textile processing; ‘If you’re not treating your waste water it’s not just
affecting the people who work in that factory it’s affecting a whole community and eco
system’ (Owner, Firm L).

There was less commitment to environmental performance at the manufacturing stage, with
few SMEs addressing the issues of waste and energy use that the literature highlights as
prominent within the industry. Firms addressing the issue of manufacturing waste tended to
be smaller with largely European-based supply chains. Managing this specific aspect of the
supply chain may be more straightforward for firms with more ‘local’ suppliers, for example
Firm H sells its waste/rejected materials to other UK producers. Smaller firms may be more
reliant on resource efficiency from a financial perspective (Cambra-Fierro et al., 2008), and a
specific commitment to waste minimisation reflective of individual owner-manager principles.
It also suggests that effective waste management is more of a challenge at a larger, more
global scale.

Of the 3 firms addressing the issue of product longevity, Firm B was the most focused
on the physical performance of its products, choosing and developing fabrics that provide maximum
durability. It was also the only firm to attempt to manage the disposal of its products, offering
both a product repair and return service, which enables them to recycle garments. The owner
of Firm E links longevity to product consumption and being ‘about clothing to keep and a good
form of luxury’ with an underlying view that clothes should be a cherished part of life, rather
than just serving fashion or function. Only Firm M actively tries to educate its consumers on
the after care of its products and this aligns strongly with their other commitment to water
management; water use in the lifecycle of an individual garment is at its highest in the product
care stage i.e. with the consumer.

The findings indicate that owner-manager principles strongly influence specific SME
environmental practices, for example the owner of Firm I is personally committed to being
environmentally-friendly and considered organic cotton the only ‘natural’ option for the
production of baby clothes. There may be barriers to certain supply chain practices due to SME
characteristics, such as size and resource availability; Table 23 illustrates that purchasing of environmentally responsible raw materials is accessible to all the studied SMEs, while more integrated, advanced systems that address manufacturing processes and other product characteristics tend to be applied by larger firms with higher resource levels. This aligns with the literature and suggests that as a firm grows in size (Preuss and Perschke, 2010) the nature, range and coordination of environmental activities change and increase.

**Social**

Poverty was recognised as a key issue when addressing the social dimension and for NGO 2 social sustainability is about ‘preventing poverty through trade not aid and empowering people. It’s ensuring that resources are sustainable and putting something back into communities’. When Firm F started working with their factory in India their tailors expressed the same message when they stated ‘it’s not charity we need, it’s work’. This extended to the idea that equity, through treating workers fairly and with respect was core to achieving sustainability; NGO 1 expressed the principle that ‘people need to be respected for there to be a sustainable world’.

Building on the issues of poverty and equity and their particular relevance to developing countries, Firm B recognised that ‘we are very privileged in the UK in comparison with the rest of the world’, but Firm G also acknowledged that social principles can extend to developed countries and considers ways of making positive social impacts within the UK. They work with Investment in People and the Unlocking Cornish Potential scheme to develop their UK employees and to have positive impact locally as well as globally. This aligns with Firm E’s explicit commitment to UK weavers and tailors.

As highlighted in the literature, unlike the environment the social dimension is often not explicitly framed within sustainability, as evidenced by Firm D who associated sustainability primarily with the environment. The company’s Sales Director did not recognise its strong commitment and responsibility to its supply chain workers as a component of sustainability,
but rather ‘something we have always done’. ‘We encourage all our manufacturers to continuously improve their policies and procedures to make the world a better place’ (Firm G).

While the firms may make compromises on product properties, price and transport, none were prepared to make compromises on their specific social principles. Firms D, F and G in particular take a strong stance on social sustainability within their supply chains and each was explicit that they will not compromise on this dimension. Firm D state that ‘you could walk into any of our owned factories and I defy anyone to find a better one from an ethical point of view’, while for Firm F the priority is the well-being of their tailors and consequently they are committed to guaranteeing them regular work and fair pay, even if it is to the detriment of their UK operations.

While a number of the practices identified in Table 23 have positive social implications, for example improved health and safety through responsible dyeing techniques, the findings illustrate how environmental performance is more consistently reflected in supply chain practice, emphasising its greater tangibility/measurability (Banerjee, 2010) and the focus on ‘greening’ processes (Preuss, 2005a, Vachon and Klassen, 2006a, Ashby et al., 2012). The social performance dimension was more strongly reflected in firms’ commitments to the workers in their supply chains and ethical behaviour, rather than specific practices, and this was supported through the development of long-term relationships and partnerships with suppliers.

**Supply Chain Relationships**

The literature acknowledges the role of supply chain relationships, but this aspect of SSCM is currently underdeveloped in comparison to more tangible, quantifiable operational processes (Burgess et al., 2006). All the interviewed organisations recognised the importance of strong integrated supply chain relationships; the owner of Firm E considers herself ‘as part of the [supplier’s] family’ and Firm F ‘knows everyone along the supply chain properly’, while Firm G works closely with all its suppliers to ensure best practice is achieved and they are financially
stable - ‘as long as we can hit our targets we want our factories and agents to be making money’. Firm F has an explicitly stated responsibility to keep their tailors working throughout the year and always pay the same premium price despite pressure for lower product prices and increased material costs; this commitment is reciprocated as the tailors choose to not work for any other retailers.

A long-term perspective brings additional benefits with some of the firms’ suppliers willing to accept lower profit margins because they trust and believe in their sustainability vision. The shared commitment is also evidenced in supplier flexibility and desire to provide solutions and solve problems. ‘I know they haven’t made any money on a certain product because of the amount of development and delivery costs... they don’t whinge about it because they see it as a long-term relationship’ (Firm B). Firm G recognises that through long-term relationships supply chain managers can develop a ‘gut instinct’ that allows them to pre-empt problems before they happen. These aspects of supply chain relationships reflect a less rational, more informal and intuitive approach to business decision-making.

Most suppliers were supportive of and frequently shared the firms’ visions of sustainability, whether focused on social, environmental or both. Firm G specifically seeks to build relationships that support their business growth and with suppliers that share the beliefs and values of the business. The most notable exception was Firm E, which is committed to giving their UK manufacturer more work in the long-term, and while the manufacturer is willing to adapt to her requirements they do not share the owner’s vision or even understanding of sustainability. The manufacturer’s priority is sustaining their business financially and they undertake other work that contradicts Firm E’s principles on the use of organic and natural materials. However Firm E accepts the compromise as the manufacturing skills they require are difficult to source in the UK.

A number of themes specifically related to supply chain relationships were identified in the findings, illustrated in Table 24, and they reflected the strong relevance of relationships to
social sustainability; these were the extent to which supplier relationships were considered personal, how the studied firms worked with suppliers to develop them, and the nature of the practices employed to monitor supplier performance. Each firm was mapped against these 3 themes using a range of SME characteristics related to size, management, resources and supply chain structure; this enabled links to be established between certain SME characteristics and the nature of a firm’s supply chain relationships.

Many of the SMEs considered their supply chain relationships as being highly personal; Firm I for example recognises that ‘our relationship with [supplier] is an emotional one. We have a relationship where I can say if I think they’re making a mistake and so do they’. Personal relationships appear more likely to build in micro and small firms suggesting they may be more difficult to maintain as an SME becomes larger and more formally structured. However while relationships may be less personal in larger SMEs, higher turnover and independently managed firms were actively engaged in the development of their suppliers; this indicates an on-going, long-term commitment, and as resources and firm size increase it becomes more feasible to invest tangibly in their development.

Larger SMEs were also more likely to employ formal monitoring procedures and as the majority operated in Asia, this suggested that such procedures are more applicable to global supply chains. Monitoring for larger firms was generally conducted by third parties; ‘We make sure that people are certified and audited against known independent standards’ (Owner, Firm L), while for smaller SMEs monitoring was more hands-on, further reflecting the often personal relationships that exist; ‘we visit our suppliers every 3-4 months and it couldn’t be more of an open door’ (Supply Chain Manager, Firm B).
The strong interpersonal relationships evidenced by the smaller firms generates social capital that can be harnessed to overcome some of the constraints associated with SMEs, such as resource availability (Towers and Burnes, 2008). For some this extended to suppliers having a shared vision and perspective not focused on short-term costs; ‘They buy in to our sustainability vision. We’ve had situations where I know for a fact they haven’t made any money on one of our products because of the amount of development and delivery costs’ (Firm B). Social capital generates trustful, mutually beneficial supplier relationships that can help small firms manage their supply chains without formal mechanisms, and as the SMEs and suppliers develop together removes the cost and difficulty associated with changing suppliers; ‘The trust is absolutely and utterly key. As far as we’re concerned if they don’t let us down or when they do let us down they are very open with us and we work on it together then we move forwards’ (Firm I).

Table 24: SME Characteristics and Supply Chain Relationships

<table>
<thead>
<tr>
<th>Supply Chain Relationships</th>
<th>Personal</th>
<th>Supplier Development</th>
<th>Formal Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(no. of employees)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Micro</td>
<td>A B E</td>
<td>E J</td>
<td>A B</td>
</tr>
<tr>
<td>Small</td>
<td>F H I L N</td>
<td>F I N</td>
<td>L</td>
</tr>
<tr>
<td>Medium</td>
<td>D G</td>
<td>D G</td>
<td>D G</td>
</tr>
<tr>
<td><strong>Turnover</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;£250,000</td>
<td>E</td>
<td>E J</td>
<td></td>
</tr>
<tr>
<td>£250,000 - £500,000</td>
<td>AH</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>£500,000 - £1M</td>
<td>B F L</td>
<td>F I N</td>
<td>B L</td>
</tr>
<tr>
<td>£1M - £5M</td>
<td>I N</td>
<td>I N</td>
<td></td>
</tr>
<tr>
<td>&gt;£5M</td>
<td>G</td>
<td>D G</td>
<td>D G</td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner managed</td>
<td>A B E F H I L</td>
<td>E F I</td>
<td>A B L</td>
</tr>
<tr>
<td>Independently managed</td>
<td>G I N</td>
<td>D G I N</td>
<td>D G M</td>
</tr>
<tr>
<td><strong>Supply Chain Structure</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transactional</td>
<td>A E H K</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-going</td>
<td>A E H K</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partnership</td>
<td>A B E G H L</td>
<td>E G L</td>
<td>A B G L</td>
</tr>
<tr>
<td>Strategic Alliances</td>
<td>B F G I N</td>
<td>F G I J</td>
<td>B G M D</td>
</tr>
<tr>
<td>Ownership</td>
<td>D</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td><strong>Resource Level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>B E F H N</td>
<td>E F J N</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>G I L</td>
<td>D G I L</td>
<td>D G M</td>
</tr>
</tbody>
</table>
The literature indicates that owner-managers are especially capable of being motivated by social reasons and this was reflected in a number of the firms, particularly Firm F whose owner established the business to guarantee employment for a cotton manufacturing community in India; ‘The point of the shop is to give people in India work’, and all profits go into community development. The findings illustrate that SMEs’ reasons for being in business are more complex and socially motivated, and few of the cases had profit maximisation as their top priority, with firms such as Firm F applying the very strong social priority perspective (Jenkins, 2006), illustrated in Table 11, Chapter 5, and embedding clear values and responsibilities into the business.

SSCM

An emergent theme from the supply chain analysis was the potential relationship between size and management structure, and supply chain configuration. Table 25 indicates that the largest SMEs primarily operate supply chains based in Asia with a small amount of Europe production, while supply chains based only in Europe was a stronger feature of smaller SMEs, despite the higher costs of this configuration. This ‘local’ commitment, explicit for some of the firms, can simultaneously address the dimensions by working with countries/suppliers with more established social standards, minimising environmental impact e.g. through a reduced carbon footprint and supporting local economic regeneration (Walker and Jones, 2012). It is reflective of a more enlightened social priority for the local community and, contrary to the literature, shows that small business owners can engage with more local economic initiatives.
The smallest firms tend to operate single-tiered supply chains, suggesting that supply chain complexity aligns with firm size and that characteristics of smaller firms such as resource constraints and management expertise (Pullen et al., 2008, Towers and Burnes, 2008) may limit them to simpler, more directly managed supply chains. The largest SMEs employ certification to evidence their sustainability commitment and as a way of selecting and managing suppliers. This implies that as supply chains become more complex and multi-tiered there is a greater need for formal monitoring mechanisms, and highlights the challenge and cost for smaller firms in managing a fully certified supply chain; ‘we have to pay for the labelling and to get the labelling we have to get all the subcontractors checked all the time, so there is a big cost to us and it’s not without its difficulties’ (Firm F).

Highly formalised systems require greater financial investment, which suggests a shift from a focus on environmental performance towards economic performance as firms grow in size. With the exception of Firm N all of the large independently-managed SMEs are profitable;

### Table 25: SSCM Emergent Themes in Mini Case Studies

<table>
<thead>
<tr>
<th>Firm</th>
<th>Turnover</th>
<th>Employees</th>
<th>Certification</th>
<th>Supply Chain Locations</th>
<th>Supply Chain Configuration</th>
<th>Management Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>&gt;£10M</td>
<td>+200</td>
<td>Fairtrade</td>
<td>Asia</td>
<td>Multi-tiered</td>
<td>Independent</td>
</tr>
<tr>
<td>G</td>
<td>£5 - 10M</td>
<td>+130</td>
<td>GOTS &amp; Soil Association</td>
<td>Mainly Asia with some Europe</td>
<td>Multi-tiered</td>
<td>Independent</td>
</tr>
<tr>
<td>M</td>
<td>£5 - 10M</td>
<td>40</td>
<td>GOTS</td>
<td>Mainly Asia with some Europe</td>
<td>Single-tiered</td>
<td>Independent</td>
</tr>
<tr>
<td>I</td>
<td>£1 - 5M</td>
<td>25</td>
<td>GOTS</td>
<td>Mainly Asia with some Europe</td>
<td>Multi-tiered</td>
<td>Independent</td>
</tr>
<tr>
<td>N</td>
<td>£2.3M</td>
<td>29</td>
<td>Fairtrade</td>
<td>Asia</td>
<td>Single-tiered</td>
<td>Independent</td>
</tr>
<tr>
<td>A</td>
<td>£1 - 5M</td>
<td>&lt;10</td>
<td>GOTS</td>
<td>Europe</td>
<td>Single-tiered</td>
<td>Owner-managed</td>
</tr>
<tr>
<td>B</td>
<td>£500,00 – 1M</td>
<td>&lt;10</td>
<td>GOTS</td>
<td>Mainly Europe, with some Asia</td>
<td>Single-tiered</td>
<td>Owner-managed</td>
</tr>
<tr>
<td>F</td>
<td>£500,00 – 1M</td>
<td>30</td>
<td>Fairtrade</td>
<td>Asia</td>
<td>Single-tiered</td>
<td>Owner-managed</td>
</tr>
<tr>
<td>L</td>
<td>£500,00 – 1M</td>
<td>10</td>
<td>Asia &amp; other</td>
<td>Asia &amp; other</td>
<td>Owner-managed</td>
<td>Owner-managed</td>
</tr>
<tr>
<td>H</td>
<td>£250,000 – 500,000</td>
<td>11</td>
<td>Europe</td>
<td>Europe</td>
<td>Single-tiered</td>
<td>Owner-managed</td>
</tr>
<tr>
<td>E</td>
<td>&lt;£250,000</td>
<td>1</td>
<td>Europe</td>
<td>Single-tiered</td>
<td>Owner-managed</td>
<td>Owner-managed</td>
</tr>
</tbody>
</table>
Firms G and I in particular started as micro family-run companies and have seen significant growth in recent years, which has prompted a conscious move to increased supply chain formalisation and control as well as more hierarchical management structures. This represents a transition from ‘hands-on’ supplier monitoring based on personal working relationships to a greater reliance on 3rd party auditing systems.

Smaller firms’ approach to SSCM may be less formalised than indicated by the current literature, but owner-managers of the studied SMEs evidenced strong environmental and social principles, which they recognise should translate across their supply chains. This could be through commitment to a specific community, use of responsibly sourced materials, personal, collaborative supplier relationships or a more local supply chain. Current SSCM literature prioritises economic performance and investigates its interaction with the environment and society, but most of the studied SMEs prioritise environmental or social performance, heavily inspired by owner-manager principles. In contrast to the literature they do not start with profit maximisation and can offer a different perspective on balancing the sustainability performance dimensions in practice.

**Discussion**

The findings suggest that SMEs structure their supply chains in ways that align with their characteristics, as illustrated in Figure 18. As firms move from micro to medium enterprise forms they are more likely to become independently managed companies that operate more complex global supply chains. None of the studied SMEs engage in the purely transactional supplier interactions historically characteristic of the clothing industry, but the extent of supply chain integration varies, with smaller firms applying a partnership structure and larger firms engaging in more strategic alliances. The largest SME by employees and turnover was the only firm to own any of its supply chain, suggesting that highly integrated supply chain structures are only feasible when higher levels of resource are available.
The characteristics that influence supply chain configuration in turn impact how SMEs approach sustainability. The heterogeneity associated with SMEs is reflected in the findings since no 2 firms employ the same approach, but certain supply chain practices prevailed across the mini cases. All of the studied firms source responsible raw materials, which suggests that environmental responsibility at this supply chain stage is accessible to even the smallest firm. Addressing sustainability further upstream aligns with greater size/resource availability or very specific owner-manager principles e.g. Firm B explicitly applies a closed loop approach to sustainability so takes responsibility for the whole product lifecycle. This aligns with SSCM literature’s recognition that firms tend to implement ‘easy-to-green’ processes (Vachon and Klassen, 2006b), but reflects the difficulty for SMEs to manage more complex, supply chain wide issues such as waste management and energy use.

While supply chain configuration and complexity, size and resources may constrain certain sustainability activities the findings indicate the strong impact owner-manager principles can have on environmental and social supply chain performance, and support the literature’s recognition that not all SMEs are ‘little big businesses’ focused on profit maximisation (Simpson et al., 2011). Many owner-managers had very personal sustainability-motivated reasons for establishing their business such as commitment to a specific community, poverty reduction or a desire to protect the planet, and there was a general unwillingness to compromise on these principles for short-term gain. The principles often translated into
specific supply chain practices and relationships, and in contrast to the current bias in SSCM literature the SMEs were as likely to focus on social performance as environmental, and also demonstrated high levels of eco-literacy.

This strong importance of founder principles indicates that smaller firms may be better positioned or more committed to addressing the social dimension. For some it was an explicit principle reflected in practices such as Fairtrade, while for others it was an inherent part of how they did business, especially with their suppliers. As illustrated in Figure 18 micro and small firms have often highly personal supplier relationships that rely on more informal monitoring and management than medium-sized firms. These long-term relationships can generate high levels of social capital and while smaller firms tend to be more reliant on their suppliers this can translate into a shared vision, trust and commitment to overcome SME challenges and constraints. It also suggests that informal and personal approaches can result in a more embedded SSCM implementation than reflected in the current literature.

SMEs may apply a greater focus on specific principles, and the strong levels of environmental or social performance demonstrated by the studied firms support this and suggest a more embedded form of supply chain sustainability. However, while the findings indicate that profit maximisation is not necessarily the priority of SMEs, economic performance needs to be considered otherwise business growth and longevity will be compromised. In fact too strong a sustainability emphasis may ‘tip the balance’. While Firm F exhibits the highest level of social priority, through its commitment to a specific community they are unable to adapt their supply chain to respond to economic conditions and are seeing the business decline significantly as a result. Principles may therefore ultimately be detrimental if they create a rigid approach that cannot adapt to the external environment.

This suggests that while strong embedded principles can enable SMEs to more successfully address environmental and social performance, these principles may evolve as the firm grows.

The findings indicate that supply chain activities and relationships change and become more
formalised the larger a firm becomes, due in part to increased supply chain complexity and management hierarchy, but also increased resource availability. Greater size and resources can enable some of the more complex upstream supply chain activities and a more coordinated approach to sustainability across the supply chain, but may dilute the social capital gained through personal relationships and shift the firm’s priorities more strongly towards economic performance.

The challenge for SMEs at this stage is to maintain their original principles while achieving appropriate financial growth. While Firm F appears to have struggled with this balance Firms G, I and M have grown and become increasingly profitable and do not appear to have compromised their sustainability responsibilities. In many cases their growth has enabled them to extend their social commitment to both local and global charitable initiatives, and to extend their SSCM activities. However, these firms all still have a high degree of owner involvement and relatively small employee numbers; therefore there may be an optimum stage at which a smaller firm manages the dimensions more effectively, and in turn a point at which a firm becomes too large and remote from its own owner principles to achieve the same balance.

**Mini Case Studies Themes**

The Phase 1 research identified a number of themes specific to SMEs and SSCM, as illustrated in Table 26, beginning with an indication that the characteristics of SMEs can influence a firm’s approach to sustainability. The inherent heterogeneity of SMEs was reflected in the range of different responses and sustainability priorities across the cases, and the findings suggested that as a firm grows in size its approach to sustainability becomes more formalised in both supply chain practice and management. Certain practices may become more feasible in larger SMEs (Preuss and Perschke, 2010), but a move to a more hierarchical management structure may impact owner principles and dilute social capital.
An emphasis on the raw material stage for addressing environmental performance was demonstrated, and there were shared characteristics that addressed other environmental issues along the studied SME supply chains; there were also indications that some environmental practices were constrained by firm size and resources. While the environmental dimension took priority in line with the literature the social dimension was more strongly represented in the SMEs’ approach and commitment to sustainability, with economic the least prioritised of all 3 sustainability performance dimensions, in contrast to the reviewed literature.

### Key Themes

<table>
<thead>
<tr>
<th><strong>SME characteristics</strong></th>
<th>Specific SME characteristics can enable sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Firm growth can change sustainability approach</td>
</tr>
<tr>
<td></td>
<td>Changes in management structure can impact founder principles</td>
</tr>
<tr>
<td><strong>Prioritisation of dimensions</strong></td>
<td>Financial performance not main priority</td>
</tr>
<tr>
<td></td>
<td>Environmental performance has greater priority</td>
</tr>
<tr>
<td></td>
<td>Social dimension better represented</td>
</tr>
<tr>
<td><strong>Principles</strong></td>
<td>Strong influence on practices &amp; supply chain relationships</td>
</tr>
<tr>
<td></td>
<td>Personal visions</td>
</tr>
<tr>
<td></td>
<td>Shared visions &amp; principles</td>
</tr>
<tr>
<td><strong>Practices</strong></td>
<td>SME heterogeneity means no standard approach</td>
</tr>
<tr>
<td></td>
<td>Raw materials &amp; dyeing process key focus</td>
</tr>
<tr>
<td></td>
<td>Sustainability practices reduce along the supply chain</td>
</tr>
<tr>
<td><strong>Social capital</strong></td>
<td>Generated through personal &amp; committed supply chain relationships</td>
</tr>
<tr>
<td></td>
<td>Can help overcome SME constraints &amp; limitations</td>
</tr>
<tr>
<td></td>
<td>Trust &amp; mutual benefit</td>
</tr>
<tr>
<td><strong>Supply chain configuration</strong></td>
<td>Linked to SME size &amp; management structure</td>
</tr>
<tr>
<td></td>
<td>Local vs. global suppliers</td>
</tr>
<tr>
<td></td>
<td>Social priority</td>
</tr>
</tbody>
</table>

Table 26: Mini Case Study Themes

The theme of owner principles strongly emerged from these case studies with personal visions and morals having an influence on sustainability practice and supply chain relationships. Sharing a sustainability vision with suppliers was important to many of the SMEs and the committed and often personal relationships that evolve generate high levels of social capital, a theme that was identified in the review of the SME literature. Trust and mutual benefit were
key facets of this theme and the development of social capital could enable smaller SMEs to overcome certain constraints.

Finally the findings indicated an emergent theme around how SMEs configure and structure their supply chains for sustainability. Smaller SMEs were more likely to operate European-based and single tier supply chains in contrast to the more global multi-tiered supply chains of larger SMEs. A ‘local’ supply chain commitment enabled specific sustainability responses and could align with a more enlightened form of social priority.

**Conclusion**

The series of mini case studies investigated how SME characteristics influence environmental and social supply chain performance and the practices that evolve as a result. The studied firms represent SMEs in the UK clothing sector that promote specific sustainability commitments, and in line with the SME literature the findings indicate that for many profit maximisation is not the key priority. This specific characteristic together with a less hierarchical management structure and strong owner-manager involvement appears to enable environmentally and socially responsible supply chain practices. However as indicated in Table 23 certain practices such as those related to energy use or waste management appear to be less accessible than those at the raw material stage.

Environmental performance was strongly reflected in the upstream (raw material) supply chain practices of the studied firms and could suggest that more limited resources and size constraints associated with SMEs restricts firms to the ‘easy to green’ practices that prevail in the literature (Preuss, 2005a, Vachon and Klassen, 2006a, Ashby et al., 2012). However the findings also indicate the key role played by owner-manager principles, which can translate into practices that specifically align with these principles and go beyond upstream greening; for example Firm B’s focus on product longevity and disposal as part of their closed loop commitment to environmental performance.
While social performance was less explicitly reflected in supply chain practice, owner-manager principles influenced the social priority applied to certain practices, and also indicated how firms’ strong eco-literacy contributed to a holistic understanding that practices such as responsible dyeing can impact both social and environmental performance. Supply chain relationships were more indicative of the studied SMEs’ approach to social performance and as illustrated in Table 24 the smaller size, owner management structure and partnership supply chain structure seemed to enable more personal, long-term and trust-based supplier relationships. These in turn generate high levels of social capital, which enable SMEs to overcome size and resource constraints.

Table 24 further indicates that as a firm grows in size and resources its supply chain relationships become more formalised and reliant on supplier certification. While growth enables more supplier development and the introduction of further sustainable supply chain practices, the move from highly personal relationships can potentially dilute the social capital, shared vision and proximity to owner principles evidenced by the smaller firms. The emergent themes of supply chain location and configuration suggest that supply chain structure and complexity can align with SME characteristics and that as a firm grows and evolves it will transform to more global multi-tiered supply chain forms that require more independently managed structures.

Successfully harnessing supply chain relationships to achieve full supply chain integration of environmental and social performance (Soni and Kodali, 2011, Burgess et al., 2006) remains a key challenge in SSCM. These mini case studies show that SMEs, with their stronger emphasis on personal relationships and long-term perspective that does not prioritise economic performance are perhaps better positioned to achieve a more integrated SSCM balance. Owner-manager sustainability principles are applied to specific environmental and social practices, which are strengthened and embedded through on-going supplier relationships and social capital; however the findings indicate that as a firm grows there may be a shift in priorities towards economic performance, which has implications for this balance.
The Phase 1 research provided valuable and useful insight into the role of certain SME characteristics such as size, owner-manager principles, supplier relationships and supply chain structure on how sustainability is addressed in this context. It indicated the potential of achieving a more integrated response to the SSCM framework, which the literature acknowledges skews towards economic performance and profit maximisation (Pagell and Shevchenko, 2014), as the studied SMEs applied a strong emphasis on environmental and social responsibility.

A series of in-depth studies offers the opportunity to build on these research findings and undertake more focused inquiry, which incorporates multiple interviews, rather than the single interviews of the mini cases, conducted with multiple interviewees to offer more varied perspectives, and over a longer period of time that could take account of potential external factors. It enables the key themes identified from the mini case studies in Table 26 to be explored and developed in greater detail, and investigated through the 3 chosen theoretical lenses.
Chapter 10: Primary Research

Introduction

Cases are a particularly relevant and appropriate means of studying dynamic, emerging phenomena, practices and concepts, such as sustainability and SSCM (Eisenhardt and Graebner, 2007). Pure case research is the analysis of a limited number of cases, which enables new and creative insights and offers high validity with practitioners (Karlsson, 2009); the Phase 1 research findings provided relevant insight into SSCM within UK clothing SMEs, recognising the impact of certain SME characteristics on the sustainability performance dimensions and identifying a number of themes that justified more focused in-depth study. It further highlighted the recognised need for SSCM research that focuses on SMEs rather than LEs and MNCs (Walker and Jones, 2012), and the insights that can be gained through the detailed study of a single and highly relevant industry (Carter and Easton, 2011).

4 to 10 useable sites are generally considered necessary for detailed case research and this facilitates replicability (Eisenhardt, 1989), although it can be conducted using as few as 1 to 3 companies (Stuart et al., 2002). Fewer case studies enable a greater depth of observation (Karlsson, 2009), and as the purpose of this research is to understand in more detail how and why sustainability performance is addressed in UK clothing SME supply chains Eisenhardt’s (1989) minimum number of 4 case studies was applied; these were sampled from the SMEs who were interviewed and studied in Phase 1 of the research.

Case Sampling

The review of the literature indicated that case studies represent the dominant approach to research in the SSCM field as it is emergent i.e. at the theory-building rather than theory-testing stage. The Phase 1 research confirmed that the use of case studies would be appropriate for this final stage of the research, and featured 14 UK clothing SMEs that could each be considered suitable for further study. It was therefore necessary to apply a sampling
frame to the mini case research to identify the most relevant units of analysis (Miles and Huberman, 1994). Due to the nature of the rich, real world information obtained from the Phase 1 research a qualitative sampling method was applied, an approach that recognises the characteristics of each participating firm.

A funnel approach was employed, which enabled the clothing industry’s approach to sustainability to be viewed via the mini case studies, and then for focus to be tightened to 4 specific cases for more detailed study (Silverman, 1993). The Phase 1 research sampling strategy had contained elements of snowball, opportunistic and convenience criteria, but as the process developed the cases became more extreme or intensity cases that represented specific research requirements (Miles and Huberman, 1994). Given the dynamic nature of sustainability and SSCM the chosen cases are not typical or representative, but rather illustrative of different potential approaches to environmental and social performance within UK SME supply chains. The choice of cases was therefore based on conceptual not representative grounds and are both similar and contrasting, which enables the detailed understanding of single cases (Miles and Huberman, 1994).

The unit of analysis in this study is the UK clothing SME and its supply chain (Yin, 2009); each case serves a specific purpose within the overall scope of the inquiry and can stand on its own as an analytic unit (Eisenhardt and Graebner, 2007). The multiple cases serve as replications, contrasts and extensions to the emerging SSCM theory (Yin, 2009) identified through the literature reviews and the 4 firms chosen for more in-depth study are Firms F, B, A and I respectively. All are clothing producers, which sell their products via the Internet, catalogue and/or retail outlets; Table 27 provides a short description of each firm, and identifies the different interviewees for each case.
<table>
<thead>
<tr>
<th>Firm</th>
<th>Interviewees</th>
<th>Description</th>
<th>Sustainability Position</th>
</tr>
</thead>
</table>
| F    | Owner-founder
Designer
HR Manager
Shop Manager
Merchandiser | A 25-year-old SME whose sole aim is to provide employment for the Indian community they work in partnership with. They use Fairtrade certified organic cotton and supply customers via own network of shops, online and mail order, as well as wholesaling. | Emphasis on Social |
| B    | Owner-founder
Supply Chain Manager
Design Manager
Devon supplier | Start up SME based in Cornwall specialising in performance clothing, primarily for the surfing market. Selling online and via 3rd party retailers. | Emphasis on Environmental |
| A    | Owner-founder
Founder/Operations Director
Manager
UK supplier
UK agent for China supplier | SME based in the south west of the UK, supplying a range of garments and home textiles made from organic cotton, organic linen, hemp, organic wool and untreated silk and cotton. Online sales, own retail outlet and via 3rd party retailers. | Emphasis on Environmental |
| I    | Owner-founder
Supply Chain Manager
Senior Designer
Finance Manager | Organic cotton clothing for babies and children, sold online and via boutique brands | Emphasis on Environmental |

Table 27: Overview of Case Study Firms

The Phase 1 research suggests that SMEs are potentially more principled, focused and innovative than LEs in their approach to sustainability, perhaps due to their size and flexibility or to owners’ beliefs, and they face specific challenges. Following the chosen sampling method the 4 cases share similar or contrasting characteristics, and represent a sample of UK clothing SMEs that actively apply sustainability principles in their supply chains; they are not representative of all UK SMEs that engage in sustainability. Table 28 draws on the key characteristics for the 4 chosen firms from the mini case studies, and illustrates the key similarities and differences between the cases.

The 4 cases represent both well-established SMEs and younger firms, and different business sizes; while medium sized enterprises are not explicitly represented Firm I is in the transition from small to medium. Table 28 indicates that the sampled firms have very different levels of financial performance and employ contrasting approaches to their environmental and social...
practices; from an environmental perspective the use of organic and natural materials is the dominant approach, but how each firm manages these practices varies, and while both firms A and I highlight the importance of responsible dyeing they apply this in different ways.

<table>
<thead>
<tr>
<th>Age of Business</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm F</td>
<td>in business for over 25 years</td>
</tr>
<tr>
<td>Firm A</td>
<td>in business for over 15 years</td>
</tr>
<tr>
<td>Firm B</td>
<td>young &amp; dynamic company</td>
</tr>
<tr>
<td>Firm I</td>
<td>young &amp; highly commercial</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business Size</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm B &amp; A</td>
<td>micro</td>
</tr>
<tr>
<td>Firm F &amp; I</td>
<td>small</td>
</tr>
<tr>
<td>Firm I</td>
<td>&gt;£1M turnover</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management Structure</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm F, B, A</td>
<td>Owner managed</td>
</tr>
<tr>
<td>Firm F, A, I</td>
<td>Flat</td>
</tr>
<tr>
<td>Firm I</td>
<td>Independently managed</td>
</tr>
<tr>
<td>Firm B</td>
<td>Hierarchy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financial Performance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm F</td>
<td>profitable for many years, but now in significant decline.</td>
</tr>
<tr>
<td>Firm B</td>
<td>breaking even.</td>
</tr>
<tr>
<td>Firm A</td>
<td>profitable until recent recession, but still maintaining acceptable level of sales.</td>
</tr>
<tr>
<td>Firm I</td>
<td>profitable from the start and has seen extensive growth. Clear financial targets.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental Practices</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm B</td>
<td>Use of recycled/recyclable raw materials</td>
</tr>
<tr>
<td>Firm F, A, I</td>
<td>Use of organic natural raw materials</td>
</tr>
<tr>
<td>Firm F</td>
<td>emphasis on brightly coloured products</td>
</tr>
<tr>
<td>Firm F &amp; I</td>
<td>product longevity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social Practices</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm F</td>
<td>profits go to support and develop Indian community</td>
</tr>
<tr>
<td>Firm B, A, I</td>
<td>all donate to charities that align with their sustainability principles</td>
</tr>
<tr>
<td>Firm F</td>
<td>focus on global support</td>
</tr>
<tr>
<td>Firm B &amp; A</td>
<td>focus on local support/community</td>
</tr>
<tr>
<td>Firm I</td>
<td>emphasis on global support as business was developed in India</td>
</tr>
<tr>
<td>Firm I</td>
<td>beginning to develop local support</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accreditation</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of certified materials &amp; labelling</td>
<td>Firm B - Use of ethical policies/monitoring</td>
</tr>
<tr>
<td>Firm F</td>
<td>Fairtrade</td>
</tr>
<tr>
<td>Firm A &amp; I</td>
<td>GOTS certified organic cotton</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supply Chains</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply chain location – India</td>
<td>Supply chain location – Europe</td>
</tr>
<tr>
<td>Firm F &amp; I</td>
<td>Firm B &amp; A</td>
</tr>
<tr>
<td>Supply Chain Structure – partnership</td>
<td>Supply Chain Structure – strategic alliance</td>
</tr>
<tr>
<td>Firm B &amp; A</td>
<td>Firm F &amp; I</td>
</tr>
<tr>
<td>Supply Chain Configuration – single-tier</td>
<td>Supply Chain Configuration – multi-tier</td>
</tr>
<tr>
<td>Firm F</td>
<td>Firm B, A &amp; I</td>
</tr>
</tbody>
</table>

Table 28: Comparison of Case Study Characteristics

Firm F is the most explicitly socially motivated of the studied SMEs, directing the majority of its profits to supporting and developing the Indian community to which they are committed; this is further reflected in its use of Fairtrade accreditation in contrast to firms A and I who focus on environmental accreditation. Their approach contrasts with the other 3 firms, as the Indian
community is their sole financial beneficiary, while the rest contribute a percentage of their profits to chosen charities. Finally all 4 firms have differing supply chains; 2 operate globally, with a focus on India, while the other 2 are focusing on developing ‘local’ supply chains i.e. based in the UK and Europe. Both single-tier and multi-tier configurations and partnership and strategic alliance structures are represented.

**Data Collection**

The development of a research protocol is considered a key stage in case study preparation and is effective in increasing the reliability of this method (Yin, 2009). It contains the instrument, procedures and general rules to be followed and is considered essential in multiple case studies. It provides an overview of the project, field procedures and case study questions - refer to Appendix 2 for the full protocol. It is necessary to cater to interviewees’ schedules and availability and as interviews tend to be more open ended than other forms of data collection full cooperation in responses cannot necessarily be guaranteed (Yin, 2009). A schedule was devised ahead of the data collection with key deadlines identified and then aligned with SME availability and accessibility; where possible a schedule of site visits was agreed with each firm in advance.

Systematic inquiry must occur in a natural setting rather than an artificially constrained one (Silverman, 1993) and therefore established field procedures are key and real world events and considerations need to be integrated into the data collection plan. The primary method and instrumentation for the data collection was the semi-structured interview (Miles and Huberman, 1994) with the principal informants being the SME owners, but there were multiple interviewees within each firm, which allowed different interpretations and viewpoints to be recorded and reflected different roles within SME supply chains. In addition the use of theory triangulation, through the application of multiple theoretical lenses, and data triangulation, through multiple qualitative and quantitative data sources can produce findings
that can broaden perspectives and interpretations (Padgett, 1998) of SSCM within the SME context.

While the key sources of data are individuals the firms are the unit of analysis, and although interviews may be the prime data source they are supported by additional sources of evidence (Yin, 2009). Observations were recorded during each visit and desk research undertaken to acquire a range of supporting data from firm websites and linked resources, such as Company Accounts, and the firms also provided relevant documentation such as marketing material and policies. Field notes were made after each interview and were useful in capturing the changes in mood of interviewees over the study period. Together with the interview transcripts these sources of data formed a clear narrative for each case (Karlsson, 2009) and provided multiple sources of evidence, as illustrated in Table 29 to strengthen the reliability and validity of the case research (Yin, 2009).

<table>
<thead>
<tr>
<th>Source of Evidence</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Documentation</td>
<td>Stable</td>
<td>Retrievalability</td>
</tr>
<tr>
<td></td>
<td>Unobtrusive</td>
<td>Biased selectivity</td>
</tr>
<tr>
<td></td>
<td>Exact</td>
<td>Reporting bias</td>
</tr>
<tr>
<td></td>
<td>Broad coverage</td>
<td>Access</td>
</tr>
<tr>
<td>Archival Records</td>
<td>Same as above</td>
<td>Same as above</td>
</tr>
<tr>
<td></td>
<td>Precise and quantitative</td>
<td>Accessibility due to privacy reasons</td>
</tr>
<tr>
<td>Interviews</td>
<td>Targeted</td>
<td>Bias due to poorly constructed questions</td>
</tr>
<tr>
<td></td>
<td>Insightful</td>
<td>Response bias</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inaccuracies due to poor detail</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reflexivity</td>
</tr>
<tr>
<td>Direct Observations</td>
<td>Reality</td>
<td>Time consuming</td>
</tr>
<tr>
<td></td>
<td>Contextual</td>
<td>Selectivity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reflexivity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cost</td>
</tr>
<tr>
<td>Participant</td>
<td>Same as above</td>
<td>Same as above</td>
</tr>
<tr>
<td>Observation</td>
<td>Insightful into interpersonal</td>
<td>Bias due to investigator’s manipulation of events</td>
</tr>
<tr>
<td></td>
<td>behaviour and motives</td>
<td></td>
</tr>
<tr>
<td>Physical Artefacts</td>
<td>Insightful into cultural features</td>
<td>Selectivity</td>
</tr>
<tr>
<td></td>
<td>Insightful into technical operation</td>
<td>Availability</td>
</tr>
</tbody>
</table>

Table 29: 6 Sources of Evidence: Strengths and Weaknesses (Yin, 2009 p.86)

A total of 6 visits were made to each SME over a 12-month period and where possible single interviews were conducted with a firm’s suppliers; for Firm F a total of 3 interviews were undertaken with the owner of the business, a joint interview with their designer and the manager of their first, most profitable shop, and single interviews with the Retail and HR
Manager and the merchandiser (Appendix 7). All interviews were conducted at their head office with the exception of the joint interview, which was conducted at the Totnes shop. Firm B interviews were primarily undertaken with the owner, but a single interview was conducted with the Design Manager and 2 interviews with the Supply Chain Manager, together with single interviews with their key Devon supplier and the UK agent of their China supplier (Appendix 8). Interviews at Firm A were also primarily with the founder, although the final visit enabled interviews to be conducted with the business manager and also the co-founder; one of their key UK suppliers was also interviewed during the study period (Appendix 9). Finally all visits to Firm I involved an interview with the owner-founder, but during the fifth visit the Supply Chain Manager, Senior Designer and Finance Manager were all interviewed (Appendix 10).

**Data Analysis and Findings**

There are multiple ways to approach qualitative data analysis, including the identification of patterned regularities, comparison with another case, evaluation through comparison with a standard, and contextualising the data in a broader analytical framework using a recognised body of theory (Wolcott, 1994). Eisenhardt (1989) suggests 2 key steps in case study analysis, namely analysis of within case data and searching for cross-case patterns. The analysis of the primary research data built on the processes undertaken and themes developed from the literature reviews and mini-case studies, and this provided an analytical framework that became progressively more focused and detailed, as illustrated in Figure 19.

This framework involved a series of systematic procedures, which were followed in order to identify the essential features and relationships both within and across the 4 studied cases. The within case analysis process employed open coding methods to identify a range of different themes for each individual firm, which was then formalised through the cross case analysis. The thematic matrix developed from the within case themes and a comprehensive
pivot table enabled comparison of the 4 firms and then a selective coding process was employed to identify core categories and emerging themes.

The within-case analysis process commenced with simple arrays that enabled the display of the data for each case study and the opportunity to become intimately familiar with each case as a standalone entity (Karlsson, 2009). A Checklist Matrix (Miles and Huberman, 1994) was developed to identify recurrent themes in each case, and as a ‘springboard’ to enable speculation about the data (Strauss, 1993). This informed a Thematic Matrix and enabled comparison of the cases and identification of dominant and emergent themes within the data. This was supported by content analysis of the 4 cases to allow data reduction and dominant categories to be presented visually.

**Figure 19: Analytical Framework**
Incidents of phenomena in the data were coded into themes following the Strauss and Corbin (1990) 3 step form of coding; the arrays and Checklist Matrix represented the open coding stage and allowed data to be taken apart and initial themes to be identified through analytic abstractions grounded on close observation of the data (Strauss, 1993), while axial coding primarily through cross case analysis put the data back together in different ways to link categories and themes in a rational manner. Selective coding was then applied to analyse the identified categories and key emergent themes (Karlsson, 2009).

The number of categories was limited to maintain a focus on the finalised research questions and reviewed literature, and the large amount of data acquired through the research process was reduced, displayed and verified (Miles and Huberman, 1994). This progressed into the identification of core categories, which represented the main theme of the research and the concept to which other key concepts would relate (Strauss and Corbin, 2008).

This data reduction and coding system was implemented to relate interview content from each case to specific themes and categories, with secondary data used to verify, triangulate and enhance the analysis (Jick, 1979, Karlsson, 2009). The development and performance of each firm over its history and the impact of specific external factors across the observational period were built into the analysis process. Study over a 12-month period enabled key aspects of the sustainability decision-making process to be observed as well as the potential impacts of external factors specific to the clothing industry, such as increased raw material prices.

The data analysis process was significantly informed by the themes identified through the literature reviews and Phase 1 research. Table 30 illustrates how the literature review started by defining and interpreting sustainability, then specifically within operations and supply chains, with a final focus on how the aspects of sustainability and supply chains applied within the specific and currently underexplored research area of SMEs. Each stage of the literature review informed the next and was conducted simultaneously to the Phase 1 research, so that initial research findings could refine and focus the review and subsequent research questions.
The sustainability literature review illustrated there are 3 key recognised dimensions of economic, social and environmental performance when considering the operational application of the concept, and that a different emphasis on each dimension can translate into different strengths of sustainability. The supply chain literature review produced themes around supply chain practice, related in turn to how extended supply chain boundaries impact sustainability practices; the importance of supply chain relationships in achieving sustainability was emphasised and suggested a mechanism for addressing the current gap in social sustainability performance research.

<table>
<thead>
<tr>
<th>Key Themes</th>
<th>Sub Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sustainability</strong></td>
<td></td>
</tr>
<tr>
<td>Defining Sustainability</td>
<td>Sustainability dimensions</td>
</tr>
<tr>
<td></td>
<td>Sustainability strengths</td>
</tr>
<tr>
<td></td>
<td>Sustainability trade-offs</td>
</tr>
<tr>
<td><strong>Sustainability in Supply Chains</strong></td>
<td></td>
</tr>
<tr>
<td>Supply chain practice</td>
<td>Environmental practice &amp; process</td>
</tr>
<tr>
<td></td>
<td>Certification &amp; accreditation</td>
</tr>
<tr>
<td></td>
<td>Lack of social dimension research</td>
</tr>
<tr>
<td>Supply chain boundaries</td>
<td>Product lifecycle</td>
</tr>
<tr>
<td></td>
<td>Closed loop</td>
</tr>
<tr>
<td>Supply chain relationships</td>
<td>Role of purchasing</td>
</tr>
<tr>
<td><strong>Sustainability in SMEs</strong></td>
<td></td>
</tr>
<tr>
<td>Owner-manager principles</td>
<td>Commitment</td>
</tr>
<tr>
<td></td>
<td>Trust</td>
</tr>
<tr>
<td></td>
<td>Sustainability literacy</td>
</tr>
<tr>
<td></td>
<td>Personal values &amp; morals</td>
</tr>
<tr>
<td>SSCM balance</td>
<td>Reduced emphasis on profit maximisation</td>
</tr>
<tr>
<td></td>
<td>Social priorities</td>
</tr>
<tr>
<td></td>
<td>Environmental priorities</td>
</tr>
<tr>
<td></td>
<td>Changes through firm growth</td>
</tr>
<tr>
<td>Social capital</td>
<td>CSR</td>
</tr>
<tr>
<td></td>
<td>Community</td>
</tr>
<tr>
<td></td>
<td>Charity</td>
</tr>
</tbody>
</table>

Table 30: Themes and Sub-themes from the Literature Reviews

The review of SME literature identified the relevance and importance of the role of owner-manager principles in implementing sustainability in supply chains. This offered new insight into the balance of the SSCM framework, which currently skews towards economic performance; SMEs typically apply less emphasis on profit maximisation, and this moves them away from a neoclassical economics approach to an inherently stronger position on the
sustainability spectrum. The SME literature indicated a stronger emphasis on the social performance dimension and highlighted the relevance of Social Capital Theory for understanding how to address this under explored dimension in supply chain practice.

The themes from the mini case studies presented again in Table 31 build on the themes and sub-themes identified from the literature reviews, with a stronger emphasis on the impact of certain SME characteristics on achieving sustainability and how SMEs prioritise the 3 sustainability performance dimensions. It recognised the important role of owner-manager principles and how these can translate into supply chain practices and relationships; the trust and mutually beneficial nature of these relationships generates social capital that can enable SMEs to overcome certain resource constraints. This builds on the supply chain themes from the literature review, but the Phase 1 research findings also indicated SMEs may configure their supply chains in relation to size, management structure and specific owner-manager principles.

### Key Themes

<table>
<thead>
<tr>
<th>Key Themes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SME characteristics</td>
<td>Specific SME characteristics can enable sustainability</td>
</tr>
<tr>
<td></td>
<td>Firm growth can change sustainability approach</td>
</tr>
<tr>
<td></td>
<td>Changes in management structure can impact founder principles</td>
</tr>
<tr>
<td>Prioritisation of dimensions</td>
<td>Financial performance not main priority</td>
</tr>
<tr>
<td></td>
<td>Environmental performance has greater priority</td>
</tr>
<tr>
<td></td>
<td>Social dimension better represented</td>
</tr>
<tr>
<td>Principles</td>
<td>Strong influence on practices &amp; supply chain relationships</td>
</tr>
<tr>
<td></td>
<td>Personal visions</td>
</tr>
<tr>
<td></td>
<td>Shared visions &amp; principles</td>
</tr>
<tr>
<td>Practices</td>
<td>SME heterogeneity means no standard approach</td>
</tr>
<tr>
<td></td>
<td>Raw materials &amp; dyeing process key focus</td>
</tr>
<tr>
<td></td>
<td>Sustainability practices reduce along the supply chain</td>
</tr>
<tr>
<td>Social capital</td>
<td>Generated through personal &amp; committed supply chain relationships</td>
</tr>
<tr>
<td></td>
<td>Can help overcome SME constraints &amp; limitations</td>
</tr>
<tr>
<td></td>
<td>Trust &amp; mutual benefit</td>
</tr>
<tr>
<td>Supply chain configuration</td>
<td>Linked to SME size &amp; management structure</td>
</tr>
<tr>
<td></td>
<td>Local vs. global suppliers</td>
</tr>
<tr>
<td></td>
<td>Social priority</td>
</tr>
</tbody>
</table>

Table 31: Mini Case Study Themes

The themes from the literature reviews and mini case studies were incorporated into the analytical process to enable both aligned and emerging themes to be identified from the
within case and cross case data analysis. The following sections present and discuss key within case themes for each firm, supported by relevant quotes, followed by a categorisation of the within case themes, discussion of the cross case themes and findings, and results of the selective coding stage of the data analysis.

**Within Case Analysis and Themes**

The interview transcripts for each of the 4 cases were initially analysed using the Checklist Matrix (Appendix 11) (Miles and Huberman, 1994), and this served as a mechanism for starting to organise the data and identify initial themes within each case, as well as highlighting relevant quotes to support these themes and bring the data to life (Wolcott, 1994). It involved the systematic and iterative review of each set of case transcripts and the extraction of recurrent data within each case, which was then assigned to an initial theme. No attempt was made at this stage to formally organise or categorise the themes.

While the analysis process was guided by themes from the literature reviews and mini cases (Tables 30 and 31), new recurrent themes were also identified; once the analysis had been completed for Firm F the identified themes were investigated within the other cases to enable cross case comparison, as well as identifying further case specific themes. The different themes recorded for each firm and their suppliers were then compared against the literature and Phase 1 themes to identify and develop relevant meta themes against which the wide range of themes could begin to be organised. Firm overviews and their findings are presented and discussed as follows.

**Firm F**

The business grew out of a group of Bristol residents twinning their community with a South Indian village in 1978. Their intention was to promote friendship and mutual understanding between 2 very different parts of the world. Several years later the group’s secretary received a letter from a village leader, which thanked the committee for all their support, but made the simple assertion that as skilled craftspeople the villagers wanted work not charity. With this in
mind she set up the business as a means of providing employment for the village by utilising the traditional handloom weaving, one of the major crafts of the area.

<table>
<thead>
<tr>
<th>Established</th>
<th>1985</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnover 2011/12</td>
<td>£767,000</td>
</tr>
<tr>
<td>Employees</td>
<td>+30 people in the UK</td>
</tr>
<tr>
<td>Accreditation</td>
<td>Fairtrade</td>
</tr>
<tr>
<td>Customers</td>
<td>Retail &amp; wholesale</td>
</tr>
</tbody>
</table>

**Table 32: Firm F Summary**

The UK provides design and marketing skills and capital investment in the form of forward payments, and the community provides the weaving and tailoring skills. From small beginnings, when 6 people were employed in the Tailoring Units, the firm has grown to provide employment to almost 200 tailors, cutters, hand-finishers, embroiderers and craft workers. A further 90 people are employed as handloom weavers who produce the Fairtrade certified organic cotton cloth used to make their range of products. The firm has shops in the Southwest of England, as well as an online and catalogue mail order business and a wholesale department. The firm’s mission statement is ‘to import directly from rural India with the sole aim of Fair Trading’.

Firm F was a fair trade company before the Fairtrade licensing process existed and was the first ethical clothing retailer in the UK, with the core purpose to provide continuous employment for the village. Production is staggered across the year to guarantee this, and the firm considers itself responsible for the whole factory and its employees. The price the firm pays per garment ensures members of the Tailoring Societies receive above average wages, secure employment, health care allowance, provident fund and onsite crèche. All profits not used to grow the business and generate employment are donated to their charity, which supports social development projects in the area.

While not necessarily the norm for Fairtrade-sourced cotton the firm has also used organic cotton in its production since 2000. It also employs Global Organic Textile Standard (GOTS) non-azo reactive dyes on the fabrics, working with an environmentally responsible dyehouse, which
does not release chemicals into the water supply and recycles all waste. Traditional production methods also minimise the firm’s impact on the environment; the majority of fabric is hand-woven, which preserves traditional techniques and removes the requirement for electricity, while final garments are stitched using pedal powered sewing machines and all embroidery is done by hand.

The firm’s supply chain (Figure 20) is ‘beautifully short’ (Owner), and all key production stages are based in India. The community is responsible for weaving the cotton fabric and manufacture of products from this fabric, so these stages are both managed in the same location, as illustrated by the shaded areas in Figure 20. Since 2000 Firm F has worked with one of the world’s largest direct suppliers of organic and Fairtrade cottons. This company co-ordinates the production, certification, procurement and storage of cotton fibres and is committed to providing high quality, traceable cotton fibre, promoting ethical and ecological values through their registered brand.

Fairtrade organic cotton is transported to another longstanding supplier for spinning into yarn; the supplier grew out of a non-profit rehabilitation program established in Tirupur by Franciscan Sisters. Streamlined operations are made possible by a vertically integrated infrastructure, and facilities occupy an extensive area of 50,000 square feet. This stage sharply contrasts the manual production methods used within the community and because of these limitations the community is unable to produce knitted jersey, which uses specialised machinery. Velvet and corduroy are also specialised fabrics, which can no longer be woven by hand; a supplier in Mumbai produces this fabric, which is then sent to the community to be manufactured into garments.
Figure 20: Firm F Supply Chain

Key: shaded areas = Indian community

Raw Material
- Cotton Fibre
  - Agrocel, Gujarat

Spinning
- Assisi Garments

Spinning arranged by Agrocel for Velvet & Corduroy & sent to Velcord in Mumbai for weaving

Weaving
- Self help groups

Dyeing
- Erode, Tamil Nadu

Manufacturing
- Knitted cotton jersey products
  - Assisi Garments

Shipping
- Airfreight & seafreight
  - Madras

UK Delivery
- Airfreight – Bristol is final destination to a bonded warehouse and after customs clearance to Bristol warehouse
- Seafreight – Tilbury for customs clearance and then direct to Bristol warehouse
A strong theme that emerged from this case, as illustrated in Table 33 was the firm’s desire to have a tangible and positive impact on people’s lives coupled with a strong sense of community and charity. The well-being of the Indian tailors is acknowledged as the firm’s top priority and as well as guaranteeing work throughout the year each employee receives a fair wage and extra benefits such as gifts of money at festival times and on marriage, access to a provident fund and gratuity on retirement, holiday, casual and medical leave and an allowance for medical care. This commitment to fairness extends beyond the specific community to other stages of the supply chain and the firm recognises that even a small change such as using organic cotton can make a big difference; ‘Even if it is only 1% of the total cotton market it’s still making a change to hundreds of thousands of farmers, you’ve made a change to their lives’ (Owner).

<table>
<thead>
<tr>
<th>Meta Themes</th>
<th>Home originated business</th>
</tr>
</thead>
<tbody>
<tr>
<td>SME Characteristics</td>
<td>Constraints due to size</td>
</tr>
<tr>
<td></td>
<td>Owner control</td>
</tr>
<tr>
<td></td>
<td>Team mentality</td>
</tr>
<tr>
<td>Supply Chain Practice</td>
<td>SCM understanding</td>
</tr>
<tr>
<td></td>
<td>Supply chain delays</td>
</tr>
<tr>
<td></td>
<td>Quality issues</td>
</tr>
<tr>
<td></td>
<td>Certification</td>
</tr>
<tr>
<td>Supply Chain Relationships</td>
<td>Personal relationships</td>
</tr>
<tr>
<td></td>
<td>No authoritative structure in India</td>
</tr>
<tr>
<td>Principles</td>
<td>Communication of principles</td>
</tr>
<tr>
<td></td>
<td>Fairness</td>
</tr>
<tr>
<td></td>
<td>Changing lives</td>
</tr>
<tr>
<td></td>
<td>Continuous employment</td>
</tr>
<tr>
<td>Financial/Operational</td>
<td>Impact of recession</td>
</tr>
<tr>
<td></td>
<td>Increased cost of cotton</td>
</tr>
<tr>
<td></td>
<td>Cost minimisation</td>
</tr>
<tr>
<td></td>
<td>Waste minimisation</td>
</tr>
<tr>
<td></td>
<td>Certification – cost &amp; difficulties</td>
</tr>
<tr>
<td></td>
<td>India – changes in culture &amp; prosperity</td>
</tr>
<tr>
<td>Social responsibility</td>
<td>Local community</td>
</tr>
<tr>
<td></td>
<td>Global community</td>
</tr>
<tr>
<td></td>
<td>Charity</td>
</tr>
</tbody>
</table>

Table 33: Meta Themes within Firm F

The firm is part of both its local community, as it grew out of a twinning initiative, and a more global community where they actively look to have a positive impact with all the suppliers they
interact with. The owner’s commitment has driven them to direct all profits not used to grow the business to their charity, The South Indian Rural Development Trust, which supports social development projects in the area. In 2006 architect-designed tailoring units were opened on the village outskirts to ensure workers have a spacious, cool, light and comfortable working environment. The owner has known some members of the community for over 20 years and has seen children grow and develop through their charitable donations; this close personal bond with the community suggests an almost maternalistic relationship, underpinned by the owner’s personal commitment to make a difference.

As the oldest of the studied SMEs it represents a ground-breaking, industry leading firm; 'There was nowhere else you could buy ethical clothes when we first started' (Owner) and was trading fairly before Fairtrade existed as a formal mechanism. This commitment was inspired by the owner’s time in VSO in India and the principles are well embedded in the firm culture; 'The point of the shop is to give people in India work' (Shop Manager). The firm is Fairtrade certified, but there is a sense that this is done to reflect its core principles more clearly to its customers. The certification represents a key cost and challenge to the firm, but is required to provide transparency in a supply chain that is inherently committed to operating fairly.

Firm F seemed to encounter a number of problems within its supply chain due to internal factors around its size, lack of authoritative structure in their operations and an acknowledged poor understanding of SCM, and it was affected by external factors, including the increased cost of cotton, the recession, and the changing culture and prosperity of India. This has had a direct impact on their profitability; when first established despite the firm’s inexperience ‘we used to be able to sell a shirt with masses of profit, but now with the cotton prices so high our profit margins are going down and down’ (Owner). While the firm has managed to have a positive impact on the Indian community over its lifespan, the improvements in the country’s prosperity now make it more challenging for the UK operation; ‘India is getting richer and we’re getting poorer’ (Merchandiser) and ‘the cost of everything in India has gone up tremendously and margins are getting much tighter than they used to be’ (HR Manager).
The firm has always looked to minimise cost and waste, as illustrated within the Financial/Operational meta theme, to ensure that maximum profits could be channelled into building the business in India and the charity. With the impact of the above external factors there has been a heightened focus on minimising cost and the UK business and shops operate as cost-effectively as possible. They manage stock manually and have no computerised systems to link sales to stock replenishment as this represents a cost that would not directly benefit the Indian community. They have also investigated all ways of reducing cost within the supply chain, such as training in-house staff to manage shipping rather than a 3rd party organisation. However despite these measures the firm eventually closed in 2013 as a result of increased costs, reduced profits and supply chain delays; while the firm had survived for 25 years ultimately its inability to compromise on its very specific social commitments prevented it achieving a level of economic performance that would allow it to continue.

**Firm B**

Firm B specialises in making a select range of environmentally friendly technical clothes from recycled or natural fibres, such as merino wool, and at the heart of the company ethos is a desire to make the best technical apparel with minimal environmental impact as well as clothes that last. "We want to go back to making the kind of jacket your dad still has after 30 years... We don't want that cycle where you get rid of stuff quickly. We want people to keep our stuff for a long time." From its beginnings in the founder’s bedroom in 2002, the firm has always stood for three points of commitment, namely product, people and environment.

A key challenge for the firm was to establish a philosophy that united these 3 passions and provided an understanding of why and how to implement them throughout the business. The firm considers one of the most attractive aspects of performance clothing the evolutionary process in its creation i.e. last year’s advancement becoming the foundation for this year’s product, and this year’s product becoming the foundation for next year’s advancement. It was with this in mind that the design philosophy was inspired by the process of evolution. They believe that nature can be considered more sustainable than the human process of design; this
has significantly influenced their use of biomimicry, where innovation in materials and products are inspired by nature, rather than focusing on the extraction of nature (Benyus, 1997).

<table>
<thead>
<tr>
<th>Established</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnover 2011/12</td>
<td>£668,000</td>
</tr>
<tr>
<td>Employees</td>
<td>10</td>
</tr>
<tr>
<td>Accreditation</td>
<td>GOTS</td>
</tr>
<tr>
<td>Customers</td>
<td>Independent retailers</td>
</tr>
</tbody>
</table>

Table 34: Firm B Summary

The firm strives to source materials derived from recycled, animal-friendly, or easily renewable origins. They begin the design process at the fibre stage and flex creative control right through to how the product can be repaired, maintained, recycled, and disposed. However there are limits to what can be currently achieved and is often available, but they are focused on developing new fabrics, technologies and methods of construction, to bring their customers the best technical apparel. All products are designed in Cornwall, backed by a pioneering sustainable design philosophy, which aims to minimise the environmental impact of the products they design and produce, and are manufactured in some of the most ethically aware factories available.

The firm has set the target of being completely in control of all resource management, from raw materials to final garments, a commitment that has seen them take control of over 95% of their textiles, garment development and manufacturing. This level of control has enabled them to achieve a high level of supply chain transparency, which is presented to their customers and suppliers through their I-Spy initiative. There is a further commitment to making their supply chain as local as possible and developing UK and European sources of supply, strongly evidenced in their development of UK-based merino quality wool through partnership with a farm in Devon; Figure 21 illustrates the extent to which the firm aims to keep its supply chain in Europe.
Figure 21: Firm B Supply Chain

Product: Beanies & Scarves
- Wool
  - Devon UK
- Processing & Manufacturing
  - Scotland

Product: Base Layers
- Merino Wool
  - Australia
- Scouring
  - China
- Spinning
  - Bulgaria
- Manufacturing
  - Portugal

Product: Cotton Jersey
- Organic Cotton
  - Eastern Europe
- Spinning
  - Portugal
- Dyeing/finishing/
  - manufacturing
  - Portugal

Product: Waterproof & Insulation
- Polyester
  - Italy/Japan
- Processing
  - Italy/Japan
- Manufacturing
  - Portugal
Firm B’s owner has strong environmental values in that they will not make products that cause more of a problem than they solve, and they strive to communicate their honesty and trustworthiness to suppliers, through long-term, mutually beneficial relationships, and to customers, through telling the story of the brand. They recognise the importance of honesty and trust on the quality of their supplier relationships; ‘It’s not a case of relying on them, but trusting them. It’s about having really good relationships with whoever we’re working with, that there’s transparency and we understand what is required from each other’ (Supply Chain Manager). The firm has strong, primarily online-based branding and aims to tell a story about its products; for customers they ‘hope that our honesty comes out in our marketing and people will learn to trust that’ (Owner).

The business was established with an explicit commitment to the environment, inspired by the achievements of outdoor clothing manufacturer Patagonia, and the owner and employees demonstrate a high level of eco literacy. The Design Manager is specifically influenced by the concept of bio-mimicry where materials and products are inspired by how nature responds and adapts to its environment (Benyus, 1997); ‘Sustainability is change, it’s adaptability and it’s survival. Life sustains itself by being incredibly dynamic in terms of its ability to evolve’ (Design Manager).

Their commitment to the environment is directly translated into their products and they aim to source environmentally responsible materials, processes and suppliers. They also recognize that their products have to perform to a high standard and be commercial, and ‘wouldn’t go with any fibre or fabric that’s purely an eco story, but didn’t work on a performance level’ (Design Manager). As part of their product lifecycle, closed loop approach product longevity and functionality are key considerations within the Product meta theme in Table 35; ‘if you’ve spent £300 on a jacket it should last you 5 years’ (Owner).
Table 35: Meta Themes within Firm B

<table>
<thead>
<tr>
<th>Meta Themes</th>
<th>Home originated business</th>
<th>High eco literacy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SME Characteristics</strong></td>
<td>SCM understanding</td>
<td>High levels of measurement (2)</td>
</tr>
<tr>
<td></td>
<td>Unique processes</td>
<td></td>
</tr>
<tr>
<td><strong>Supply chain practice</strong></td>
<td>European manufacturing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Creation of new industry/supply chain</td>
<td></td>
</tr>
<tr>
<td></td>
<td>UK produced, processed &amp; manufactured (1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Local not necessarily ethical (1)</td>
<td></td>
</tr>
<tr>
<td><strong>Supply chain configuration</strong></td>
<td>Personal relationships</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trust &amp; transparency</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Innovation, adaptability, evolution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Posterity &amp; heritage (1)</td>
<td></td>
</tr>
<tr>
<td><strong>Supply chain relationships</strong></td>
<td>Product lifecycle</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Closed loops (2)</td>
<td></td>
</tr>
<tr>
<td><strong>Product</strong></td>
<td>Longevity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Functionality</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Customer informs product development</td>
<td></td>
</tr>
<tr>
<td><strong>Principles</strong></td>
<td>Integrity &amp; honesty</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Product, environment, people</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Telling a story</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No compromise on quality (1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cannot hurry nature (1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Preservation (1)</td>
<td></td>
</tr>
<tr>
<td><strong>Financial/operational</strong></td>
<td>Commerciality</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buyer priorities - price over expertise (2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High street uncaring &amp; unaware (2)</td>
<td></td>
</tr>
<tr>
<td><strong>Social responsibility</strong></td>
<td>Local charity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Local community</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Textile brotherhood (1)</td>
<td></td>
</tr>
</tbody>
</table>

Key: 1 = UK supplier, 2 = China supplier

Their closed loop approach is visually presented on their website and shows how the firm addresses its strong environmental principles at all stages of the supply chain, as illustrated in Figure 22, and this includes the responsibility and contribution of customers both to product after care and the design and development process. The firm has a loyal customer base and the repair service they offer as part of their closed loop allows them to gain valuable feedback on product performance and functionality.
The firm is explicitly committed to the local area, supporting Cornwall-based charities such as Surfers Against Sewage (SAS) which align strongly with their brand and principles, and the owner intends for the business to always remain where it was established; 'we will always be in Cornwall. It’s where the brand was born, it’s part of why we do what we do so we would stay here'. The firm’s first product was made in Devon and still is, which reflects a strong, ongoing commitment to developing local supply chains and new industry; 'we’re always looking to bring things back to the UK and keep it more local, more transparent, natural fibres, that’s all part of the reason why it started'.

As indicated in Table 35 this commitment aligns strongly with the principles of the UK supplier they worked with to develop a local alternative to New Zealand sourced Merino wool. The supplier recognizes that local supply chains create a sense of community and connection, and that old-fashioned values can be harnessed to develop something new and commercial that aligns with nature. While unit prices may be higher than products sourced from overseas they consider that when mistakes arising from the long distance supplier relationship and other costs such as transport are factored in it is cheaper to bring production back to the UK. There is also the opportunity to tell the UK manufactured and sourced story to the customer.

In contrast the firm’s China supplier is more strongly aligned with their choice of closed loop processes and lifecycle approach, and places a stronger emphasis on supply chain practice. As an industry leader in closed loop technology they can put any returned garments, materials or components into their recycling process so long as they are 100% polyester. They are highly
proactive in monitoring these processes and the environmental impact of their operations; ‘everything is measured even if we’re importing plastic bottles from the UK back to Japan, we look at the CO2 emissions and it is closely monitored to see if that is worthwhile to do that.’

**Firm A**

The idea for this business evolved in the early 1990s and the first organic cotton T-shirt was sold in 1996. It was started for 2 main reasons: to offer beautiful and useful textile products that are kind to the environment and to consumers’ health and well being, and to provide meaningful livelihoods for all people who work with, and in, the firm. It is a small firm, with few corporate ambitions, and they aim to offer all customers a fair, courteous and informative service. They own one retail shop in South Devon, where the warehouse is also located, have an online presence and also supply wholesale customers.

<table>
<thead>
<tr>
<th>Established</th>
<th>1996</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Turnover 2011/12</strong></td>
<td>£504,000</td>
</tr>
<tr>
<td><strong>Employees</strong></td>
<td>8</td>
</tr>
<tr>
<td><strong>Accreditation</strong></td>
<td>GOTS &amp; Soil Association</td>
</tr>
<tr>
<td><strong>Customers</strong></td>
<td>Retail &amp; wholesale</td>
</tr>
</tbody>
</table>

*Table 36: Firm A Summary*

The owners are passionate about the environment and aim to ensure that any products they source or manufacture cause minimal damage to the environment. This decision process begins at the seed level and they believe that organic farming offers the only sustainable option for the future of textile production; they therefore choose organic fabrics over conventional wherever possible. They believe growing crops and raising livestock in accordance with natural principles is a key way to make collective actions more sustainable, and reduce carbon footprints. This starts with the farmer and the cotton picker working in a safe environment, getting paid a fair wage, and continues with the textile worker assembling garments in good working conditions for decent pay.

The firm’s products are certified to the Global Organic Textile Standard (GOTS) and the owner
was heavily involved in establishing the standards from 2002 to 2005. They are also Soil Association certified, which involves a yearly audit of the whole organization—see Appendix 12 for GOTS and Soil Association standards and practices. When sourcing a new product or supplier they also apply a set of 12 Sustainability Criteria to enable the decision making process (Appendix 9). If not all criteria are currently met they will work with suppliers to bring them to the standard they require.

The firm aims to manufacture as many of their products in the West Country as possible and by supporting a small manufacturing facility outside Plymouth, hope to communicate the message that ‘made in the UK’ matters and intend to contribute to re-invigorating the local textile skill base. Where products cannot be UK-manufactured they aim to work with UK and European suppliers and deal directly with the producer, not 3rd party agents. They always aim to negotiate a fair price that will help to ensure the sustainability of the local farming and production facilities. The firm works with a large number of suppliers, but has a core of 25 to 30 suppliers, which produce the majority of their wide range of products. With the exception of 2 suppliers in the US and Brazil respectively all core suppliers are based in Europe with the largest proportion in the UK and Germany. Figure 23 illustrates the supply chains of 4 of the firm’s key suppliers.
Figure 23: Firm A Supply Chain

**John Arbon Textiles**

Based in UK

**Product: knitted socks and scarves**

Raw Material: Alpaca
UK sourced – mainly South West producers

Spinning: Fibre Harvest Mill
Devon

Dyeing: South Yorkshire

**Manufacturing**

Scarfes - home knitters
Devon & South West

Delivery: Transported by road to firm’s warehouse

Scarfes - machine knitted
Midlands

**Continental Clothing**

Based in UK

**Product: Women’s T-shirts**

Raw Material: Organic Cotton
Turkey

Spinning/dyeing: Turkey

Manufacturing: Turkey

Delivery: Transported by road to Continental’s London warehouse

Ordered by firm as required
Living Crafts

Based in Germany

Product: underwear

CoopNatural - Natural Fashion

Based in Brazil

Product: pyjamas
This firm’s owners also place a very strong emphasis on nature and the environment, and both are highly eco-literate, and ‘started by saying we want to be dark green and supply dark green products, we know that our market will be different shades of green and perhaps even some of our market won’t care all that much about our green, but that’s what we want to do’ (Owner). They wanted to make a positive difference, and prove that an ethical business can be economically viable in a capitalist system, as illustrated in Table 37. ‘The reason why I started the business is quite selfish. It wasn’t entirely for somebody else, it was mostly for myself so if I feel satisfied that my principles are being upheld and feeding a business model then actually that’s good enough’ (Owner).

<table>
<thead>
<tr>
<th>Meta Themes</th>
<th>SME Characteristics</th>
<th>Supply Chain Practice</th>
<th>Supply chain configuration</th>
<th>Supply chain relationships</th>
<th>Supply chain boundaries</th>
<th>Financial/Operational</th>
<th>Social responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Home originated business</td>
<td>Certification crucial to business</td>
<td>Short supply chains</td>
<td>Extensive research</td>
<td>Product lifecycle</td>
<td>Possible to run a profitable ethical business</td>
<td>Charity</td>
</tr>
<tr>
<td></td>
<td>Money not prime purpose when established</td>
<td>Resource maximisation</td>
<td>Local manufacture</td>
<td>All suppliers understand their principles</td>
<td>Ethical consumerism</td>
<td>Small margins but profitable (1)</td>
<td>Key: 1 = UK supplier</td>
</tr>
<tr>
<td></td>
<td>Team mentality</td>
<td>Cost minimisation</td>
<td>New fibre industry (1)</td>
<td>Owner wanted to contribute to positive change</td>
<td>‘Dark green’ principles</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High eco literacy</td>
<td>Waste minimisation</td>
<td></td>
<td>Trust</td>
<td>Authenticity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 37: Meta Themes within Firm A

The owners consider the lifecycle of a product from buying the seed, to how to create the raw material right to the end product. They feel they are ‘providing products that people need in a way that satisfies their idea of quality as well as their idea of social and environmental
responsibility’ (Owner). Product authenticity is important and where possible they prefer to bring several materials or products together to make their own product on site, as this feels more authentic than buying a finished product off the shelf and then stamping their logo on it. This commitment to the product translates into very loyal retail customers who will order again and again as they like the whole ethos of a family run business and how they make and source what they do.

More than 2 years’ of research were conducted before the owners started the business, so extensive information on potential suppliers was available before they approached them. They support small independent suppliers that have a similar ethos, have always stayed true to the same market, and aim to establish long-term relationships. ‘We’re quite relaxed with suppliers and we don’t make any enforcements on them. We’ve been going for years and years and they’re all quite small companies and traditionally run, longstanding companies. People who would die for us.’ (Owner). Consequently all suppliers they work with understand their principles and frequently share their sustainability vision.

The owners recognise that there are growing opportunities for working with local suppliers and generally try to make their supply chains as short as possible, although certain raw materials such as organic cotton can only be sourced from overseas. Their relaxed, trust-based relationships mean that they reserve the right to visit all operations, but very rarely do. They have approximate visibility of all supply chain stages and different suppliers provide different amounts of visibility, but they consider most of them to be honest and clear. They acknowledge they do not always have visibility of all the supply chain tiers and this is one of the reasons why they consider GOTS certification crucial as it provides assurance of responsible practice.

As indicated in Table 37 one of their key UK suppliers echoes the firm’s relaxed, supportive approach, looking to work with like-minded and small independent, often local businesses, and illustrates how the firm’s suppliers align with their principles and sustainability vision. Firm
A explicitly did not have profit maximisation as a key goal when it was established, and this UK supplier is happy to make only small margins on its products provided they remain true to their values. They have a strong sense of community and look to make a tangible contribution to the textile industry.

Community involvement is also important to the firm owners and they are actively involved in local initiatives; one of the reasons they set up the business in Totnes, Devon is because there is a large informal network of like-minded businesses with approximately 50 small green ethical companies within a 20 mile radius. One of the owners is a trustee of 6 charities, including local charities such as Transition Network and organisations, such as the Soil Association, which align strongly with their environmental principles. These commitments include donating time as well as money.

**Firm I**

In 2004 the founders of Firm I had their first baby and wanted to use fabric rather than disposable nappies as part of their commitment to help the planet. They found it difficult to find baby clothes that would fit over cloth nappies, as most clothes seemed to be designed for smaller, disposable nappies. Their solution was to make their own baby clothes, despite having no experience in the textile or clothing sector, and sell them to other people experiencing the same problem.

It was always important they ran their business in the best way that they could, and they chose to make their baby clothes from ethically manufactured organic cotton; they wanted to have a positive social impact as well as using environmentally responsible natural fibres. The clothes were successful in both domestic and international markets and the owners extended the range to include children’s clothes and breastfeeding clothing. In 2008 the brand name was changed to reflect the strong environmental and social principles that the firm had applied from the start.
Established 2004

<table>
<thead>
<tr>
<th>Turnover 2011/12</th>
<th>£2.3M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees</td>
<td>27</td>
</tr>
<tr>
<td>Accreditation</td>
<td>GOTS &amp; Soil Association</td>
</tr>
<tr>
<td>Customers</td>
<td>Mainly small independent retailers – UK, Europe &amp; USA</td>
</tr>
</tbody>
</table>

Table 38: Firm I Summary

The firm’s key principle is ‘to make sure that everybody gets looked after’. The choice of organic cotton ensures that farmers and their families don’t run the risk of being poisoned by pesticides, and receive a fair price for their hard work, as well as minimising the impact on the local ecosystem and reducing the amount of water needed to grow cotton. Organic cotton is softer and more breathable and less likely to trigger allergies and eczema. The clothes are designed in Cornwall and manufactured in factories by workers who receive a proper wage and work appropriate hours.

The firm supports the GOTS ideals, by gaining certification as a brand and has also recently become Soil Association certified. They consider it important that as a respected, innovative and leading brand in the world of organic children’s clothing, they provide this backing to the control system that is used within the industry. They believe very strongly that the ethics behind the standard offer should be the best fit for their farmers, factories, workers and customers around the world.

When sourcing suppliers the firm investigates where the cotton comes from and how it is processed. They ensure that FLO-Cert registered suppliers process the cotton before reaching its final destination at the factories. It is important that all the people involved with making their clothes have good working conditions and are treated fairly and they ensure this by referencing the criteria of the Social Accountability 8000 standard. All factories are required to have this SA8000 certification and it goes even further than the social standards of GOTS.

Products are manufactured in India, Turkey and Portugal and the organic cotton grown in India comes from a number of rural villages, which form part of a large co-operative. Figure 24 shows the supply chain structure for their India and European supply chains and illustrates that
the majority of products are produced in India. The UK design team visits the manufacturers each season to ensure everything is agreed with the new designs and that everyone understands what is required. All factory employees are over 19 years old, and receive a fair, fixed salary and work decent hours. There are now over 500 employees in the Calcutta-based factory that they have worked with since they started the business.
Figure 24: Firm I Supply Chain

**Product: Corduroy & T-shirts**
- Organic cotton & spinning Cooperative
- Dyeing Mumbai
- Weaving Inderbad
- CMT Mumbai

**Product: Cambric, poplins, interlock & jersey**
- Organic cotton Chetna (Solidaridad)
- Dyeing Calcutta
- Weaving Calcutta
- CMT Calcutta

**Product: Babygros & pyjamas**
- Organic Cotton Various sources
- Processing & manufacturing Tirupur

**Product: Basic knits**
- Organic cotton Multiple sources
- Spinning Tirupur
- Processing & manufacturing Tirupur

Design UK

Cornwall Warehouse
Product: Interlock & jersey

Design
UK

Organic cotton
Turkey

Spinning
Turkey

Dyeing
Turkey

CMT
Turkey

Product: Tights & socks

Yarn
Portugal

Dyeing
Portugal

CMT
Portugal

Cornwall
Warehouse
As well as a response to the lack of suitably sized organic baby clothes, the owners established the business to ‘make a difference to the farmers so there are as many farmers as possible growing organic cotton’ (Owner) together with a vision to be the most desirable and trusted clothing brand on the planet. Like Firm A they wanted to prove that you can run a sustainable business successfully, but also show that growing a business and being profitable is not necessarily a bad thing; ‘we’re just doing the right thing by everybody basically. The planet, the people and everybody involved and we’re just basically great people as a result. It is balancing those good things against everything I want to do which is to make more money’ (Finance Manager).

<table>
<thead>
<tr>
<th>Meta Themes</th>
<th></th>
</tr>
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<tbody>
<tr>
<td>SME Characteristics</td>
<td>Home originated business</td>
</tr>
<tr>
<td></td>
<td>100% commitment from owners</td>
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<tr>
<td></td>
<td>Team mentality</td>
</tr>
<tr>
<td></td>
<td>Owner control of vision</td>
</tr>
<tr>
<td></td>
<td>Dexterity</td>
</tr>
<tr>
<td></td>
<td>Resourcefulness</td>
</tr>
<tr>
<td>Supply Chain Practice</td>
<td>Certification crucial to business</td>
</tr>
<tr>
<td></td>
<td>Resource maximisation</td>
</tr>
<tr>
<td></td>
<td>Traceability</td>
</tr>
<tr>
<td></td>
<td>Waste minimisation</td>
</tr>
<tr>
<td></td>
<td>SCM understanding</td>
</tr>
<tr>
<td>Supply chain configuration</td>
<td>Supply chain strength &amp; planning</td>
</tr>
<tr>
<td>Supply chain relationships</td>
<td>Emotional relationships</td>
</tr>
<tr>
<td></td>
<td>Suppliers ‘in it from the heart’</td>
</tr>
<tr>
<td></td>
<td>Visit every factory before commencing business</td>
</tr>
<tr>
<td></td>
<td>Respect</td>
</tr>
<tr>
<td></td>
<td>Trust</td>
</tr>
<tr>
<td>Product</td>
<td>Desirability of products</td>
</tr>
<tr>
<td></td>
<td>Customers inform product development</td>
</tr>
<tr>
<td></td>
<td>Awards</td>
</tr>
<tr>
<td>Principles</td>
<td>Authenticity</td>
</tr>
<tr>
<td></td>
<td>Make a difference to farmers</td>
</tr>
<tr>
<td></td>
<td>No airfreight</td>
</tr>
<tr>
<td></td>
<td>No compromise on quality</td>
</tr>
<tr>
<td>Financial/Operational</td>
<td>Possible to run sustainable &amp; profitable ethical business</td>
</tr>
<tr>
<td></td>
<td>Profitability</td>
</tr>
<tr>
<td></td>
<td>Growth</td>
</tr>
<tr>
<td></td>
<td>Commerciality</td>
</tr>
<tr>
<td>Social responsibility</td>
<td>Local charity</td>
</tr>
<tr>
<td></td>
<td>Global charity</td>
</tr>
</tbody>
</table>

Table 39: Meta Themes within Firm I
Of the 4 case studies this firm applies the strongest focus on commerciality and growth, as highlighted in Table 39 and it has clear targets in place; ‘we are trying to grow 40% year on year. This is the maximum we can grow under our own steam and still maintain control’ (Owner). They have been profitable for 6 out of the 8 years they have been operating with only minor losses in the 2 other years. While they have strong environmental and social principles they recognise that most people that come across their products do not buy them because of sustainability, but because they like them and they are of good quality; ‘nobody will buy something ugly because it’s worthy, it has to be beautiful and if then it’s organic and ethical that’s a lovely feel good factor’ (Owner).

That said they recognise the importance of customer interaction in informing their morals as a company; ‘we desperately want to be the brand people want us to be. We want to be a reflection of what mums and dads want for their children so it makes sense that we consult them at every point’ (Owner). Their customers represent ‘different shades of green’ and they engage in 2-way communication with them and aim to respect all viewpoints and input. As part of this they recruit a group of high profile crusaders each year who share and actively communicate the firm’s principles. They will also contact customers when looking to introduce a new product to ensure that they are staying true to both the firm’s principles and meeting customer expectations of the brand; if there is a strong objection from customers on a proposed change then the firm will not implement it.

Of the studied firms it also applies the strongest, most stringent focus on SCM and recognises that it is a key factor in succeeding within the industry and achieving sustainability. The supply chain has evolved from 1 supplier in India with which they have a strong emotional connection to a network of suppliers across India, Portugal and Turkey. In recognition of the growing complexity they employ a dedicated supply chain manager in 2012 who visits and manages all factories and suppliers to ensure full transparency. This process is supported by a comprehensive traceability table, which shows the source and supplier of every component, process and product within the supply chain and goes above the established Soil Association
requirements. They also “want to make sure stuff is GOTS certified so we don’t compromise. If something is not GOTS certified it’s because of a technicality’ (Owner).

The firm strongly believes in partnerships and recognises the difficulties and delays in changing a supplier; ‘it’s really about having more respect for the factories because you need them as well. You’re not going to suddenly turn around and go somewhere else. The people that we manufacture with are absolutely in it from the heart’ (Owner). In line with the other case studies trust is considered absolutely key in their supplier relationships and if suppliers are open and honest when problems occur the firm will work closely with them to resolve the issues and progress forwards. Most of the partnership qualities valued by the firm come from face to face contact, so they rely heavily on regular visits to factories and suppliers to build strong relationships.

Like the other case studies the firm contributes time and money to charities that strongly align with their principles, particularly their environmental commitment. As a 1% for the Planet organisation they split donations between the Pesticide Action Network and the Growing Hope Project, and also donate separately to the Marine Strandings Network. With the firm’s continued growth they are in a position to establish a charitable trust and are involving all staff in identifying appropriate projects and initiatives that both align with the firm’s principles and those of the workforce.

**Cross Case Analysis**

A comprehensive pivot table (Appendix 13) was employed to enable comparison of key features of the 4 SMEs together with themes from the literature reviews and Phase 1 research findings. This enabled patterns to be identified across the case studies that could support or contrast with the primary research themes. The characteristics were derived from the reviewed literature and linked to relevant models; some were specific to SME size and structure, others related to supply chain management, supply chain relationships and practices.
and finally specific social aspects within SMEs. Patterns within these characteristics were identified from this process and contributed to a detailed comparison of the 4 cases.

A descriptive framework was then developed as a means to organise and present the case studies, and to allow cross case synthesis to identify similarities and differences between the cases (Yin, 2009). This process was informed by the Thematic Matrix (Miles and Huberman, 1994), which evolved from the Checklist Matrix used to identify within case themes. The Thematic Matrix (Appendix 14) categorised the within case meta themes and enabled dominant themes which applied to all cases to be identified and contributed to the axial coding stage. Together with the within case open coding this then informed the selective coding stage (Strauss and Corbin, 2008) from which core categories could be identified.

While the 3 structured coding procedures enable pattern matching and the identification of themes and categories, research findings, especially those derived from qualitative data should also tell a story (Schatzman, 1991); the development of the narrative or presentational account is part of the descriptive phase to transforming qualitative data (Wolcott, 1994). The Checklist Matrix enabled relevant key quotes to be identified and presented within each case study to bring the story of the firms ‘to life’. Qualitative data analysis should go beyond coding procedures and become an intuitive process for the researcher where questions are asked of the data (Strauss and Corbin, 2008); this was a continuous process that evolved through all stages of the within case and cross case analysis and enabled greater acquaintance with the data, so that the researcher was immersed in each case and became progressively focused (Wolcott, 1994).

Axial coding represents a more intense form of coding around categories and involves identifying the properties of the category, understanding conditions, interactions and consequences associated with the phenomenon referenced by the category and then relating this to other categories (Strauss, 1993). The use of a Thematic Matrix within this stage of the analysis enabled the within case themes to be categorised and sub-categorised and overlaps
between the categories identified. Coding is the pivotal operation for moving toward the discovery of core categories and yields the desired conceptual density (Strauss and Corbin, 2008).

The final stage of selective coding illustrated in Figure 19 is the process where subordinate and sub-categories are systematically linked with the core categories; any new and existing codes will all relate to the core categories (Strauss, 1993). Once genuine categories have been identified and clearly named any totally or relatively unrelated minor categories can be discarded. In presenting and interpreting the data following categorisation it is necessary to frequently reference specific data and relate it to specific conditions with specific interactions, strategies and consequences (Wolcott, 1994).

**Cross Case Themes**

Having identified a range of recurrent meta themes within each individual case the themes were grouped and categorised. This process allowed themes to be related to each other and aligned with themes from the literature reviews and mini case studies, as well as consolidation across the cases to reveal dominant themes. The resultant categories enabled systematic content analysis of the cases to quantify which of them received the greatest emphasis across the interviews, allowing for more in-depth analysis of the cases, and core categories to be identified. This allowed for structured comparison with the literature and application of the chosen theoretical lenses.

The within case themes were systematically reviewed and similar themes grouped together; the meta themes from the within case analysis were evaluated and reframed where appropriate to develop categories that captured the range of themes in the most meaningful context. Some of the within case themes were explicitly connected, such as profitability and growth, while others such as authenticity, trust and respect were open to interpretation and therefore applicable to more than one category of themes. This indicated that while individual categories could be developed there was strong interaction between them.
The review of each thematic group created 8 core categories of Business, Principles, Supply Chain, Social, Product, Practice, Employees and External Factors, as illustrated in Table 40; it was felt that these categories most fully encapsulated the groups of themes identified through the within case analysis and the richness of the primary research data. The categories demonstrated an alignment with the structure of the literature reviews, moving from broad sustainability themes to themes more specifically aligned with SSCM and supplier relationships and SME principles and practices.

<table>
<thead>
<tr>
<th>Business</th>
<th>Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home originated business</td>
<td>Continuous employment</td>
</tr>
<tr>
<td>Small margins</td>
<td>Prove can run a profitable green business</td>
</tr>
<tr>
<td>Continuous employment</td>
<td>Communication of principles</td>
</tr>
<tr>
<td>New industry</td>
<td>Ethical consumerism</td>
</tr>
<tr>
<td>Owner control</td>
<td>Team mentality</td>
</tr>
<tr>
<td>Self sufficiency</td>
<td>Dark green principles</td>
</tr>
<tr>
<td>Size constraints</td>
<td>Product, environment, people</td>
</tr>
<tr>
<td>Flexible &amp; adaptive</td>
<td>Authenticity</td>
</tr>
<tr>
<td>Commerciality</td>
<td>Innovation, adaptability, evolution</td>
</tr>
<tr>
<td>100% owner commitment</td>
<td>Integrity &amp; honesty</td>
</tr>
<tr>
<td>Longevity</td>
<td>Trust &amp; transparency</td>
</tr>
<tr>
<td>Awards</td>
<td>Respect</td>
</tr>
<tr>
<td>Preservation</td>
<td>Eco literacy</td>
</tr>
<tr>
<td>Profitability</td>
<td>Money not prime purpose when established</td>
</tr>
<tr>
<td>Growth targets</td>
<td>Prove it is possible to run a profitable, ethical business</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supply Chain</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certification</td>
<td>Fairness</td>
</tr>
<tr>
<td>Trust</td>
<td>Contribute to positive change</td>
</tr>
<tr>
<td>Personal relationships</td>
<td>Changing lives</td>
</tr>
<tr>
<td>Short supply chains</td>
<td>Products manufactured locally</td>
</tr>
<tr>
<td>Supply chain delays</td>
<td>Local community</td>
</tr>
<tr>
<td>Relaxed supplier relationships</td>
<td>Support like-minded small independents</td>
</tr>
<tr>
<td>Quality issues</td>
<td>Global community</td>
</tr>
<tr>
<td>Suppliers with similar ethos</td>
<td>Community focused</td>
</tr>
<tr>
<td>SCM understanding</td>
<td></td>
</tr>
<tr>
<td>Respect</td>
<td></td>
</tr>
<tr>
<td>European manufacturing</td>
<td></td>
</tr>
<tr>
<td>Supply chain strength &amp; planning</td>
<td></td>
</tr>
<tr>
<td>Product lifecycle</td>
<td></td>
</tr>
<tr>
<td>No compromise on quality</td>
<td></td>
</tr>
<tr>
<td>UK produced, processed &amp; manufactured</td>
<td>Visit every factory before commencing business</td>
</tr>
<tr>
<td>Closed loops</td>
<td></td>
</tr>
</tbody>
</table>

237
Local charity | Make a difference to farmers
Global charity | Emotional relationships
Textile brotherhood | Suppliers ‘in it from the heart’
Creation of new industry/supply chain

### Product
- Commerciality
- Authenticity
- Longevity
- Desirability
- Functionality
- No compromise on quality
- Lifecycle
- Awards
- Customer influence on product

### Practice
- Cost minimisation
- Resource maximisation
- Waste minimisation
- Extensive research
- High eco literacy
- No airfreight

### Employees
- 100% commitment
- Owner control of vision
- Team mentality

### External Factors
- No authoritative structure in India
- Changing prosperity in India
- Recession
- Cultural differences
- Increased price of cotton

Table 40: Cross-case Categorisation of Themes

The Business category evolved from the Financial/Operational meta theme of the within case findings in terms of financial and business performance, including industry recognition, but also incorporated SME characteristics related to size, ownership, resources, flexibility and business longevity. The category of Principles built on strong themes from both the SME literature review and Phase 1 research; all within case themes from the meta theme of Principles were included in this category, together with other themes such as trust and transparency, previously aligned with Supply Chain Relationships. This recognised the interaction between principles and supply chain relationships, and the Supply Chain category was used to capture all the within case meta themes related to supply chains, to include practices, certifications, configuration and relationships.

The social dimension was well represented across the 4 cases, as it had been in the SME literature, and introduced emergent themes that had not been explicitly identified in the
literature reviews, such as a sense of brotherhood, the support of like-minded businesses and strong emotional connections and commitments. Building on the within case meta theme of Social Sustainability, the cross case analysis developed an overarching Social category that more fully captured the different facets of the social dimension to include CSR and social capital related themes as well as commitments, practice and performance.

Practice was a key theme in the supply chain literature review in terms of environmental performance, but was more implicit within the case study themes in that interviewees focused more strongly on their environmental principles, rather than their specific supply chain activities. The category of Practice evolved from the Supply Chain Practice meta theme to also incorporate business related activities such as research, as well as the high eco literacy that contributed to environmental practices. The category of Product directly evolved from the within case meta theme to reflect all product-specific themes including commerciality, performance and consumer responses/inputs.

Finally a small number of themes were categorised under Employees and External Factors; the category of Employees was developed in order to reflect the human component of the SMEs, rather than incorporating it in the Business context and includes the extent of owner involvement and control, and the role and commitment of UK employees. External Factors recognises economic and industry-related conditions such as the recession, cultural differences and increased raw material prices that could impact firms’ operations and performance. This latter theme reflects how SMEs may assume they have no influence over external factors, perhaps due to their size and therefore tend to be reactive. As a result how they manage the business and more importantly their supply chain will influence how successfully they can respond.

**Business**

The cross case analysis revealed that all 4 case studies are home originated businesses; while the firms have subsequently moved into formal business premises all of them have a strong,
often emotional connection to where the business started; for Firm F the local Bristol community made the original connection with the Indian community and the business evolved from this, Firms B and I have made an explicit commitment to always be based in their specific area of Cornwall and Firm A recognises that its location is part of its brand identity as well as enabling it to be a key part of the local business network.

As indicated in the Case Study Pivot Table (Appendix 13) 3 of the 4 firms are owner-managed and the owners have extensive involvement in day-to-day operations, as well as strategic decision-making. Firm A has a form of hierarchy in place compared to the flat structures of Firms B and F, but Firm I as the largest employer is the only one that explicitly recognises the need for a formal hierarchy and reduced owner control. While the owners have been heavily involved since the business started, as it grows they are moving towards a more independently managed form, with employees given more autonomy; ‘I found... that I was becoming the limiting factor because I didn’t have a management structure. There may well come a time when I’m not the best person to direct the business on a day to day basis and we may get an MD in the future who is better than me’ (Owner, Firm I).

The acceptance by most of the firms and even suppliers to accept small profit margins aligns with the SSCM Balance theme derived from the literature reviews (Table 30) of a reduced emphasis on profit maximisation. Most of the firm owners acknowledge a need to achieve an acceptable level of profit to sustain and grow their businesses, i.e. profit-satisficing (Fitjar, 2011), but indicated they would prefer not to prioritise profit if it significantly compromised their principles and commitments. Firm F was profitable in the early years of its business, although recent economic and industry pressures have severely affected their profit and the owner was challenged by their accountant to source cheaper suppliers as a response; for the owner this would contradict their socially-motivated commitment to the Indian community.

Firm B encountered a similar situation during the study period, but in contrast to Firm F chose to review their supply chain to look at improving margins; they were only breaking even and
wanted to achieve profitability more quickly. This involved sourcing more cost effective suppliers and making product specification changes to achieve specific price points and increase product margin. However there were negative impacts as a result of these changes and in subsequent interviews the owner admitted it was an inappropriate course of action as they had encountered quality issues that threatened the integrity of the brand.

‘I think previously we were all about quality and then the financial pressures put the focus more on margins and that has now lead us back to being more about quality…. We had the brand and the product and the commerciality behind the brand and the product and we’ve still got that, but are going back to the brand as how it started’ (Owner, Firm B).

This, albeit short-term focus on economic performance, highlights how a bias towards this dimension can compromise a firm’s specific principles and commitments, and environmental and social performance, and it emphasises the need for a long-term perspective to sustain a business into the future. It illustrates the strong role owner-manager principles can play in achieving sustainability in SMEs, but the experience of Firm F indicates that some principles may be ultimately too extreme or rigid, and that too strong an emphasis on any of the 3 dimensions, not just economic, can cause an imbalance in SSCM performance.

Firm I has seen strong profitability in most years, with only minor losses in 2 years and in contrast to the other 3 firms has clear growth targets. Together with Firm B, Firm I is very conscious of the need to be commercial, which they align with their plans for growth, and both firms have dedicated designers and technicians to develop their product aesthetic and performance. In contrast the owners drive the design and development of the other 2 firms; they source and manufacture products that align specifically with their own design ideas or principles.

An emergent theme from the within case analysis was of firms developing new supply chains and industry as a result of specific sustainability principles. Firm F’s desire to keep its supply chain local and in its control lead to collaboration with a Devon-based farmer to reintroduce a sheep that could produce Merino quality wool. This theme aligned with another emerging theme of preservation and posterity; by establishing or maintaining a local supply chain
industry skills could be preserved or developed in new directions. It also implies recognition that outsourcing of production has potentially eroded the UK textile industry and firms can reverse this trend through a commitment to local business and community; ‘Our socks cost the same to be made over here as they do in China, because of the expertise and the machinery aspect’ (Owner, Firm B).

Principles

Owner-manager principles were a strong theme both within the reviewed SME literature and across the studied firms, and in all cases profit maximisation was not the prime purpose when the firms were established. All of the businesses evolved out of personal ideas, ideals or experience; for Firm F VSO experience and community links inspired the business, while for Firm B it was strong environmental awareness through a passion for surfing. The owner of Firm A had worked for many years in the financial industry, but had become involved in development projects, which inspired him to run an ethical and environmentally responsible business, and for Firm I the business evolved from a need for a product that the market did not provide and personal ethics around nature and the environment.

3 of the 4 firms were originated specifically around environmental principles. The review of the sustainability literature produced a Sustainability Spectrum that reflects different strengths, from weak economic-focused to strong eco-centric. The case study analysis introduced the theme of different shades of green principles, rather than a single environmental position; this contrasted with the dominant weak approach to sustainability in the literature and indicated that strengths of sustainability are more explicit and nuanced than suggested in literature. ‘We started by saying we want to be dark green and supply dark green products, but we know that our market will be different shades of green’ (Owner, Firm A) and ‘our customers are varying shades of green’ (Owner, Firm I).

All firms recognised the importance of communicating their sustainability principles to stakeholders including staff, suppliers and customers, and it represented a key facet of each
firms’ brand identity. The different strengths and shades of sustainability principles were echoed in this sub-theme, with both Firms A and I explicitly having ‘light green’ and ‘dark green’ customers; for Firm I this is even included in their marketing. Suppliers and employees, while having a strong understanding of owner principles were also engaged with these principles, with some specifically working for firms because of alignment of principles; ‘a lot of the beliefs that are held by the company are beliefs that I hold myself’ (Operations Manager, Firm I).

An emerging theme around owner-manager principles was a desire to prove it is possible to run a profitable green or ethical business, suggesting the firms recognise the need to balance environmental and social commitments with financial performance. Carter and Rogers’ (2008) SSCM model implies that sustainability exists at the intersection of the 3 dimensions i.e. is achieved when a balance of all 3 is achieved, but the current SSCM literature suggests that the model skews towards the economic dimension and profit at the expense of environmental and social performance. The desire to balance People, Profit and Planet (Pullman et al., 2009) also aligned with the paternalistic theme of firms making a positive difference to both the planet and the people internal and external to their supply chains; ‘my intention is to make a difference to the farmers so there are as many as possible growing organic cotton’ (Owner, Firm 4).

A key emerging theme not reflected in the literature was authenticity in terms of the firm, its principles and its products, so that stakeholders who engage with the business are confident and trustful in the brand; ‘we’ll bring 3 products together and make an organic pillow here on site and that just feels for us more authentic... than to just buy an organic wool pillow off the shelf from another company and then stamp our logo on it’ (Owner, Firm A). This suggests that authenticity is a potential gap in current sustainability business practice; consumers and stakeholders are actively challenging the sustainability actions of firms, and want evidence and assurances of responsible, genuine behaviours. Mindfulness and thoughtfulness align with the theme of authenticity with firms making informed, considered decisions around product and
practice to ensure confidence and trust in their brand. It suggests a deep, nuanced engagement with sustainability that extends beyond established business strategies and decision-making practices.

**Supply Chain**

Addressing sustainability through the development of shorter and local supply chains was a stronger theme than acknowledged in the literature. This desire to bring supply chains ‘closer to home’ aligns with sustainability principles in terms of minimising environmental impact, but could also represent a response to the outsourcing trend that currently dominates the clothing industry. As a result it connects with the idea of preservation and posterity by ensuring UK skills and expertise are retained, maintained and promoted, and can produce new supply chains and industries. It reflects a commitment by the studied firms to engage and commit to their local communities, echoing a paternalistic theme across the cases, but could also be a practical response to the realisation that managing long, global supply chains is difficult.

The studied firms employed 3 key industry certifications, namely GOTS, Fairtrade and Soil Association, with Firm A’s owner heavily involved in the development of the GOTS standards. Certification was used to assure customers of the authenticity of social and environmental commitments more than a means to monitor suppliers. Some firms felt that certification was therefore a brand necessity and had a role to play in the implementation of SSCM, however this was balanced with a strong recognition that true sustainability goes beyond ticking boxes and certification alone does not fully reflect a firm’s sustainability commitments, principles and activities.

‘We have to pay for the [Fairtrade] labelling and to get the labelling we have to get all the subcontractors checked all the time, so there is a big cost to us and it’s not without its difficulties’.
(Merchandiser, Firm F)

‘We are GOTS certified and use Control Union because there isn’t anything else. It is particularly important to dark green customers. We get a transactional certificate for our clothing so everything is investigated... we don’t rely on the transactional certificate and assume that it’s all alright because we can see through experience how easily the wool can be pulled over your eyes.’
(Owner, Firm I)
‘We’ve just become Soil Association approved as a brand which we didn’t want to do but have been forced to do... We have a big traceability table now for every single thing and it is way over and above what the Soil Association does’
(Owner, Firm I)

This recognition extended to how firms established and developed supplier relationships; while certification and adherence to standards were relevant selection criteria it was just as important that suppliers could understand and share a firm’s vision and principles and be committed to a long-term relationship. This further emphasised the importance of trust, respect and loyalty, which the cases indicated would contribute to relaxed and personal supplier relationships; sharing visions, sustainability commitments and the journey towards these goals could mean that ‘suppliers were in it from the heart’ (Owner, Firm I).

The characteristics of the firms’ supplier relationships and the principles communicated through the supply chain contributed to a key emerging theme, namely emotion, echoed in the above quote. As well as strong, often personal relationships with suppliers the cases suggested that these connections had a strong emotional component that went beyond standard business and economic performance to a deep bond and engagement with firm principles. There was a sense that many of those engaged in the supply chain felt they were making a positive contribution and would also benefit from these committed relationships.

This theme crossed the categories and was an explicit theme within the Social category, as well as implicit to the Principles category.

**Social**

The Social category was more fully developed across the cases and incorporated different aspects to the reviewed literature. The social sustainability role of charity and community engagement, both local and global highlighted in the literature were echoed in the findings. Despite lower profit margins and turnover charity is an integral part of all 4 studied firms with firms contributing to charities that most strongly align with their principles, or as in the case of Firm I their employees’ interests and principles. All firms recognised the impact they have on
both local and global communities; there was a strong desire amongst the firms to contribute locally, but also a clear awareness that we are all part of the same global community.

The findings strongly emphasised the human and emotional aspects of sustainability, highlighted within the Supply Chain category and interviewee responses were frequently framed around emotions and feelings, for example the desire to make a difference. There was repeated reference across the cases to emotional and personal connections with suppliers, rather than purely business-like or transactional relationships. While the literature recognises the importance of long-term, mutually beneficial relationships for achieving SSCM this deeply emotional aspect of relationships is currently underexplored.

This strong human element was more deep rooted in the findings and underpins many of the other case study themes, in particular the themes of Principles and Practice. There is a sense that the studied SMEs transcend traditional business approaches because of their emotional commitment and involvement, which in turn permeates into a supply chain where suppliers are ‘in it from the heart’ (Owner, Firm I), businesses and suppliers are part of a textile brotherhood, and sustainability practices are implemented because it is ‘the right thing to do’ (Owner, Firm A).

This human, emotional theme extends into the firms’ often-evangelical commitment to changing lives and making a positive change, again a more explicit theme than in the literature. Firms were committed to making a difference to the most disadvantaged suppliers, which translated into the choice of responsible raw materials. This is not just because it is an ‘easy to green’ practice, as indicated in the literature, but is a stage where producers and the environment can be particularly exploited. However this personal involvement with suppliers extends to other supply chain stages and was reflected in on-going support, even to under performing suppliers as firms recognise that abandoning them does not represent a long-term or responsible solution; ‘I’m all in favour of working with suppliers to green them. That’s what we have to do. We have to change behaviour on all levels’.
Product

Lifecycle responsibility was a theme reflected in the literature and Phase 1 research, and all 4 firms recognised that their responsibility extended beyond firm boundaries and aimed to address sustainability throughout the supply chain, and where possible beyond. Firm B was the only one to explicitly build the customer into the lifecycle process, providing the opportunity to return products for repair and recycling; however while the other firms did not provide similar services their loyal customer base allows communication, assurances of brand authenticity and product feedback.

The issue of product longevity, which evolves from a lifecycle responsibility is less explicitly discussed in the literature, but is a key focus of both Firms B and I and an inherent characteristic of the well-made products of Firm F. It is considered an environmentally responsible characteristic, and while Firm F appreciates the positive benefit of the product longevity it achieves is equally mindful that it limits repeat sales as customers keep their products for longer; this in turn affects the amount of work they can guarantee their tailors, which they consider their key responsibility and highlights the direct impact that environmental performance can have on social commitments.

Firms B and I however consider their product longevity to be a key selling point that aligns strongly with their personal commitment to the environment, but also to economic performance. The high cost and performance of Firm B’s products mean that being ‘built to last’ is a customer expectation, supported by the repair service; Firm I recognises that its customers i.e. babies and children will quickly grow out of their products, but the quality and longevity ensures and encourage on-going reuse, a principle that aligns particularly with their ‘dark green’ customers.

Practice

In contrast to the literature there was a high level of eco literacy amongst all of the case study firms, even if it did not represent their key priority, and the firms recognised the interconnectivity between environmental performance and social impact. Firms A and B
particularly evidenced extensive research into all aspects of environmental practice before making a decision on materials, processes or products; the founder of Firm A was so eco-literate that he was a key contributor to the GOTS standard implemented by the other firms.

While there was still an emphasis on raw materials amongst the studied firms, there was a sense that firms applied more of an embedded philosophy than an explicit choice of specific practices, going beyond ‘easy to green’ processes (Preuss, 2005a, Vachon and Klassen, 2006a, Ashby et al., 2012). The firms exhibited a desire to know the supply chain and their products in detail, and to be able to answer any questions from customers, especially those with very strong sustainability principles.

The practices of cost and waste minimisation, and resource maximisation was implicit in all of the firms, and reflected a need for SMEs to be efficient and effective with the resources available, as well as aligning with good environmental practice. Firm I for example designs for maximum use of its materials and components; the designers and garment technicians liaise closely with all factories to understand what materials are available each season, so that any waste or surplus can be incorporated into the design process; ‘if we’ve got fabric left over from previous seasons we try to use it up, so we always ask the factory to keep us up to date on what fabric they’ve got in their stockroom’ (Designer, Firm I).

**Employees**

While this category was less well developed in the cross case analysis it was relevant in reiterating the role of shared values and principles within the UK operation for each firm. There was a tendency for the firms to attract employees who are like-minded in their approach and understanding of sustainability; ‘I read about [FIRM] and thought it offers an extra element to my job, a satisfaction that you are progressing in working in a more ethical and sustainable way’ (Designer, Firm I), and while not a condition of employment it was important to each firm that employees could understand and communicate their principles.
This contributed to a strong team mentality across all of the firms and while defined roles exist in each there is an implicit understanding that all employees contribute and help out as necessary; employees exhibited a good understanding of how their involvement and commitment made a positive contribution to both the firm and its suppliers. Firm I represented the most structured and potentially hierarchical of the cases and is working towards a management structure that will give individuals more decision-making authority; Firm F in contrast was the least structured, but the founder is in firm control of the design function and decision-making.

**External factors**

As previously highlighted Firm F was most affected by external factors and experienced the greatest negative financial impact of the recession, while Firm A acknowledged that the recession and increased cost in cotton had reduced their profitability, but confirmed that they could manage the situation. The literature suggests that the smaller size of SMEs offers more flexibility and adaptability to economic and market changes, and this was reflected to a certain extent in the cases. Firm owners have good visibility of all aspects of the business and are more ‘hands on’, which enables quick decisions around acceptable profit margins. Working with smaller suppliers also reduces the chance of larger firm orders being prioritised in difficult economic conditions. However some external factors are out of a firm’s control, for example the government closed all dye houses in Tirupur, India’s dyeing centre, due to environmental contamination.

Firm A echoed some of Firm F’s experiences with India in terms of working practices, management structures and particularly workforce availability; ‘the biggest problems our suppliers in India are having is availability of good workforce’ (Owner, Firm I). Changes in prosperity in countries such as India and China also reflect increases in labour cost that together with global supply chain issues makes UK/European production increasingly viable; ‘even though prices may be higher [in the UK] because by the time you factor in your mistakes
it’s cheaper to bring it back home. There’s also the story to the customer – UK manufactured, UK sourced etc.’ (Firm B Supplier).

Summary of Case Study Themes

There was strong alignment with many of the literature themes, both within and cross case, and this included the recognition of different dimensions and strengths of sustainability. Environmental practice, product lifecycles and closed loops, and the use of certification were all well represented across the cases, but in contrast to the literature there was limited reference to the purchasing function. All firms emphasised the key issues of trust, commitment and collaboration within supply chain relationships. Owner-manager principles represented a key theme and strongly informed the firms’ approaches to sustainability. All firms also reflected the importance of community and charity, both global and local, a strong theme in the SME literature. In contrast to the literature most firm owners exhibited high levels of eco-literacy.

The cross case analysis formalised a number of emergent themes not currently reflected in the literature, as well as progressing some of the aligned themes in new directions. The idea of trust and respect permeated the 4 cases and built on the theme of trust highlighted in the literature as a key component for supply chain management and a facet of owner-manager principles. The findings showed that trust also related to how the business and its brand and products are perceived by customers and other key stakeholders. Firms B and I both referred to building trust in their brand; ‘We hope that our honesty comes out in our marketing and people will learn to trust that’ (Owner, Firm B) and Firm I expressed the idea that they as owners and employees are ‘holding trust for the company’.

In the studied firms trust extended to incorporate respect, which applied primarily to suppliers, but also to stakeholders that interact with the business including customers, employees and local communities. Where it was applied to suppliers respect aligned with the reviewed supply chain literature in terms of long-term commitment, but also with the social
capital concept of reciprocity. Through respectful relationships strong, mutually beneficial supply chains can be developed and maintained; ‘it’s really about having more respect for the factories because you need them as well. You’re not going to suddenly turn around and go somewhere else.’ (Designer, Firm I).

The findings also introduced the theme of authenticity; it was an unexpected theme that crossed the identified categories and was a key consideration for Firms A and I in particular. Building on the role of trust it was deemed highly important that the principles on which a business was founded were honestly reflected in all aspects of that business, from the product characteristics, the supply chain practices and relationships to the customer interaction with the brand. For Firm I this extended to significant interaction with all ‘shades of green’ customer, especially when considering new product development; the firm looks to their customers and employees to guide them and ensure their principles are not compromised or diluted.

An emerging theme related to authenticity was that of mindfulness in terms of making a connection with a firm’s principles, practices and product. It implies a greater level of engagement from employees, suppliers and customers, and that thought goes into all aspects of the business and its interactions. ‘They [SUPPLIERS] tick 90% of the same boxes as we tick on mindfulness and thoughtfulness around the product origins and production processes and finishings’ (Owner, Firm A). While it is a theme that easily aligns with owner-manager principles it extends to all stakeholders that interact with the firm.

Building on the idea of engagement there was a strong underlying theme of emotion and human-focused practice and principles across the cases; here the engagement was deep and nuanced with a strong sense of passion. It related to the highly personal relationships that firms had with their suppliers, suppliers that are in ‘from the heart’, but also the beliefs and values shared with suppliers, employees and customers.

‘Doing the right thing by everybody’
(Finance Manager, Firm I)
‘We’re not just buying the cotton we’re actually helping farmers grow the cotton and we like to get involved in social awareness projects. We have suppliers who are dealing with and recruit workforces such as misplaced women and women who have drug or prostitution issues and we’ve got products that recruit those kinds of people’
(Owner, Firm I)

This strong ‘human’ engagement with sustainability was reflected in the further theme of firms making a difference and changing lives, no matter how small that change might be perceived.

The founder of Firm A wanted to make a positive change when the business was established and for Firms F and I it represented a core belief on which their businesses were established.

‘Even if it is only 1% of the total cotton market it’s still making a change to hundreds of thousands of farmers, you’ve made a change to their lives’
(Owner, Firm F)

‘My intention is to make a difference to the farmers so there are as many farmers as possible growing organic cotton’
(Owner, Firm I)

2 themes emerged from the findings that were specific to supply chains, but less represented in the SSCM literature, namely the creation of new supply chains and potentially new industry, and the commitment to and development of ‘local’ supply chains. Firm B combined both these themes in its development of a UK-based source of Merino quality wool; ‘we’re effectively starting a new industry in the UK and a new supply chain’ (Design Manager, Firm B). The fact this project is within the same region as the firm aligns strongly with their commitment to bringing their current global supply chain closer to home; ‘We’re always looking to bring things back to the UK and keep it more local, more transparent, natural fibres, that’s all part of the reason why it started’ (Owner, Firm B).

Firm A recognises that the nature of their raw materials means that they will come from all over the world, but they actively aim to source as locally as possible and currently have 30% of their production within the local region. Both Firms F and I have established commitments to suppliers based in India, but with Firm I’s commitment to growing transparency and partnership it is developing a supply chain that is new and extends these principles to local involvement, with long-term goals to have more local production to complement its Indian operations.
**Category Analysis**

In order to understand which of the categories established through the case analyses were the most dominant a further analytical process was undertaken, as illustrated in Figure 19; this enabled the wealth of data acquired through the case study process to be further reduced and focused. Content analysis was employed on the 8 identified categories and the 8 emergent themes presented in Table 41; content analysis records the occurrence of a specific theme or category across a data set, which in this research were the 4 case studies (Miles and Huberman, 1994).

<table>
<thead>
<tr>
<th>Categories</th>
<th>Emerging Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>Trust and respect</td>
</tr>
<tr>
<td>Principles</td>
<td>Authenticity</td>
</tr>
<tr>
<td>Supply Chain</td>
<td>Mindfulness</td>
</tr>
<tr>
<td>Social</td>
<td>Emotion/human</td>
</tr>
<tr>
<td>Product</td>
<td>Making a difference/changing lives</td>
</tr>
<tr>
<td>Practice</td>
<td>New supply chains/industry</td>
</tr>
<tr>
<td>Employees</td>
<td>Local supply chains</td>
</tr>
<tr>
<td>External</td>
<td>Preservation and posterity</td>
</tr>
</tbody>
</table>

*Table 41: Categories and Emergent Themes identified through Case Study Analyses*

Each category and theme was assigned a code and all the transcripts were analysed at case level to allow for visibility of the importance of specific categories and themes to each individual SME, as well as across the cases as a whole – see Appendix 15. This Category Analysis process enabled the core categories and core emerging themes to be identified to allow further development and analysis against the reviewed literature and research findings. There were 4 clear dominant categories and also 4 dominant emerging themes, although for the latter there was 1 specific theme that occurred more significantly than the remaining 3 themes.

**Core Categories**

The themes that were identified from the cross case thematic analysis were categorised under the 8 headings illustrated in Table 41, and these formed the basis of the category analysis.

Each transcript was analysed and occurrences of the 8 categories logged for each SME; this in turn produced a total of occurrences for each category. Figure 25 illustrates these occurrences
and highlights how the first 4 categories were more heavily represented across the case studies.

Figure 25: Occurrences of Categories

The most prevalent category was Principles with a total of 167 occurrences followed by Supply Chain with 162 occurrences. In contrast the 4 categories of Product, Practice, Employees and External were less well represented with Employees the least represented at just 3 occurrences. The Principles category incorporated 20 cross case themes, as illustrated in Table 41, and each SME applied its own distinct set of principles and values. While a small number of themes within this category were measurable, such as quality and the use of airfreight, the majority were intangible in their nature, but core to how the owner-managers ran their business.

The Supply Chain category was more intangible in contrast to the current focus on quantifiable aspects of SSCM (Burgess et al., 2006), despite the recognition of the importance of supplier relationships (Vachon and Klassen, 2006b). Some aspects were measurable such as certification, while others highlighted supply chain issues such as quality and delays. The dominant response across the cases was the understanding, building and evolving of the supply chain through respectful, trust-based and committed supplier relationships; through this approach issues such as delays could be resolved. The studied firms used certification
more as a means to assure customers of responsible supply chain behaviour, rather than to monitor and manage suppliers.

<table>
<thead>
<tr>
<th>Occurrence within firm</th>
<th>Firm F</th>
<th>Firm B</th>
<th>Firm A</th>
<th>Firm I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>37</td>
<td>16</td>
<td>33</td>
<td>43</td>
</tr>
<tr>
<td>Principles</td>
<td>14</td>
<td>31</td>
<td>68</td>
<td>54</td>
</tr>
<tr>
<td>Supply Chain</td>
<td>29</td>
<td>17</td>
<td>46</td>
<td>70</td>
</tr>
<tr>
<td>Social</td>
<td>38</td>
<td>1</td>
<td>39</td>
<td>55</td>
</tr>
<tr>
<td>Product</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Practice</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Employees</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>External</td>
<td>12</td>
<td>3</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>136</strong></td>
<td><strong>74</strong></td>
<td><strong>196</strong></td>
<td><strong>242</strong></td>
</tr>
</tbody>
</table>

*Figure 26: Occurrence of Categories in Studied Firms*

Each of the analysed categories had different levels of frequency for each SME as illustrated in Figure 26. The category of Principles had the highest number of occurrences for Firm A, while the supply chain category was highest for Firm I; for the latter this strongly reflects their growing focus on managing their supply chain effectively and the recognition of the impacts of a poorly managed and coordinated supply. Of the studied firms Firm I exhibits a good balance across all 4 of the highest occurring categories, while Firm B is the least balanced; however this may be reflective of the smaller quantity of data that was acquired from this case due to more limited availability of interviewees.

**Core Emerging Themes**

As well as establishing 8 categories that formalised the cross case themes, the data analysis process identified 8 key emerging themes i.e. themes that had not explicitly appeared in the reviewed literature or Phase 1 research findings. While they were assignable to specific categories it was acknowledged that these emerging themes spanned certain boundaries and offer the potential to provide insight to understanding sustainability within the SME supply chain context; therefore the same content analysis process was undertaken with the emerging themes and the results are presented in Figure 27. Again there were 4 themes that were well represented across the cases, namely Authenticity, Emotion/Human, Local Supply Chains and Making a Difference/Changing Lives. In contrast to
the category content analysis however there was 1 theme that had significantly more occurrences than the others; the theme of emotion and human-centred principles and approaches occurred 53 times and was represented in all 4 case studies.

![Figure 27: Occurrences of Emerging Themes](image)

The theme of Emotion captured a range of passionate, potentially evangelical, and often very personal responses by both owners and employees to the issues of sustainability in business and aligned strongly with the core category of Principles. It is a largely intangible theme that relates to connection and engagement with the very human elements of sustainability, rather than ‘hard’ practices and processes (Burgess et al., 2006). It relates to personal and also shared principles and values, within the business and along the supply chain, and explicitly recognises the people (social) dimension of the People, Profit, Planet framing of the 3 sustainability dimensions (Pullman et al., 2009), but in a nuanced way that goes beyond a recognition of social issues and codes of conducts to a genuine sense of caring, sharing and ‘doing the right thing’.

The theme of Authenticity was the second most prevalent and is boundary spanning as it relates to owner-manager principles, sustainability practice, product and brand, as well as meaningful supplier relationships. It can be seen as an important theme in the business and
operational context of sustainability due to the recognised issues with greenwashing (Moon, 2007) and focus on ‘easy to green’ processes highlighted in the literature (Preuss, 2005a, Vachon and Klassen, 2006a, Ashby et al., 2012), as well as the need to embed sustainability principles throughout the supply chain. It therefore provides a strong connecting thread between principles, emotion and relationships, practices and product, and indicates a mechanism for understanding and aligning both the tangible and intangible aspects of sustainability within supply chains.

<table>
<thead>
<tr>
<th>Occurrence within firm</th>
<th>Firm F</th>
<th>Firm B</th>
<th>Firm A</th>
<th>Firm I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust &amp; respect</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Authenticity</td>
<td>2</td>
<td>2</td>
<td>14</td>
<td>21</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Emotion/human</td>
<td>7</td>
<td>15</td>
<td>7</td>
<td>24</td>
</tr>
<tr>
<td>Local supply chains</td>
<td>1</td>
<td>11</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>New supply chains/industry</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Making a difference/changing lives</td>
<td>2</td>
<td>5</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Preservation &amp; posterity</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

|                  | 12 | 37 | 47 | 67 |

Figure 28: Occurrence of Emerging Themes in Studied Firms

As illustrated in Figure 28, of the studied firms Firm I exhibited the highest occurrence of the themes of Emotion and Authenticity, and of all of the emerging themes as a whole. Interestingly while this indicates that this firm is the most strongly aligned with the more intangible aspects of sustainability, it is also the largest by employee numbers, most successful by turnover and profits, and most business-like of the studied firms. Emotion was the most important emerging theme for 3 of the 4 firms, and the theme of local supply chains was of greatest relevance to Firms A and B. The themes of creating new supply chains and industry, and preservation and posterity were the least featured and particular to Firm B; this is representative of its specific principles and commitment to the local community and UK production, and is further reflected in the principles of the supplier with which they partnered to develop a local source of Merino wool.
Conclusion

All of the core categories have relevance in the context of SSCM; Business aligns with economic performance through the associated themes of profitability, commerciality and margins, while the External Factors category indicates some of the issues faced within a firm’s supply chain and industry. Principles drive each firm’s approach to the 3 SSCM performance dimensions, the Supply Chain category captures the management of supply chain activities and supplier relationships, with the Product and Practice categories providing detail on how environmental principles align with these specific aspects of the supply chain. The Social category encapsulates a range of themes related to social performance within the supply chain and both local and global communities, while Employees provides a within-firm view of owner and employee involvement and interaction.

The emerging themes relate to the core categories, but provide a richer, more nuanced view of specific aspects of SSCM; supply chains are explicitly recognised in 2 of the themes, with the commitment to local supply chains an underexplored dimension in current sustainability literature. The other themes reflect less tangible dimensions of SSCM, and are strongly aligned with the categories of Principles and Social, and relationship aspects of Supply Chain. None of the emerging themes explicitly relate to economic performance, and while environmental performance is implicit to some of the themes, it is the social performance dimension of SSCM that is most fully represented.

The social dimension is underdeveloped in relation to the economic and environmental dimensions in the current sustainability and supply chain literature, which represents a key gap in understanding how to operationalise sustainability and reflects a skew towards economic performance in SSCM. The review of SME literature indicates that the concept of social responsibility is more established amongst SMEs and is often more implicit and embedded as something that the firm just does, rather than being addressed as a separate performance dimension. It aligns strongly with owner-manager principles and the reduced focus on profit maximisation, a recognised characteristic of SMEs.
The primary research findings have aligned strongly with the SME literature concepts of social responsibility and principles, and the emergent themes suggest there are facets of these 2 core categories that could be further developed to provide a richer understanding of how SMEs address sustainability performance in their supply chains. The studied SMEs tend to manage their supply chains on an informal basis, relying on well-established, often personal relationships which are informed and to some extent controlled by strong, and sometimes evangelical, owner-manager principles. These principles make environmental and particularly social performance an embedded part of organisational decision-making, and not as an add-on to economic performance.

The dominant emergent theme of Emotion/Human could significantly evolve the social dimension through the social capital lens, while Authenticity has strong relevance to SME principles, processes and products, and may enable this core category to be more explicitly applied to sustainability and SSCM frameworks. The findings have also emphasised the more tacit and intangible characteristics of sustainability practice, which offers the opportunity to move from the hard, quantifiable aspects (Burgess et al., 2006) dominant in current SSCM literature to a framework that more fully addresses all 3 sustainability dimensions in supply chain performance.
Chapter 11: Discussion of Research Findings

Introduction

This thesis has reviewed the extant sustainability literature with a focus on SSCM and its application in the SME context, and then undertaken a multi phase case study research approach to understand how the principles and concepts discussed in the literature are applied in supply chain practice. Within case and cross case analysis has produced a number of key categories and emergent themes, which offer the potential for an enhanced view of SSCM in the SME context. This chapter discusses the research findings in relation to the research questions and the reviewed literature, and evaluates them against existing sustainability and SSCM models.

Alignment with Existing Literature

The following sections compare and contrast the 4 case studies and the research findings against the reviewed literature and sustainability frameworks developed in chapters 3, 4 and 5, and identify key areas of alignment, key differences and new aspects. Where appropriate the cases are positioned against relevant reviewed models and frameworks to understand the applicability of current sustainability and SSCM concepts to SME supply chain practice.

Sustainability

The sustainability literature recognises the 3 key dimensions of Economic, Environmental and Social and that different strengths of sustainability reflect the extent to which the sustainability dimensions are addressed, from weak, technocentric approaches which emphasise economic growth and the meeting of wants, to strong ecocentric approaches which prioritise the environment. The different academic viewpoints on sustainability strengths were consolidated into a single spectrum in Figure 2, Chapter 3; Figure 29 positions the 4 case studies on this spectrum, reflecting each firm’s individual approach to sustainability. This provides insight into how SMEs define/interpret sustainability, the first of the research
questions presented in Table 17 in the Methodology chapter; the sub question asked whether SMEs recognise the 3 sustainability dimensions, and the findings indicate that all of the studied firms are aware of them, but apply different levels of priority to each, which in turn results in different ‘strengths’ of sustainability.

As a result of these different priorities 2 of the studied SMEs were positioned towards the strong end of the sustainability spectrum since they apply very environmentally focused principles. Firm I established its business around environmental principles and practice, but its continued commitment to its suppliers and growing involvement with socially motivated activities positions it between ecocentrism and sustaincentrism, while Firm F was expressly established to support and develop a specific community, making social responsibility its primary focus and consequently it is positioned in the centre of the spectrum.

The positions of the 4 SMEs on the spectrum contrast the literature, which considers that most businesses apply a weak form of sustainability (Lamberton, 2005) with an emphasis on financial performance and quick wins through easy to green processes (Preuss, 2005a, Vachon and Klassen, 2006a, Ashby et al., 2012). Most firms are currently considered to be at the security level (Seager, 2008) i.e. focusing on business longevity, where greening has largely been at an operational level and focused on short-term cost savings. The current bias towards the economic dimension highlights a need for more holistic approaches not based on a capitalist Western economic paradigm (Banerjee, 2010). It is a feature of SMEs that profit is typically not the key initial driver for establishing a business (Simpson et al., 2011), with many pursuing profit-satisficing strategies that just enable them to stay in business (Fitjar, 2011). In addition the studied SMEs all apply a stronger importance to their environmental and/or social performance, suggesting that a more holistic approach is achievable.
### Sustainability Strength

#### WEAK SUSTAINABILITY
(Neoclassical economics)

- Utility is non-declining over time
- Substituting 1 form of capital for another

(Nilsen, 2010)

<table>
<thead>
<tr>
<th>Firm F</th>
<th>Firm I</th>
<th>Firm A</th>
<th>Firm B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technocentrism</td>
<td>Sustaincentrism</td>
<td>Ecocentrism</td>
<td></td>
</tr>
<tr>
<td>Right to master natural creation for human benefit</td>
<td>Economic &amp; human activities inextricably linked with natural systems</td>
<td>Non-human nature should only be used to satisfy vital needs of sustenance</td>
<td></td>
</tr>
<tr>
<td>Physical or human capital can substitute natural capital. Technology provides the means</td>
<td>Natural capital needs to be maintained</td>
<td>Technology not the answer, but some substitution possible</td>
<td></td>
</tr>
</tbody>
</table>

(Gladwin et al., 1995)

#### STRONG SUSTAINABILITY
(Ecological Economics)

- Economy & nature complementary & should **both** be sustained

<table>
<thead>
<tr>
<th>Firm F</th>
<th>Firm I</th>
<th>Firm A</th>
<th>Firm B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status Quo</td>
<td>Reform</td>
<td>Transformation</td>
<td></td>
</tr>
<tr>
<td>Need for change acknowledged but economic growth is the solution. No major environmental or social problems</td>
<td>Acceptance of problems but belief that shifts in policy &amp; lifestyle can be achieved over time &amp; within present social &amp; economic structures.</td>
<td>Social &amp; environmental problems rooted in existing economic structures. Strong commitment to social equity &amp; justice</td>
<td></td>
</tr>
</tbody>
</table>

(Hopwood et al., 2005)

#### Political Reality

- Capitalist economy dominates environment & society

(Giddings et al., 2002)

#### Material Reality

- Economy dependent on society & environment

#### Rationalism

- Society = sum of individuals
- Greatest utility for greatest number – desires not needs
- Goal is maximum economic efficiency

(Sillanpaa, 1998)

#### Communitarianism

- Utility should not just apply at individual level.

- **All** must partake, not just greatest number

#### Ecocentrism

- Everything on planet interconnected & interdependent
- Humanity dependent upon natural systems

Figure 29: Case Studies’ positions on Sustainability Spectrum
The definitional uncertainty around sustainability reflected in the literature review does not seem to present a barrier to practice within the studied SMEs; in response to the first research question all owners applied their own definition and understanding of sustainability, which was significantly informed by personal values and principles. This translated into specific practices, but their priority was developing and managing a supply chain that did not compromise these principles and understanding, even if that was at the expense of profit, as illustrated by Firm F. These strong principles and profit-satisficing strategies (Fitjar, 2011) address the current skew towards economic performance identified in the literature, and move towards stronger forms of sustainability; the different strengths on the Sustainability Spectrum reflect the 3 performance dimensions of the SSCM framework, but do suggest a prioritisation of 1 dimension rather than the balanced interaction between dimensions, which the framework implies is needed to achieve true or ‘best’ sustainability.

**Sustainable Supply Chain Management**

SSCM explicitly incorporates environmental and social performance alongside the more established, traditional measure of economic performance; Carter and Rogers (2008) developed this concept into an enhanced framework, which built on the 3 ring sector view of sustainability (Giddings et al., 2002). The model represents the Triple Bottom Line (3BL) concept of measuring the 3 sustainability dimensions applied to the operational context of supply chain performance, and identifies key aspects related to each sustainability dimension, as well as the interactions between them, as illustrated in Figure 30. The 4 firms were positioned on the SSCM model to align with the different sustainability strengths they apply, as previously demonstrated in Figure 29, and to reflect the different priorities each firm applies to the 3 sustainability performance dimensions.
Figure 30: Sustainable Supply Chain Management (Carter and Rogers, 2008)

Figure 30 provides a visual response to the research questions regarding the level of importance SMEs apply to the sustainability dimensions, and in turn indicates how they each approach the balance of the 3 dimensions; the findings indicate that the prioritisation of certain dimensions and the resulting balance or imbalance is strongly linked to specific owner-manager principles. Firms A and B apply the strongest environmental principles, but neither is highly profitable, while Firm F’s strong social commitment and poor financial performance positions it more firmly in the social performance dimension of the SSCM model. Firm I demonstrates the closest balance of all 3 dimensions; its environmental commitments are currently prioritised over social performance, producing a slight skew towards this performance dimension, but its profitability and growth evidence a greater recognition of economic performance.

None of the cases skews directly towards economic performance, which the literature recognises as the dominant focus in current practice (Pagell and Wu, 2009, Seuring, 2008); this is due to strong environmental and social principles and a reduced priority on profit maximisation, but illustrates how a firm can skew towards other dimensions. These findings address the research question relating to SSCM balance; the findings from Firm I suggest that it is possible to achieve a better balance of the 3 performance dimensions, and indicates that...
SMEs can provide valuable insights for SSCM, but as Figure 30 illustrates it is still a challenge to achieve the ‘best’ position on the current SSCM framework.

The SSCM framework identifies strategy and risk management as key considerations for environmental and economic performance; the studied firms did not explicitly discuss sustainability in terms of business strategy, and while supply disruptions and their financial impacts were acknowledged in the interviews, they did not take priority. In response to the final research question, this could be reflective of the specific characteristics of SMEs and suggests that the SSCM framework is more aligned with the performance of larger firms that have more explicit and formalised responses to strategy and risk management.

The framework also indicates the role of organisational culture on the social performance of a firm’s supply chain and that transparency is a key aspect of supplier operations, and these aspects were more strongly represented in the studied SMEs, especially in terms of values/principles and their embeddedness within the culture of the firm. Both the sustainability and SSCM literature recognise that the social dimension of the framework is currently under represented (Pagell and Wu, 2009, Schaefer, 2004, Sharma, 2003), and yet the focus of the research on SMEs suggests the opportunity to better understand the social dimension and the limitations of current frameworks for fully understanding and balancing sustainability in supply chains.

The literature reviews indicated that there are reactive and proactive approaches to the environmental performance dimension of the SSCM framework, with the former representative of the ‘easy to green’ bias highlighted in the sustainability literature (Preuss, 2005a, Vachon and Klassen, 2006a, Ashby et al., 2012). The SSCM framework does not explicitly incorporate a firm’s supply chain structure, but levels of environmental proactivity can be aligned with a firm’s Supply Chain Orientation (SCO) i.e. whether it applies a transactional, partnership or network approach. Figure 31 positions each of the studied firms against the SCO model, based on their environmental principles and the form of their supplier
relationships; this informs the response to the research question on how SMEs structure and manage their supply chains, how this relates to sustainability as well as the nature of their supply chain relationships.

The model illustrates that the studied SMEs are primarily proactive in their environmental orientation, and in response to the fourth research question indicates that none of the SMEs structure their supply chains around transactions. Firm F has been highlighted throughout the findings as being more focused on social performance and responsibility, and therefore occupies a lower position in terms of environmental orientation through its pollution prevention practices, but with its commitment to a specific community it applies a strong partnership SCO. The other 3 SMEs are closely aligned with Firm B the most environmentally proactive and Firm I achieving the most networked and managed supply chain.

![Environmental Approaches of Case Studies](image)

*Figure 31: Environmental Approaches of Case Studies*

For Firms A, B and I environmental responsibility and proactivity is strongly embedded in their products, processes and performance, highlighting the tangibility and measurability of the environmental dimension (Banerjee, 2010). Firms A and I only use organic raw materials,
which are fully certified to enable product transparency, and Firm A is more explicit in its use of natural dyeing processes and environmentally friendly components. With its explicit closed loop approach Firm B has the strongest environmental orientation as it aims to keep all environmental impacts within its direct control and is engaging in strategic partnerships with local, UK-based producers to facilitate this commitment.

The visual representations of the case study supply chains presented in Chapter 10 reflect key differences in configuration and complexity between the 4 firms, and enable further insight into how SMEs structure their supply chains and how this relates to sustainability; Firms B and I operate the most complex supply chains with a large degree of transportation between stages, even when within the same country. Firms A, B and I all have multiple supply chains for different products which are located in different countries, while Firm F has a single-tier and relatively simple supply chain in comparison, all located within the same area of India. Firm A has the widest product range of all 4 case studies, with different suppliers for most products, and therefore its entire supply chain cannot be represented; however they rely on a core of 25 key suppliers the majority of which are based within Europe and the supplier maps illustrate their overall simplicity and the proximity of supply chain stages.

Firm F operates the simplest single-tier supply chain, which is reflected in its Partnership SCO; its priority is to support and develop 1 specific community in India rather than developing and managing a network of suppliers. Firm I in contrast recognises the strategic importance of managing its supply chain to ensure product quality and timely delivery of its range of products, as well as the achievement of its sustainability commitments. The majority of its supply chain is based in India across multiple locations; interaction between suppliers is being developed and encouraged, they have a local representative who regularly visits and monitors all suppliers and the firm’s Supply Chain Manager also visits every season and is establishing standard planning processes for each supplier. Firms A and B both have multiple suppliers and multi-tier supply chains, but rely more on their relationships with individual suppliers rather
than harnessing and coordinating a network of suppliers; this approach still enables them to achieve a highly proactive environmental orientation.

The limitation of the SCO model is that it suggests that firms are achieving sustainability when fully environmentally proactive and networked, but does not explicitly consider the social responsibility of a firm within its supply chain. It could be argued that this is implied through the achievement of a fully networked supply chain, which is indicative of a more committed, long-term approach, but this does not capture the multiple facets of the social dimension and supplier relationships highlighted in the literature review and research findings. It also highlights the complexity of the social dimension and the difficulty of applying a tangible measure, and reflects the potential limitations of the current SSCM framework, which is based on the 3BL concept of measuring the 3 sustainability performance dimensions.

Whether applying a partnership or more integrated network SCO, the literature indicates that successful supply chain relationships rely on trust, not power or compliance (Preuss, 2005b). In response to the research sub-question on how SMEs structure their supply chains, a greater emphasis on trust was evidenced amongst the studied SMEs. In contrast to the reviewed literature, and in combination with respect this represented a key emerging theme in the findings. Supply chain effectiveness is reliant on strong supply chain relationships and the RBV highlights the importance of the relational embeddedness built through on-going supplier interactions (Barney, 1991); this can be further considered as a critical antecedent to firm performance (Bernardes, 2010). The studied SMEs are all in continuous communication with their suppliers and often have very personal relationships with suppliers, which is indicative of the relational embeddedness that can be achieved when a long-term commitment not focused on lowest cost is applied.

The literature questions whether the social dimension is an appropriate goal for business (Schaefer, 2004, Lamming, 1996); the studied SMEs indicate that for them a commitment to social responsibility within their supply chains is not just appropriate and relevant, but often
forms a fundamental business principle, and provides further insight into how SMEs balance the 3 dimensions of sustainability performance, as well as the role of strong SME principles in SSCM. For Firm F social commitment is absolutely core to the business: it was only established to support a twinned community. While not the explicit driving force for the other 3 firms, they all acknowledge the ‘people’ dimension in their principles (Pullman et al., 2009), and where appropriate their practice. This suggests that the social dimension should be embedded in the firm rather than serving as an explicit objective or goal that may or may not be achieved; it further indicates that framing SSCM as 3 measurable dimensions will inherently create a skew towards economic and environmental performance, because of their greater tangibility.

The SSCM literature currently underrepresents the related facets of social capital, CSR, SRP and social equity, as evidenced in Table 8, Chapter 4. The sacrifice or limitation of profits in CSR is well recognised in the literature (Jenkins, 2006, Fitjar, 2011), aligning with the studied SMEs and the reviewed SME literature, together with potential overlaps between the environmental and social dimensions to achieve a more ‘local’ level of sustainability. However while there is understanding of the relevance of social capital to sustainability there is limited translation of this into practice, especially in relation to supply chains; this key gap in the literature significantly informed the choice of theoretical lenses to be applied to the research findings.

**SMEs and Sustainability**

In contrast to the sustainability and SSCM literature, the social dimension was extensively represented in the SME literature, with a greater emphasis on understanding the ‘why’ of SME sustainability practice and developing meaningful theoretical constructs (Kusyk and Lozano, 2007). Social capital was explicitly referenced as a strength generated through sustainability principles and practice, and a focus on the positive outcomes of sociability (Spence and Schmidpeter, 2003). SMEs can be considered to be social entities that revolve around personal relationships (Jenkins, 2004), and unlike other forms of capital social capital is embedded in
the relationships that SMEs develop with their network (Jansen et al., 2011). Both research phases produced findings that responded to the research questions on supply chain relationships by highlighting their importance to SMEs, and Firms F and I in particular emphasised how embedded and personal their supplier relationships had become over time. In terms of contributing to SSCM, these personal relationships can create an emotional intensity and commitment, with firms and suppliers ‘in it from the heart’ (Owner, Firm I).

The studied firms also reflected the recognised characteristic of reduced priority on profits within SMEs, with Firms F and A achieving a satisfactory flow of income (Storey, 1989), and the former directing the majority of its profits to the Indian community; this aligned with the literature that recognises many SMEs pursue profit-satisficing strategies that just enable them to stay in business (Fitjar, 2011). Only Firm I had established specific growth targets and evidenced increased profitability; Firm B skewed its focus to economic performance by trying to improve its profit margins in 2011, but recognised that a wish to grow too quickly through more competitive sourcing compromised its product quality and integrity. This in turn further emphasised the importance of strong and long-term supplier relationships.

Due to this reduced emphasis on profits the social priorities model presented in Chapter 4 was applicable to the studied firms, as illustrated in Table 42. It further serves to answer the research questions relating to how SMEs interpret sustainability and the impacts of different priorities on the balance of the 3 sustainability performance dimensions. It also offers an indication of some of the practices that SMEs engage in to support these interpretations and priorities, and therefore helps to develop a response to the research questions related to practice and performance.
### SME social perspective frames

<table>
<thead>
<tr>
<th>Profit maximisation priority</th>
<th>Description</th>
<th>Case Study Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The drive for maximising profit is the company’s top priority</td>
<td>None</td>
</tr>
<tr>
<td>Subsistence priority</td>
<td>Long-term survival through ensuring security of livelihood; maintenance of a certain standard of living</td>
<td><strong>Firm B</strong> – emphasis on environmental performance, but commitment to working with socially responsible suppliers and long-term relationships</td>
</tr>
</tbody>
</table>
| Enlightened self-interest priority | Active in social issues with conscious awareness of the positive influence that the owner-manager perceives this will have on their business | **Firm A** – commitment to and active engagement in developing local community and business as well as long-term relationships with European suppliers.  
**Firm I** – working towards direct involvement with social projects, both local and global. Positive impact of organic cotton of farmers’ lives and well-being. |
| Social priority             | Social values and actions are integrated into the business life and take priority over maximising profit | **Firm F** – commitment to specific Indian community. All profits directed to community development |

Table 42: The 4 social perspective frames of SMEs applied to studied firms (Jenkins, 2006)

None of the firms applied a profit maximisation priority, but Firm B was the closest to a subsistence priority due to its greater emphasis on environmental performance and a short-term focus on increasing profits during the study period. Firms A and I also have a strong environmental focus, but in contrast to Firm B are more actively engaged in social projects and local community initiatives and achieve an enlightened self-interest priority. Unsurprisingly Firm F was the only firm to put their social values and commitment fully ahead of profits to achieve a social priority.

While the studied firms contribute a proportion of their profits to both local and global charities, and are actively engaged with local community initiatives and developments, in line with the reviewed literature (Spence and Schmidpeter, 2003), there is a stronger emphasis on benefitting and ‘changing lives’ within their supply chains through their sustainability commitments and practices, for example through the use of organic cotton. This aligns with a long-term commitment to suppliers rather than purely transactional relationships, and offers further insight into the research questions on how SMEs approach supply chain relationships.
The emphasis on trust evidenced amongst the studied SMEs reinforces the key role of social capital in enabling collaboration, which in turn represents a key strategic focus, as illustrated in Figure 32; it aligns with the literature which recognises SMEs are more likely to pursue cooperative frameworks based on trust, reputation and pursuit of mutual benefits (Arend and Wisner, 2005). These findings contribute to answering the research questions around the nature of SME supply chain relationships and the role played by the intangible qualities of trust, commitment and shared understandings within these relationships.

The studied SMEs all focused on value over low cost in their supply chains, with Firms B and I applying stronger emphasis on the innovation of their products and processes; this innovation is primarily focused on environmental performance and reflects the high levels of eco literacy within the studied firms. This contrasts with the SME literature, which suggests that low standards of eco-literacy are common among owner-managers and there is limited internal motivation for addressing the environmental impacts of their supply chains (Tilley, 2000).

A firm’s strategy is enhanced by the supply chain relationships it develops and Figure 32 assists in developing an answer to the question of how SMEs approach supply chain relationships, and the relevance of trust and commitment. Firm I has vertical relationships with its established suppliers, and is also encouraging horizontal supplier-to-supplier relationships and alliances, which is not the norm in the Indian textile industry and therefore is highly reliant on the
building of trust and transparency. It also has the most successfully managed and networked supply chain, which as indicated in the literature leads to better information sharing and greater levels of trust, more cooperation and potential collaboration (Kontinen and Ojala, 2012) and stronger social capital. Firm B is working to have full supply chain visibility and interactivity and has developed strategic partnerships to enable this. These relationships are also illustrative of how external social capital connects SMEs to supply networks and external stakeholders and makes it possible to obtain resources and expertise, which can overcome some of the constraints associated with SMEs and contribute to innovation (Kontinen and Ojala, 2012).

Firms A and F have established collaborative relationships with their suppliers, which positions them in the bottom right quadrant of the classification matrix, but apply less focus on the coordination and harnessing of supplier skills to develop new and innovative offerings. This suggests SCM implementation in these SMEs is less of a priority or outside of the firms’ current abilities, and as a consequence they are not fully harnessing the benefits of SCM, as highlighted in the literature (Thakkar et al., 2011). The ability to provide value to customers can be severely impeded by a dysfunctional supply chain, and this is reflected in the firms’ position in Figure 32; Firm F is explicitly aware of the difficulties in managing their supply chain and the impact it has on their production and customer value. For both firms their supply chain relationships are more informal than those of Firms B and I who actively manage their supply chains.

While the studied firms are of different sizes in terms of employees and turnover, these specific characteristics do not appear to align with their choice of supply chain strategy and provides some initial insight into the research questions regarding how the specific characteristics of SMEs contribute to SSCM; these findings suggest that it is not tangible characteristics that determine and SME’s supply chain structure and approach. All 4 firms are situated in the value-added quadrants and have never applied a low cost strategy, due in part to the higher costs involved in their chosen raw materials and production. This contrasts the
literature, which suggests that SMEs move from one quadrant to another as they grow; it could be applicable to Firm I, which is the largest of the studied SMEs as they have progressed from a strategy initially focused on collaborating with 1 supplier to managing a supplier network that can provide more innovative and commercial products.

This could question the importance of SCM in the SME supply chain context as the nature of supplier relationships and sustainability principles could have a stronger influence on how firms achieve environmental and social performance. While Firms B and I are endeavouring to manage and control their supply chains they still tend to achieve this through more informal mechanisms and established supplier relationships, reflecting the embeddedness and social capital that can be achieved through on-going interactions. All of the studied firms highly value communication, cooperation and trust, both with their suppliers and other key stakeholders (Paik, 2011), and this aligns with the literature’s recognition that SMEs are inherently more focused on developing and managing tacit knowledge (Thakkar et al., 2011). This in turn aligns with the RBV of the firm and begins to indicate the overlaps between the 3 chosen theoretical lenses of RBV, SCT and SNT.

Application of Theoretical Lenses

The review of the literature was undertaken before considering and choosing appropriate theoretical lenses to limit any potential constraints on understanding the developing research field of SSCM. The review of the sustainability and supply chain literature indicated a key research gap, namely SSCM in the SME context. The subsequent review of SME literature significantly informed the choice of the 3 interrelated theoretical lenses of RBV, SCT and SNT. It was considered that a single theoretical lens would not fully capture the rich and multi-faceted nature of sustainability in the supply chain context, and that the use of multiple lenses would enable broader perspectives and interpretations of this phenomenon.

While they represent 3 distinct concepts there are clear and strong interactions between the RBV, Social Capital and Social Network theoretical lenses. Figure 33 illustrates the key
components of each theory and the interactions across the 3 applied lenses. While the RBV focuses on all strategic resources within a firm there is a strong emphasis on more tacit and intangible resources that will enable a sustainable competitive advantage to be achieved i.e. that cannot be easily replicated and is distinct to the firm. Such resources are contained within socially complex interactions, skills and knowledge, and the embeddedness of these resources. Socially complex and tacit resources are represented in the relational components of both SNT and SCT, which relate to shared meanings, trust and strength of relationships; while the RBV component of embeddedness is echoed in SCT where the key tacit resources of trust and beliefs are captured in the social structure of relationships.

Figure 33: Interaction between chosen Theoretical Lenses

Chapter 6 introduced, critiqued and justified the use of the 3 theoretical chosen lenses, which collectively provide an original conceptual model for understanding SSCM in the SME context. While there are differences between the lenses there are also strong overlaps, as illustrated in Figure 33, and their emphasis on more subjective, ‘real world’ ontologies means that they are philosophically compatible. A focus on developing rich understandings of complex phenomena and solving human problems (Powell, 2001) aligns the lenses with more interpretive epistemologies which in turn directs the researcher to more qualitative data collection techniques and analysis.
The lenses individually and collectively offer relevant and valuable insight into the research findings and the understanding of SSCM in SMEs. While the RBV is potentially more developed and more frequently used with the business management context, and SNT has a firm grounding in multiple disciplines, it is SCT that offers the greatest potential for understanding a key focus of this research, namely the characteristics and value of relationships and how they can be harnessed to achieve SSCM. While it is not yet theoretically rich (Williams and Durrance, 2008) it represents a key theory in the SME literature and has the strongest emphasis on relationships; it encapsulates elements of both RBV and SNT (the value of relationships which is key to SCT is an output of SNT) and the concept of embeddedness is more fully articulated through this specific lens.

This section will investigate the interaction between the 3 lenses in more detail and examine how these theories apply to and align with the presented research findings. It will then evaluate and discuss how the theories and findings can be developed to provide a potential framework for understanding SME sustainable supply chains. It is intended that the use of multiple theoretical lenses will enable a more nuanced and comprehensive SSCM framework to be developed that more strongly reflects both the tangible and intangible characteristics of the 3 sustainability performance dimensions.

**Resource Based View**

The RBV emphasises the strategic importance of both tangible and intangible resources within the firm, and, in the case of the latter recognises the key role of relationships and sharing of information. Socially complex interpersonal relationships and the tacit resources and skills that are embedded in these relationships and the people involved can provide a firm with valuable and non-imitable advantages and highlights the importance of harnessing supply chain relationships; firms are no longer just considering their internal resources, but rather their network of resources. Through supplier collaboration, as strongly evidenced by the studied SMEs, firms can create value that cannot be achieved independently (Nyaga et al., 2010),
demonstrating that a supply chain is the sum of its parts. It also recognises that SMEs are typically resource poor (Paik, 2011, Towers, 2008), so strong relationships are key to enable firms to overcome these constraints.

Processes have formed the focus for environmental performance in research to date because of their greater tangibility and measurability (Banerjee, 2010); they can have a positive impact on financial performance, so it is easier to make a business case for focusing on ‘green’ processes and practices (Preuss, 2005a, Vachon and Klassen, 2006a, Ashby et al., 2012). However following RBV principles such processes do not represent a strategic resource and does not necessarily reflect an embedded approach to sustainability. The studied firms may employ similar practices, such as the use of organic cotton, which are ultimately imitable, but how they connect these practices to their specific beliefs and principles varies. It is this, in conjunction with their socially complex supply chain relationships, which enables firms to embed sustainability in their business behaviours.

Each of the studied firms exhibited different key aspects of the RBV of the firm. The firm owners come from a diverse range of backgrounds and none had any explicit experience in the textile industry; they therefore gained a range of tacit skills as they developed and evolved their businesses to meet their sustainability principles. For Firm I these tacit skills evolved through a partnership and ultimately personal friendship with the one supplier in India that was willing to work with them when the business was established. While the supplier had the tangible manufacturing skills the firm needed they both learned through the experience and developed a product that was unique to the clothing marketplace. This shared experience and learning has created a long established working relationship that is integral to how the firm operates.

Firm F illustrates how embedded beliefs and behaviours can become within a firm and its supply chain; all employees that were involved in the case study fully understood and communicated the purpose of the firm and its commitment to an Indian community and how
this related to their supply chain practices, such as the use of Fairtrade cotton. It was accepted that costs and investment within the UK had to be kept to a minimum to ensure that the Indian community gained the maximum benefits; this created a culture of efficiency that was reflected throughout the UK practices, such as manual stock keeping and non-computerised systems. These shared beliefs and commitment also originally extended into the firm’s supply chain with tailors refusing to work for anyone else, even with the owner’s permission.

The founder and Head Designer of Firm B were heavily involved in product development from the start and this evolved into the creation of their own performance fabrics, based on biomimicry concepts (Benyus, 1997). This involvement and control of a key supply chain stage offered the potential for developing strategic resources. Their lightweight outerwear fabrics are core to their brand and difficult for competitors to replicate exactly, while the recent strategic partnership with a Devon producer of Merino quality wool represents a rare, valuable and inimitable resource. The firm itself developed the idea for reintroducing a specific breed of sheep to the UK, but relied on their supplier to make this initiative happen; they located the only remaining flock of sheep in the UK and developed a breeding programme to establish production-level numbers. In response to the research questions on supply chain relationships it relied on trust and shared commitment and the resources are strongly embedded in this collaboration.

Firm A indicates how socially complex a firm’s resources can become; its product offerings directly align with their strong green principles and are achieved through almost 100 different suppliers, with a core of 25 long established suppliers. This reliance on so many separate suppliers means that the firm has developed and nurtured strong, but also distinct and varied relationships with each supplier. The choice of supplier is influenced by similar beliefs and commitments to sustainability and the skills to provide a product aligned to the firm’s principles. For Firm A it is the combination of its suppliers rather than the individual products that give it its strong identity and authenticity, while for Firm I the strength, reliability and performance of its supply chain is key; this is developed and managed through shared and
embedded beliefs, but also a willingness for their suppliers to interact with each other to create transparency and trust.

**Social Network Theory**

SNT as illustrated in Figure 33 focuses on the structural and relational facets of networks and how these contribute to organisational outcomes, with an emphasis on the intangible resources of connections and relationships (Autry and Griffiths, 2008). The pattern and strength of ties is of key importance (Wills-Johnson, 2008), and will have a significant impact on how a firm achieves its goals and principles.

In contribution to the research questions on SSCM, the studied firms have all structured their supply chains differently with different flows, interactions and levels of complexity, and this indicates that there is no single defined approach in this context. Firm F has the simplest supply chain structure and the choice of suppliers has been strongly influenced by proximity and alignment with sustainability principles. It could be argued that an inability to adapt the supply chain to develop a pattern of ties with better, potentially more competitive suppliers has contributed to the firm’s decline during the recent recession. The founder recognises they do not manage their supply chain and are therefore less proactive, as indicated in their SCO in Figure 31. There were strong ties with the Indian community originally, which led to personal friendships, but over the years the trust and reciprocity has weakened and has not enabled the firm to achieve the outcomes necessary to maintain the business; together with increased raw material costs, reduced profits and supply chain issues this led to its closure in 2013.

Firm B structures its supply chain around an on-going commitment to developing local supply, but also around the quality and performance required in its products. While having different products with different suppliers adds complexity to their supply chain, it enables the firm to harness supplier specific resources, skills and relationships as a mechanism for product development and innovation, which aligns with their supply chain strategy (Figure 32). Their emphasis on establishing strong ties with more local suppliers within the UK and Europe
reflects a long-term strategy that improves supply chain visibility, reliability and control, but also addresses their environmental principles. Firm A is also committed to sourcing its products as locally as possible, but its environmentally-focused and broad product range means it relies on a wide network of many different and primarily small, specialist suppliers that can extend beyond Europe.

Firm I operates a truly managed network of suppliers and there is a growing level of interaction between Indian suppliers; this contributes to a pattern of ties that enables a more efficient use of resources across the supply chain. The owner is very aware of how its supply chain structure and the strong ties developing between all actors contributes to its on-going success and growth, and they actively look to build and improve their supply chain relationships through regular interaction. The owner has very strong ties with the firm’s first supplier, which has evolved into a close friendship. This means that both parties engage in behaviours perceived appropriate to those of a friend (Neergaard et al., 2005), which is reflected in more tolerance of difficulties but also a true desire to support each other.

Social Capital Theory

Social Capital is a specific aspect of SNT, which bridges with RBV as it focuses on resources embedded in the social structure of relationships and how they can be harnessed (Wills-Johnson, 2008). It affects organisational processes, but unlike other forms of capital is not located in a certain place and can have weak and strong positions, which will impact a firm’s performance. Its strength is reflected in the emotional intensity and degree of intimacy in relationships, frequency of contacts and reciprocal commitments (Pirolo and Presutti, 2010).

As illustrated in Figure 33 there are 5 parallel forms of social capital, namely trust, beliefs, norms, rules and networks (McElroy et al., 2006), and it is therefore this lens which enables the strongest response to the research questions regarding supply chain relationships. Trust and beliefs were strongly reflected in the primary research findings, with the former evolving through on-going and personal relationships and the latter representative of shared meaning
and understanding of sustainability principles. For many of the firms alignment of suppliers’ beliefs and practices with their sustainability principles was a key selection criterion.

Firm F had emotionally intensive relationships, especially when first established; the owner had a highly personal, passionate, almost evangelical desire to make a difference to a community she had come to know and the community in turn had approached her with a desire to work rather than receive charity. This strong emotional commitment created some true friendships, reflective of a high degree of intimacy; however the facet of reciprocity was perhaps less developed as in recent times the community has chosen alternative sources of income over the needs of Firm F. Unreliable supply together with the impacts of the recession has seen the business decline significantly to the point where it has gone out of business.

There was evidence of strong reciprocity in Firm B’s relationships with its Portuguese suppliers who were often willing to achieve lower margin to meet the firm’s requirements; this would then be reciprocated by Firm B when possible e.g. later delivery on some orders. They also had a high frequency of contact with their supply chain manager, who felt like their agent was in the room with them. Their collaboration with a Devon producer to develop a UK source of Merino quality illustrates how a very strong tie can positively contribute to organisational outcomes in line with SNT, but also an emotional/friendship based and highly reciprocal relationship built on shared beliefs and commitments. Without these characteristics the project would never have been initiated, and this contributes to answering the research sub-question on SME supply chain relationships.

Firm A has over 100 suppliers, but with a core of 25 that it relies on for the majority of its products, and shared sustainability beliefs and principles are integral to their relationships with these as well as prospective suppliers. Supplier beliefs and understanding of sustainability do not need to be identical to their own principles, but a level of alignment is required by the firm and contributes to the intensity of the relationships. There is also a high frequency of contact
with the key suppliers, but unlike Firms B and I this is not achieved through visits, as the owner’s strong environmental principles translate into the minimisation of air travel.

Firm I has a highly emotional and intimate friendship with its first supplier, and their real desire to help each other throughout the history of their relationship reflects their strong and established reciprocal commitment. Of the studied firms it has the highest frequency of contacts between different employees and all areas of the supply chain, and the reciprocity between the firm and its suppliers comes from trust-based relationships and shared understanding and beliefs; suppliers are ‘in it from the heart’. The firm’s explicit recognition of the importance of the social capital developed through its supply chain relationships is contributing to a strong and well-managed supply chain.

**Conclusion**

This chapter has evaluated the case study findings against the research questions and key aspects and models from the reviewed literature to understand the alignment and potential gaps between the SSCM concept and SME supply chain practice within the UK clothing industry. The research addresses an acknowledged need for industry specific research and more understanding of firm size in sustainability practices (Hassini et al., 2012). The 3 lenses of RBV, SCT and SNT have been applied to the findings to enable theoretical triangulation (Padgett, 1998) and develop different perspectives of SSCM in this context, as well as a means to explicitly address the underrepresentation of social performance in current sustainability models (Pagell and Wu, 2009, Schaefer, 2004, Sharma and Ruud, 2003). The chosen lenses emphasise the importance of relationships, shared meanings, and intangible resources, and offer the potential of a more balanced and embedded supply chain response to sustainability.

Current sustainability models including the 3BL (Elkington, 1994), the 3 ring sector view (Giddings et al., 2002) and the SSCM framework (Carter and Easton, 2011) all frame sustainability as 3 distinct, but interrelated dimensions. The literature reviews and research findings applied to relevant models indicate a skew towards specific dimensions; in current
SSCM literature the skew is towards economic performance, while the findings suggest a reduced focus on this dimension, but that other dimensions may take priority and skew the balance, so providing an answer to the research questions on SSCM balance. The challenge of balancing the 3 sustainability performance dimensions is recognised in the literature (Reuter et al., 2010) and the studied SMEs reflect this challenge; however they also demonstrate a more embedded response and commitment to environmental and/or social performance than currently reflected in SSCM research, and stronger forms of sustainability than the weak form that currently dominates in practice (Springett, 2003).

While the 3 dimensions of economic, environmental and social provide an accessible and holistic way to frame sustainability it could be questioned whether they represent the most appropriate means of translating this concept into supply chain practice. Gladwin et al (2005) explicitly question the 3-sector model and believe it encourages a 'technical fix' approach because each sector can be treated separately and fundamental connections may be ignored. The frameworks that aim to address all 3 dimensions demonstrate skews towards economic performance and the economic-environment intersection, and an underrepresentation of the social dimension, while others focus on a single dimension or component, such as environmental management in relation to SCO (New and Westbrook, 2004).

None of the reviewed frameworks fully capture the role of supplier relationships in SSCM, beyond supply chain orientation, despite recognition of their importance in the literature (Spekman et al., 1998); in contrast the findings emphasise a need for long-term, mutually beneficial supplier partnerships, which could evolve into highly personal relationships. A number of authors (Inyang, 2009, Banerjee, 2010, Giddings et al., 2002, Liyanage, 2007, Kjaerheim, 2005, Wilkinson et al., 2001, Gardner, 2002, Gladwin et al., 1995) advocate a need for a new, more holistic approach to successfully implement and achieve sustainability in practice, and suggests that the current framing of sustainability as 3 distinct dimensions needs to more fully capture the rich, tacit and more human components of sustainability and how relationships can fully harness their application to the supply chain context.
Chapter 12: Contribution and Research Implications

Introduction

A fundamental goal of research is to create and develop knowledge, which translates into structured information that is readily accessible and of lasting value (Melnyk and Handfield, 1998) to researchers and practitioners. The initial research questions of this thesis focused on how sustainability is defined and operationalised, in order to understand how current theory informs industry practice and contribute to the developing field of SSCM. Through structured reviews of relevant sustainability, supply chain and SME literature, and a parallel research phase key knowledge gaps were identified; the research goal of understanding and developing SSCM in the SME context was established (de Weerd-Nederhof, 2001) and the final research questions developed.

Theory development requires rich description of the studied phenomenon, which is achieved through collection and analysis of qualitative data (Mintzberg, 1979). Through in-depth case studies of 4 UK clothing SMEs SSCM practice was investigated in this chosen context, and key categories and emergent themes within the findings were analysed in relation to current SSCM research and through the 3 specified theoretical lenses in order to answer the research questions. By identifying relevant variables and their connections (Key, 1999) a multi lens SSCM model is developed to explain how SMEs structure and manage their supply chains for sustainability. The model recognises components of current sustainability supply chain concepts and models, and evolves them to present a conceptual framework; this framework contributes to SSCM research by addressing key gaps identified through the literature review and developing a framework that has applicable value in supply chain practice.

The Research Questions

As outlined in the Introduction chapter and detailed in the Methodology each research question and sub question aligns with a theme or concept from the reviewed literature and
are applied specifically to the SME context. The questions commence broadly by looking to understand how sustainability is defined in SMEs and then become progressively more focused on the nature of SME supply chains, and the role that supplier relationships and the specific characteristics of SMEs play in understanding and achieving SSCM. Table 43 presents the themes and corresponding research questions, and aligns them with the case study findings.

<table>
<thead>
<tr>
<th>Literature themes</th>
<th>Research questions</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defining sustainability</td>
<td>How do SMEs interpret sustainability? Sub Question: Do SMEs recognise different dimensions of sustainability?</td>
<td>Each SME has its own unique interpretation of sustainability and they are strongly aligned with the principles of the owner-managers. All recognise the 3 sustainability dimensions but their principles and individual visions influence the priority that is given to each.</td>
</tr>
<tr>
<td>SSCM balance</td>
<td>How do SMEs approach the balance of economic, environmental and social performance? Sub Question: What level of importance do they apply to each dimension and why?</td>
<td>While all the SMEs recognise the 3 separate dimensions, their chosen commitments affect the extent to which they balance them. None focus purely on economic performance.</td>
</tr>
<tr>
<td>Practice</td>
<td>How do SMEs practice sustainability and how is performance measured?</td>
<td>Primarily through use of sustainable raw materials and manufacturing processes. The focus is on downstream supply chain processes and the use of certification to measure/monitor performance.</td>
</tr>
<tr>
<td>SSCM</td>
<td>How do SMEs structure and manage their supply chains? Sub Question: How does this contribute to addressing sustainability?</td>
<td>2 SMEs have global supply chains, while the other 2 aim to achieve more locally based supply chains to minimise environmental impacts and achieve greater control. Collaborative and innovative strategies, partnerships and networks enable sustainability goals to be achieved.</td>
</tr>
<tr>
<td>Supply chain relationships</td>
<td>How do SMEs approach their supply chain relationships and do these relationships contribute to successful SSCM? Sub Question: What role does trust, commitment and shared understandings play?</td>
<td>All of the SMEs focus on building long-term, committed and mutually beneficial supply chain relationships. Some of the relationships are very personal, almost emotional, and they generate mutual understanding of sustainability principles and goals.</td>
</tr>
<tr>
<td>SME characteristics</td>
<td>How do the specific characteristics of SMEs contribute to sustainable supply chain performance and why? Sub Question: Are there SME characteristics that enable more effective SSCM?</td>
<td>Resource constraints, especially for the smaller firms encourage efficient, effective and often innovative use of resources, which contribute to environmental performance. Less focus on profit means environmental and social dimensions are more fully addressed, and social commitments are embedded. Owner-manager principles make a significant impact on how effectively SSCM is addressed.</td>
</tr>
</tbody>
</table>

Table 43: Alignment of Literature Themes, Research Questions and Findings
The following sections discuss and respond to each research question in more explicit detail, and evaluate the contributions they make to understanding SSCM within SMEs and the implications for SSCM research.

**Defining Sustainability**
The literature highlighted the extent of interpretation that exists around defining sustainability within the operational context, but also illustrated how the 3 dimensional definition/view has dominated to date. Both research phases indicated that SMEs apply their own unique interpretations of sustainability within their operations, and these align with specific owner-manager principles or sustainability commitments. Interviewees were not prompted, but all of the in-depth cases and the majority of the mini cases recognised, implicitly or explicitly that there are economic, environmental and social dimensions of sustainability. This indicates awareness of the 3BL concept/definition as well as high levels of sustainability literacy, but the key contrast with the research literature was that none of the firms prioritised economic performance, and this in conjunction with principles influenced their SSCM balance.

**SSCM Balance**
While the SMEs recognise the 3 separate dimensions of the SSCM model, as Figure 30, Chapter 11 illustrates, they all achieve a different balance of their economic, environmental and social performance. Firm I achieved the closest ‘best’ SSCM balance, through a more explicit and structured/targeted focus on profitability and growth; however financial performance would not be allowed to compromise their sustainability commitments. The other SMEs illustrated how the SSCM model can be skewed in different directions than current research indicates, through the zealous and often passionate commitment to environmental or social sustainability. These skews and different strengths of sustainability align with specific owner-manager principles, but while there is still an imbalance against Carter and Rogers’ (2008) model, social responsibility as a whole was more fully embedded within the SMEs.
Practice
The studied firms demonstrated a range of different sustainability practices within their supply chains and many aligned with their specific sustainability principles and commitments. In line with the literature and the more objective nature of this research question, many of the practices discussed by the interviewees were tangible and focused on environmental performance i.e. through the use of specific materials or processes. These practices were monitored and measured primarily through relevant supplier certifications and accreditations that provided firms and their customers with performance assurances. There were also implicit practices related to social performance, through the positive benefits of environmentally responsible behaviours on health and safety, and a commitment to the well-being of all those in the supply chain, which for some firms extended to charitable activities. These practices were less measurable, but considered the ‘right thing to do’ by the SMEs.

Sustainable Supply Chain Management
Of the studied firms 2 operated global supply chains, based dominantly in India, while 2 were actively working to create ‘local’ i.e. UK or Europe-based supply chains. The global nature of 1 supply chain was determined by an explicit commitment to a specific Indian community, while the other resulted from only 1 supplier in India being able to meet SME’s specific needs, and evolved into a friendship and implicit commitment to sourcing from India. The other 2 SMEs source some materials globally due to current limited availability, but as part of their environmental commitment they have developed strategic partnerships with UK and European suppliers that in the long-term will enable improved visibility and control of their supply chains. All of the SMEs considered their suppliers as partners and collaborators, and placed very strong emphasis on developing long-term, trustful relationships as a means to manage their supply chains. There was therefore an alignment between SME principles and sustainability commitments and their chosen supply chain structure.
**Relationships**

All of the SMEs were committed to long-term, trust-based and mutually beneficial supply chain relationships, with Firm F knowing workers in their supply chain for over 25 years; none of the SMEs were engaged in purely transactional relationships. For some a partnership approach enabled collaboration and innovation, and the achievement of specific environmental goals, while some of the relationships were personal and often emotional, evolving from years of interaction and shared experiences. This contributed to shared understanding of and commitment to sustainability across the studied SME supply chains, and highlighted the importance of these characteristics to achieving SSCM. This intangible and very human aspect of the research findings had a tangible impact on the firms’ sustainability performance, and indicates how more short-term focused supply chain interactions contribute to the skew towards economic performance in SSCM.

**SME Characteristics**

A reduced priority on profit maximisation was recognised as a key characteristic of SMEs, and this was strongly illustrated in the case study findings; in line with owner-manager sustainability principles and commitments this characteristic orientated the SMEs towards better/stronger environmental and social performance, and addressed the current economic skew in SSCM research. The research findings have indicated that owner-manager principles have a significant impact on how effectively an SME addresses SSCM, and the extent to which these principles are embedded and shared within the organisation creates a culture of sustainability, which can translate across the supply chain. In addition the resource constraints typically associated with SMEs can be a positive influence specifically on environmental performance, as it encourages the efficient and innovative use of materials, components and finished goods, which in turn minimises cost. It is therefore the more intangible, SME specific characteristics that most strongly contribute to SSCM, and despite their heterogeneity, they enable SMEs to more comprehensively respond to sustainability in their supply chains.
Research Contribution

This thesis represents one of a very few research projects that actively aims to fully and explicitly address the social dimension within SCCM, and it does so through the application of an original combination of theoretical lenses. This addresses some of the recognised constraints of current operations research methodologies (Meredith et al., 1989) that bias towards the more tangible, measurable sustainability dimensions and enables a deeper, more nuanced understanding of SSCM in the SME context. It is a previously unexplored connection, but which in conjunction with the 3-lens model developed from this thesis offers extensive potential for new and improved research in this field. The following sections discuss each of the research contributions, both practical and theoretical.

Practical Contributions

The research, and the methodology and models it has employed, have developed a rich picture of current SME sustainability principles and practice within supply chains, and it has generated insight that can inform SME and potentially LE SSCM practice. The thesis concludes with key messages and recommendations for both researcher and practitioners of SSCM and sustainable supply chains; these practitioner recommendations could be further developed into practical frameworks for SSCM implementation and decision-making.

For researchers the thesis has opened up new foundations and opportunities for SSCM research. During the course of the thesis the structured review of sustainability and SCM literature was published in Supply Chain Management: An International Journal (SCMij) and so makes a tangible addition to a developing body of research literature. It provides other SSCM researchers with a foundational understanding of its current status, theoretically, methodologically and practically, and indicates key areas for future research.

The review of SME literature in conjunction with sustainability and supply chain literature also opens this up as a new field for SSCM research. The reviews indicate a strong connection and interaction between the research fields, especially in relation to the social dimension of
sustainability; it also highlights a growing need for structured literature reviews in order to understand the current status of SME research in relation to SSCM and sustainability.

**Theoretical Contributions**

The thesis has made a number of theoretical contributions through its review of specific and previously unrelated bodies of literature, the application of an original theoretical model to the chosen research area and the development of a new conceptual model/framework from the research findings that offers a rich, more nuanced view of SSCM.

**Review of the Literature**

The systematic review of supply chain and sustainability literature has contributed to an improved understanding of the existing status of research in these fields, and identified key gaps and areas for development within SSCM research. An understanding of how sustainability is defined and conceptualised, and applied to supply chain practice has been developed and the literature’s emphasis on qualitative methods and theory development illustrates the evolving nature of SSCM. A key gap in current SSCM research is the imbalance between the 3 acknowledged dimensions of sustainability; organisational practice tends to skew towards economic performance, with an awareness of environmental, but limited application and understanding of social performance. The latter dimension is significantly underrepresented in the SSCM literature together with knowledge on how supply chain relationships can contribute to addressing sustainability.

As well as identifying key gaps in current SSCM research the literature reviews evaluated its status in terms of models and research methods employed to date. This provides a methodological foundation for future theory development and testing by other researchers, which the literature recognises as a key imperative in the field. It also offers the opportunity to push SSCM research in new and different directions to enable fresh, original perspectives to be developed and address key research gaps relating to the social dimension of sustainability.
The review of the literature also extended to contributing to knowledge in the field of SME research, as SSCM in this specific context is currently underexplored. It addresses an acknowledged research bias towards the study of LEs (Kusyk and Lozano, 2007, Friedman and Miles, 2002), and identified key gaps in current SME literature in relation to supply chains. Reviewing the SME through the lens of sustainability opens up new lines of enquiry and potential research areas within the SSCM field.

The importance of SMEs makes it necessary to examine the sector’s role in an economic, social and environmental framework and make theoretical, as well as empirical contributions to the SME field (Storey, 1999). This research also addresses a bias toward multi-industry studies by focusing on a single, and highly relevant industry (Carter and Easton, 2011); the scale, scope and global nature of the clothing industry has strong environmental and social implications and to date there has been an emphasis on large mainstream retailers’ responses to sustainability.

**Multiple Theoretical Lenses**

The potential constraint of applying a single theory to such an expansive and dynamic field as SSCM was strongly acknowledged, and the application of multiple theoretical lenses enabled valuable insights and profitable lines of enquiry (Chicksand et al., 2012). The choice of the lenses was informed by the literature, and as a means to address the current skew towards economic performance and lack of supply chain relationship understanding; consequently there is an interrelated emphasis on the social dimension between the 3 chosen lenses of RBV, SNT and SCT.

The use of 3 lenses rather than a single theory makes an important theoretical contribution to this research field, and also contributes to developing each theoretical lens, particularly SCT. This original and novel conceptual model, through its focus on the intangible, tacit and human components of SSCM, provides a framework and opportunity to more fully analyse and understand SSCM, as well as create tools for practitioners. It addresses some of the recognised constraints of current operations research, which tends to employ a narrow range of
methodologies and quantifiable techniques (Meredith et al., 1989).

The Phase 1 research findings indicated that SMEs have a more developed understanding and application of the social performance dimension, and they strongly recognise the need for committed, long-term, trust-based relationships; both of these aspects represent key gaps in SSCM literature. Specific SME characteristics seem to align with a firm’s approach to sustainability in supply chains, with smaller SMEs more likely to rely on informal and often personal supply chain relationships, and owner-manager principles strongly influence these relationships, their approach to sustainability and specific environmental and social supply chain commitments and practices.

The primary research built on the mini case studies themes and findings by focusing on 4 of the studied SMEs, which had significant similarities and differences, and undertook a series of interviews over a 12-month period. Within and cross case analysis identified a range of different themes related to SME characteristics, sustainability and supply chain practice, and supplier relationships, and ordered them into 8 core categories and 8 emerging themes. The categories indicated a strong emphasis on principles and supply chain relationships, while the emerging themes introduced a strong human/emotional dimension, reflected in a desire to make a difference and change lives.

The application of the 3 theoretical lenses developed these more principled, personal and human dimensions from the research findings to understand how the studied SMEs harness their supply chain relationships to manage and develop resources and achieve their sustainability commitments. The interconnection between the lenses was explicitly recognised and emphasised the currently underrepresented intangible and tacit components of SSCM; how firms are connected, the strength and importance of relationships, shared trust, visions and meanings, and the embeddedness of principles and resources were all represented in the findings and contributed to a rich and nuanced view of how sustainability performance is addressed in SME supply chains.
Conceptual Framework

As well as making contributions through its review of previously unrelated fields of literature, and the application of an original theoretical model to analyse and understand the research findings, the key output of this research is a conceptual multi-lens SSCM framework. It builds on existing models identified through the review of the literature, specifically focusing on Carter and Rogers’ SSCM model, and offers rich, innovative and more nuanced perspectives of SSCM in the SME context, as well as potential new research directions.

While informed by existing models, the framework evolved from this research is entirely original; this has been achieved through its focus on SMEs, an underexplored SSCM research field, and the application of a conceptual theoretical model. It emphasises that this is one of a very few research projects that aims to fully and explicitly address all 3 of the sustainability performance dimensions within SCCM, and explore and address the more intangible and human aspects of sustainable supply chains.

The alignment and comparison of the research findings against existing SSCM frameworks highlighted some limitations of the current 3 dimensional framing of sustainability; the explicit recognition of economic, environmental and social performance appears to encourage trade-offs between the 3 dimensions rather than interaction, and promote a skew towards the more established organisational commitment to profit and growth (Pagell and Shevchenko, 2014). A key purpose of this research was to address this imbalance through improved understanding of social performance and the role of supply chain relationships; its key contribution is in more fully understanding current sustainability and SSCM frameworks and developing a conceptual SSCM framework which aims to address their limitations to capture a more interrelated and embedded view of sustainability in SME supply chains.

The following sections introduce the conceptual framework, and discuss its contribution to current and future SSCM research and implications for supply chain practice in more detail. It starts with a critique of the current models and frameworks that were identified through the
literature reviews, and follows with the presentation and discussion of the conceptual model that has been developed.

**Critique of Current SSCM Frameworks**

The review of sustainability and SSCM literature has established that sustainability can be defined and framed as 3 dimensions, namely economic, environmental and social, and these dimensions have been explicitly incorporated into a number of models, which aim to apply and balance these dimensions in practice. The idea of different strengths of sustainability was a common theme across the literature and the varying academic viewpoints were consolidated into a Spectrum of Sustainability, where weak sustainability represents a traditional economic approach focusing on growth and profits over environmental and social impacts (Lamberton, 2005), while strong sustainability stringently emphasises the importance of environmental protection (Nilsen, 2010).

The 3-ring sector view represents a simple, accessible mechanism for conceptualising the 3 sustainability dimensions, and underpins the 3BL model developed by John Elkington (1994) to apply sustainability in the business context. Carter and Rogers’ 2008 SSCM framework progresses the 3BL concept in order to operationalise it specifically in relation to supply chain performance. These frameworks present the 3 dimensions equally and do not explicitly reflect the different strengths of sustainability presented in the Spectrum of Sustainability, and all imply that ‘true’ or ‘best’ sustainability exists at the central intersection of the 3 rings.

However the literature strongly acknowledges that there are both implicit and explicit trade offs between the 3 dimensions and that economic performance dominates, representing a weak ‘business as usual’ form of sustainability (Springett, 2003). This suggests that while these frameworks can conceptualise sustainability they have some limitations when applied in practice and within the current Western economic paradigm (Banerjee, 2010).

The supply chain literature recognised that the social dimension is currently under developed and that to date there has been an emphasis on more tangible and measurable supply chain
processes and practices (Banerjee, 2010). This is reflected in the SCO model in Figure 31, Chapter 11, where sustainability is achieved through environmental proactivity and a networked supply chain, and while this model enables an explicit understanding of environmental performance in the supply chain context, it does not acknowledge its interaction with the dimensions of economic or social performance. There is a clear need to more comprehensively address social performance, both through theoretical frameworks and supply chain practice, and to understand how the 3 sustainability performance dimensions can be fully integrated, and the role and relevance of supply chain relationships recognised.

Applying the SSCM framework to the studied SMEs indicates that they apply different priorities to economic, environmental and social performance, as indicated in Figure 30, Chapter 11; there is a less pronounced skew towards economic performance than represented in current SSCM literature due to a reduced focus on profit maximisation, and a stronger emphasis on environmental and/or social performance based on owner-manager principles. All 4 firms achieve a ‘better’ level of sustainability, but only Firm I comes close to the ‘best’ sustainability. This illustrates the challenge of balancing the 3 performance dimensions, and that an emphasis on any single performance dimension can still skew the model, as illustrated by Firm F, but also questions the applicability of this SSCM framework. If a true balance or sustainable supply chain cannot be achieved, as suggested in the literature (Beske, 2012), then is SSCM being framed appropriately or should academic research consider different dimensions to address this imbalance and develop a richer, more nuanced understanding of SSCM.

The review of SME literature indicates that small businesses tend to have a more embedded approach to social responsibility and that relationships are key to overcoming resource constraints and achieving successful organisational outcomes. It more fully recognised the importance and relevance of supplier relationships, as well as applying greater emphasis to the more tacit components of supply chain practice rather than the hard, quantifiable dimensions that currently dominate in the SSCM literature (Banerjee, 2010). This softer, inherently more human-focused approach to sustainability by SMEs was strongly reflected in the research
findings, and offers the potential for developing a deeper understanding of SSCM in this context.

**Developing a Multi Lens SSCM Framework**

Recognising the key gaps in SSCM research and some of the limitations/restrictions of existing sustainability frameworks, and as a tangible contribution to the growing and important field of SSCM research the findings were developed into a conceptual framework. The framework formalises the core categories and emerging themes from the findings and incorporates the 3 applied theoretical lenses to offer a richer, more tacit perspective of SSCM; it aims to address economic, environmental and social performance without making these sustainability dimensions explicit and therefore encouraging trade-offs or the prioritisation of economic performance, the dominant response to current frameworks.

The developed model acknowledges existing sustainability frameworks such as the 3-ring sector view (Giddings et al., 2002) and Carter and Rogers’ SSCM framework (2008), but by reframing the 3 dimensions in line with the findings and combined theoretical lenses it aims to more explicitly encapsulate the complexity of the social performance dimension and the importance of embedded principles to achieving a balanced approach to sustainability. It also addresses the key role of supply chain relationships, which is recognised but underdeveloped in the current SSCM literature (Soni and Kodali, 2011, Burgess et al., 2006, Ashby et al., 2012); through the theoretical lenses of the RBV, SCT and SNT it explicitly recognises the intangible resources and tacit skills that can evolve through continued, trust-based interactions and often personal friendships, the relational embeddedness (Bernardes, 2010) that results and how it positively contributes to firm performance and organisational outcomes (Autry and Griffiths, 2008, Wills-Johnson, 2008).

The conceptual framework presented in Figure 34 still employs a 3-ring approach, as it controls the complexity of the model and represents an elegant mechanism for visualising SSCM within the SME context. It employs 3 different dimensions, which echo the People, Profit, Planet
framing of sustainability, but are less explicit than the economic, environmental and social sustainability dimensions; the model instead captures the core categories and emerging themes from the research findings, and recognises their fundamental connections (Gladwin et al., 1995), rather than potential trade-offs. The theoretical lenses of the RBV, Social Network and Social Capital all emphasise the importance of relationships, and have a stronger focus on the more intangible, tacit aspects of supply chain practice. They have been used to understand and develop the research findings against the reviewed literature, and are applied to the dimensions developed in the model to provide it with theoretical strength and rationale, and highlight the key interactions between the lenses.

Figure 34: Multiple Lens SSCM Framework

- RBV Dimensions
  - Resources
  - Tacit skills
  - Embeddedness
  - Innovation

- Social Capital Dimensions
  - Social structure
  - Personal
  - Relationships

- Social Network Dimensions
  - Relationships
  - Embeddedness
  - Connections

- Culture
  - Specific owner-manager principles & commitments
  - Embeddedness
  - Connections

- Practice
  - ‘Human’ elements – employees & suppliers
  - Emotions/personal interactions/friendships
  - Shared understanding

- People

- Principles
  - Trust & respect
  - Beliefs
  - Shared meaning

- How a firm approaches profit, growth and commerciality and how they align with firm specific commitments/purpose
  - How a firm structures its supply chain - encapsulates new and/or local supply chains, and preservation and posterity

- Level of eco literacy
- Product – design/development, lifecycle, authenticity
- Use & development of resources – efficient, effective, mindful

- Making a difference

Figure 34: Multiple Lens SSCM Framework
The social dimension underpins the developed framework through the strong human focus that was demonstrated throughout the findings, directly addressing the dominance of economic performance in current SSCM frameworks, and enabling the role of relationships to be more fully integrated. Each of the 3 dimensions represents a consolidation of related core categories and emerging themes from the findings; the People dimension captures key elements of the Social and Employees categories, as well as the Human/Emotion theme, while the Principles dimension directly encapsulates the Principles category together with the emerging themes of Human/Emotion, Trust and Respect, Making a Difference and Mindfulness.

The more tangible and resource-related components of the findings are captured in the Practice dimension to include environmental and social supply chain practices, and the themes of Product and Authenticity. Unlike the SSCM framework the 3 dimensions are not all an equivalent size, reflecting how they were prioritised in the findings, and producing a framework that emphasises the more intangible and tacit components of SSCM over hard, quantifiable practice. All 3 dimensions sit within an outlying Culture dimension that represents the categories and themes related to Supply Chains, including global, local and new configurations, Business in terms of approaches to profitability, growth and commerciality, External Factors and the emerging themes of Preservation and Posterity.

The dominant core category in the research findings was Principles and this was key to understanding the ‘why’ of SME sustainability practice (Kusyk and Lozano, 2007); personal, deeply held beliefs were integral to the set up of all 4 firms and to the nature of their practices and supply chain relationships. This category aligns strongly to key aspects of SCT in terms of trust, respect, and beliefs, but also encapsulates the emergent themes of Authenticity and Mindfulness. Authenticity was a key theme not currently reflected in SSCM literature and relates to how a firm’s principles are reflected in all aspects of their business behaviours, from its people to its processes, products and interactions with stakeholders. The theme of authenticity suggests a need for strongly embedded principles for successful and genuine
implementation of sustainability, but also acknowledges that different principles will produce different strengths of sustainability, as illustrated in Figure 29, Chapter 11.

The Social dimension was another key category across the studied cases and encapsulated many of the people-focused facets of sustainability in SME supply chains. It again aligned strongly with key aspects of SCT in terms of shared meanings and understanding, and the social structure of relationships. Human/Emotion was the dominant emergent theme across the findings and develops these SCT aspects into a deeper, more nuanced understanding of social performance. Due to their emphasis on human elements, this category and emerging theme were integrated and framed as People within the Multiple Lens Framework in Figure 34; this dimension directly interacts with the Principles dimension, but also emphasises the impact that principles have on the people within a firm’s supply chain. The findings reflected strong emotional intensity, both in personal desires and passions to make a difference to people’s lives and in the supply chain relationships/friendships.

Practice as an explicit theme was less well represented in the findings than in the reviewed literature because the studied firms focused less on specific individual practices and more on how principles aligned with supply chain relationships and would translate into appropriate and authentic sustainability behaviours; this progresses current sustainability frameworks where environmental performance is measured in terms of tangible processes and practices to some of the more intangible, tacit dimensions of the RBV. The Practice dimension also reflects the eco literacy of the owners and their suppliers, which translates into a shared understanding of sustainability practices, together with the tacit skills/resources that are embedded in the supplier relationships and can be harnessed for process and product innovation.

While the structure of the Multiple Lens Framework still implies a balance of the 3 dimensions of People, Principles and Practice there is recognition that appropriate and authentic practice/supply chain behaviour evolves from strong embedded principles and emotionally
intense, human-focused relationships and there is a reduced emphasis on the dimension of practice in contrast to current sustainability frameworks, reflected in its smaller scale. The 3 dimensions are also grounded within the business/supply chain environment, which recognises the overarching role of SNT; it is presented in the framework as the Culture dimension in order to enable the broader, more functional aspects of SSCM to be addressed, as well as the influence of the industry and business culture in which a firm operates.

The framework incorporates tangible organisational outcomes including economic performance in terms of profitability, growth and commerciality, as well as the structure of a firm’s supply chain. The interactions between People, Principles and Practice will influence the structural and relational nature of a firm’s supply chain, translating into both tangible and intangible supply chain practices that reflect a firm’s specific sustainability commitments, and contributing to its organisational outcomes. These interactions in turn influence a firm’s economic performance and growth, as reflected in the Culture dimension, and the business and supply chain culture in which the firm operates will also influence the extent to which these 3 new dimensions can be achieved, represented by the Social Network dimensions in the framework.

The fundamental connections and interactions between the 3 dimensions of People, Principles and Practice, rather than their trade offs are acknowledged in the framework; this addresses the recognition in the reviewed literature that connections can be ignored in current supply chain practice, as each sustainability dimension can be treated separately (Gladwin et al., 1995). Since the framework is strongly underpinned by the social sustainability dimension through its stronger human focus, it is more integrated and less likely for a single dimension such as economic performance to dominate.

There is a strong synergy between the dimensions of People and Principles, which reflects this human foundation; it is people, including owner-managers who translate their principles within the firm, but equally the principles that have been demonstrated in the findings
including trust, respect, and the desire to make a difference create strong, socially complex
and often emotional relationships, relationships that enable firms to translate their principles
into meaningful and aligned practices. The interactions between these 2 dimensions and the
dimension of Practice are in how they influence and inform resource use and specific
environmentally and socially responsible materials, products, processes and practices; the
Practice dimension is the tangible reflection of a firm’s people and principles, but also reflects
the extent to which these behaviours are embedded within the firm.

The conceptual framework suggests that the dimensions of People, Principles and Practice
should be considered and balanced to achieve SSCM, but offers flexibility in how this is
approached; while the findings from the 4 studied SMEs informed the model each firm applies
it differently and with different organisational outcomes. Firm F illustrates the importance of
the culture and social network aspects of the model; it has the strongest social priority and
social principles of all the studied firms and is highly focused on the people within its supply
chain, but its lack of supply chain management and networking weakened its ability to respond
to recent challenges within its business environment and industry as a whole, and as a result it
went out of business towards the end of the research study. During the study period Firm B
also looked to adapt its supply chain to focus more specifically on profit, sourcing suppliers
based on cost rather than commitment and long-term mutually beneficial relationships; this
resulted in a compromise of principles related to quality and integrity, which in turn
jeopardised the authenticity of its brand.

Firm I operates the strongest social network of the studied firms, and explicitly manages and
develops its supply chain relationships to achieve sustained financial growth and long-term
commitment to ensure the longevity of the firm. Its relationships are human-focused and
often emotional with a commitment within the firm to changing the lives of their suppliers.
This aligns strongly with their specific founder principles and translates into environmentally
and socially responsible practices, which are resource efficient, socially complex and
innovative. Firm I therefore evidences the strongest balance against the model, but Firm A
applies a similar balance of People, Principles and Practice albeit with a reduced focus on profit, growth and commerciality, and stronger commitment to ‘dark green’ principles.

Both Firms A and B apply a highly proactive approach to environmental performance, as evidenced in Figures 29 and 31 in Chapter 11, but rather than viewing environmental performance as a distinct dimension it is incorporated within the Principles dimension of the Multiple Lens Framework; this progresses current SSCM frameworks, where a focus on the environmental and economic interaction can result in an imbalance of the sustainability performance dimensions (Ashby et al., 2012). The developed framework recognises and embraces the concept of different sustainability strengths and levels of proactivity, as the findings have indicated that different SMEs approach SSCM in different ways, but embeds these components within dimensions that can also fully consider a firm’s social performance, and prevent a skew towards other dimensions.

By applying theoretical lenses that explicitly address the social dimension the research contributes to the field of SSCM research by embedding the underrepresented human and less tangible aspects of sustainability within a framework that still enables economic and environmental performance to be addressed without the inherent trade offs highlighted by the literature review. The 3 dimensions of People, Principles and Practice are more fundamentally integrated because of their strong overlaps and interactions; the framework is less about achieving a ‘perfect’ balance and more about how the dimensions inform and influence each other to produce organisational outcomes specific to the individual firm.

As well as their strong social emphasis the applied lenses relate to all aspects of organisational outcomes, not just the single dimension of economic performance dominant in the literature; the 3 conceptual dimensions all contribute to organisational outcomes that are appropriate to an individual SME’s specific characteristics, principles and commitments. Against the current SSCM model Firm F’s poor economic performance in response to a non-negotiable social commitment creates an imbalance that would be perceived as organisational failure, while the
conceptual SSCM framework suggests the firm has successfully balanced its principles and commitments to people in its supply chain with its practices, but was unable to manage its supply chain effectively in a changing business environment. It highlights that there are different measures and perceptions of organisational success other just than economic performance; the fundamental aim of Firm F was to make a difference to the lives of a specific community and this was achieved successfully for over 25 years.

There is therefore no single expected outcome or emphasis in the conceptual framework evolved from the research findings; it reflects the rich and varied approaches to SSCM within the SME context and offers the flexibility for firms find their own individual balance and approach to sustainability. It does not force trade-offs between specific performance dimensions, but encourages a more holistic view and alignment of both tangible and intangible components of SSCM within a firm’s specific business and supply chain. It makes a tangible contribution to knowledge within the field of SSCM, as well as developing SME research within the context of sustainability.

**Research Implications**

The originality of the research process, the conceptual theoretical model that has been applied, and the research findings and outputs that have developed as a result have a number of impacts on both research and practice. As highlighted in Chapters 7 and 8 my industry background and strong interest in the human and relationship dimension of supply chains has contributed to a preference for constructivist and interpretivist philosophies and rich, qualitative research methods. This research has been strongly underpinned by a desire to understand and explain SSCM in a richer, more nuanced and holistic way, and to harness this improved understanding into practical and meaningful outputs, for both researchers and practitioners.

SCM has been largely practitioner-led (Burgess et al., 2006), and the evolving field of SSCM offers substantial potential for translating sustainability theory into practice. However, the
literature reviews revealed a significant and persistent gap between the diffusion of sustainability discourse and its practical application and operationalisation (Hamdouch and Zuindeau, 2010), as well as an acknowledged lack of impact of management research on operational practice (Ghoshal, 2005). While current literature advocates the benefits of cooperation and sharing of information within supply chain relationships, it still has had a tendency to focus on supply chain processes and hard, quantifiable elements, and therefore offers limited guidance to firms and managers wishing to address social performance in balance with their firm’s economic and environmental performance.

Theory is a systematic attempt to understand what is observable in the world and creates logic from observable facts (Key, 1999). The development of theory is ultimately practical and provides a structure for data, sequences, constructs and relationships which can allow managers to make sense of the data they deal with in the business context (Melnyk and Handfield, 1998). Very few of the reviewed papers in Chapter 4 provided tangible outputs such as an explicit framework or model to inform the implementation of sustainability, with SSCM discussed largely in theoretical terms within the current literature. Given the inherently practical nature of the SSCM discipline translating the theory developed through more focused approaches into actual supply chain practice should be a key priority, and the conceptual Multi Lens Framework presented in Figure 34 was produced as a tangible contribution to this gap between theory and practice.

Practical insights into the balanced and integrated implementation of sustainability in supply chains have been gained by developing the findings of this research into more nuanced SSCM framework, and there has been an imperative to move from the current narrow, disconnected approaches towards sustainability practice to a more holistic view of the field. The framework is intended to embed a better understanding of social performance within SSCM; it is recognised that this dimension is less tangible/measurable than ‘hard’ operational processes and practices, which are more accessible to managers, but the conceptual framework emphasises the importance of the social dimension and its contribution to firm performance.
The multiple facets and People elements of social performance need to be explicitly considered and owner-managers should continually evaluate a firm’s core principles, ensuring they are embedded and aligned with social considerations and practices.

The reviewed literature outlined why collaboration and committed, long-term supplier relationships are strategically important to SSCM, but offered limited ‘real life’ insights or guidance into how they can be achieved and their contribution to sustainability. The case study research findings with their emphasis on trust and personal relationships/friendships addressed this gap in understanding. The conceptual SSCM framework indicates that positive and well-aligned sustainability practices evolve out of strong and well-communicated principles. These core principles can extend through the firm’s supply chain and owner-managers therefore need to make decisions based on long-term, mutually beneficial relationships that will enable the constraints and barriers associated with SMEs and sustainability practice to be overcome. It also highlights that decisions and actions that move away from these core principles, as in the case of Firm B, can have negative implications for firm performance and organisational outcomes. A potential practical output that could be developed from this study would be a series of managerial guidelines that align with the conceptual framework and enable a more formalised approach to the balanced consideration and implementation of sustainability in SME supply chains.

Implications for Researchers

This research has a number of implications for SSCM researchers, and the structured review of supply chain and sustainability has provided a foundation for more focused research and theory development. It has highlighted the key methodologies that have been employed to date, and an emphasis on qualitative over quantitative research methods; these more deductive, explanatory methods indicate that the field is still developing, and there was recognition that the dominant method of case studies needs to be more industry-specific (Carter and Easton, 2011) and employed across larger numbers of organisations/supply chains.
While the development of case studies to offer more structured insight is a key recommendation, these current research emphases also indicate a need for theory testing within the SSCM field, especially given its dynamic nature, and this gap presents an important opportunity for more positivist Operations Management researchers. The application of more quantitative and statistical research techniques would allow the models that are increasingly being developed, including the conceptual model resulting from this thesis, to be tested, developed further and provide a stronger theoretical foundation for SSCM.

It is recommended that researchers apply an increased focus on the social dimension of sustainability and develop mechanisms, both qualitative and quantitative, that more fully capture this important facet of sustainability within supply chains. Sustainability is a holistic concept, but current literature and research does not provide a truly holistic understanding of SSCM; this indicates a key gap that future research should address, but also suggests a potential rigidity in the prevalent 3 dimensional view of sustainability that may constrain SSCM research.

This thesis has applied multiple theoretical lenses that while philosophically compatible have evolved from different, non-Operations Management backgrounds. Individually they have not been extensively employed in operations research to date and collectively they offer creative and novel approaches to understanding SSCM. Researchers in this field are encouraged to be more inventive and cross disciplinary in their use of theories to enable new and original perspectives to be developed, but to also overcome some of the barriers and narrow biases of more ‘traditional’ OM research (Meredith et al., 1989), as well as the current framing of SSCM as the 3 distinct dimensions of economic, environmental and social performance.

This advice extends to looking beyond the typically biased study of large organisations and MNCs in management and operations research, and researching other forms of organisation and supply chain within specific industries. This thesis has identified and highlighted the importance and relevance of SMEs within SSCM research and it is recommended that more
structured literature reviews of this field be undertaken to provide a firm foundation for future research and theory development.

**Implications for Managers and Practitioners**

The need for tangible outputs was recognised as a key gap in current SSCM research, and together with the above recommendations researchers are advised to develop and test theory that will have a practical application for SSCM in business and industry. This research has developed a conceptual model, which contributes to both the theoretical and practical understanding of SSCM within SMEs, and has the potential for developing tangible tools for both managers and practitioners.

Organisations are increasingly employing managers in explicit sustainability/CSR roles which are intended to inform organisational decision-making; while these roles are less likely within SMEs the key messages from the research findings and model are applicable to all managers/owners who need to make sustainability-related decisions. The research has highlighted that an emphasis on profit inherently encourages compromises on sustainability performance; it is recommended that managerial decisions be more balanced and more fully evaluate the long-term, rather than short-term, financial implications of addressing environmental and social performance.

While the Triple Bottom Line (3BL) is becoming a recognised framework in the managerial context there is still an inherent ‘bottom line’ emphasis on measurability, which contributes to the skew towards the more tangible economic and environmental intersection, as reflected in the SSCM literature. In contrast the conceptual model presented in Figure 34 emphasises 3 different, more strongly interrelated SSCM dimensions, and encourages the holistic understanding of a decision’s impact, rather than just its financial implications.

For managers this will mean a re-thinking of sustainability related decisions, whether at the organisational level or specifically in relation to its supply chains, and the development of ‘measures’ that can capture the value of the intangible and tacit resources this research has
identified. This will require recognition of the potential impacts and benefits of such resources on organisational performance and outcomes, as well as understanding the key role of supplier relationships in developing these valuable resources. Managers also need to move the focus away from tangible, ‘easy to green’ processes and establish strong underlying sustainability principles that will translate into sustainable practice.

For practitioners, which will include the suppliers themselves, the recommendations and implications of this research are less about decision-making and more about understanding the importance of communication, interaction and developing long-term, trustful and mutually beneficial relationships. The value and importance of these relationships is the responsibility of all employees, and if aligned with strong, committed and potentially shared principles can create an embedded culture that ensures a balanced, considered approach to SSCM. The research recognises the importance of principles to SSCM and recommends that firms ensure they are not compromised, especially as SMEs grow in size. An embedded sustainability culture has the potential to prevent the compromises and trade offs associated with current SSCM practice, and protect and progress a firm into the long-term.

Research Limitations

This research thesis has some specific limitations. The case study sample represents a loose network of exemplar SMEs who address sustainability in their supply chains, and they were sourced through prominence in the industry and reference by other SMEs i.e. snowball sampling. There was therefore an element of researcher judgement required when choosing each SME for inclusion. This is reflective of this particular sector, and more rigid criteria and selection methods could be applied in other sectors/industries; however the clothing industry is a highly relevant and high profile industry for SSCM research. As the research focused on SMEs that have embedded sustainability principles, there was also no consideration of established SMEs who may be considering sustainability implementation in their supply chains.
While this research addressed a recognised issue in the current literature where single case studies and multi-industry perspectives dominate (Carter and Easton, 2011) it has only investigated a specific industry sector, namely SMEs within the clothing industry and therefore the applicability of the findings and SSCM framework that has evolved from them needs to be tested in other industries and larger organisations. There has been no explicit consideration of SSCM in the LE context or review of the relevant literature, due to the recognition that academic research tends to focus on LEs (Curran and Blackburn, 2001); however there are potentially important insights that can be gained from this field and which would enhance and balance the research. The proposed SSCM framework has the potential to be relevant to LEs, but it may need further development to be applicable across all sizes of business and industry.

**Future Research**

The recognised limitations of this research highlight the clear need for comparative work in the SSCM discipline and the development of more practical and operationisable research outputs (Hamdouch and Zuindeau, 2010). This could be achieved by comparing the SME specific findings of this thesis to the sustainability strategies and supply chain practice of LEs. LEs may have highly networked supply chains and a strong emphasis on tangible performance in line with the SNT aspects of the developed SSCM model, but there is an assumption in the literature that LEs focus on more quantifiable practices and easy to green processes, rather than embedded principles and the more intangible aspects of supply chain relationships. This needs to be examined in more depth and this assumption tested. The study could be directly replicated in large clothing organisations that are addressing sustainability in their supply chains, but the research could also extend to both SME and LE supply chain in other relevant industry sectors.

The Phase 1 research findings suggest that supply chain structures, owner involvement, supplier monitoring and supply chain practices may change and become more formalised as a firm grows in size, which in turn could impact sustainability principles. As the dimension of
Principles is core to the proposed SSCM framework it would be appropriate to investigate how a change in SME size would influence this specific aspect and its impact on the other dimensions of the framework. This finding was not developed further within the primary research due to the timescales involved, but it was recognised that Firm I in particular is experiencing sustained and relatively rapid growth, and therefore a single longitudinal case study of this firm could provide further insight into how SSCM evolves as SMEs and their supply chains transition into larger organisational forms.

A further challenge is to develop appropriate methods and tools to capture the evolving field of SSCM and move from the current dominance of case studies and surveys to other methodologies, and start to test rather than just develop theory. To fully understand sustainable supply chains there also needs to be deeper analysis of the relational aspects of SCM and how they can be used to address sustainability. This represents a key area for future research; its lack of focus to date reflects the challenge of researching the field from a more holistic viewpoint, but also offers potential for progressing SSCM from ‘greening’ to a ‘virtuous circle’ that fully addresses sustainability at all supply chain stages and interactions.
Appendices

Due to the size, detail and complexity of the majority of files all Appendices have been provided on a supporting USB drive. The contents of the USB drive are detailed as follows.

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Appendix 11 – Within Case Checklist Matrix

Appendix 12 – Industry Standards and Certifications

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Appendix 13 – Case Study Pivot Table

Appendix 14 – Cross Case Thematic Matrix

Appendix 15 – Category Analysis
List of Abbreviations

SCM – Supply Chain Management

SSCM – Sustainable Supply Chain Management

SME – Small or Medium sized Enterprise

LE – Large Enterprise

MNC – Multi National Corporation

NGO – Non-Governmental Organisation

GSCM – Green Supply Chain Management

ESCM – Environmental Supply Chain Management

EM – Environmental Management

DfE – Design for the Environment

DfR – Design for Remanufacturing

DfD – Design for Disassembly

RL – Reverse Logistics

CLSC – Closed Loop Supply Chain

LCA – Life Cycle Analysis

SRP – Socially Responsible Purchasing

SCO – Supply Chain Orientation

ILO – International Labour Organisation

ITUC – International Trade Union Confederation

DEFRA – Department for Environment, Food and Rural Affairs

TRAID – Textile Recycling for Aid and International Development
ETI – Ethical Trading Initiative

UNDP – United Nations Development Programme

ECLAC – Economic Commission for Latin America and the Caribbean

TCE – Transaction Cost Economics

RBV – Resource Based view

SNT – Social Network Theory

SCT – Social Capital Theory

GOTS – Global Organic Textiles Standard
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