THE UNIVERSITY OF HULL

EXPLORING SUPPLY CHAIN SUSTAINABILITY RISK IN THE UK FASHION INDUSTRY: A MULTIPLE CASE STUDY

A THESIS SUBMITTED TO THE UNIVERSITY OF HULL FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN THE LOGISTICS INSTITUTE

2015

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ABSTRACT

Much has been written about fashion supply chains in recent years pertaining to the offshoring of production and sourcing by the companies in the UK fashion industry to other countries including *inter alia* Asia, as well as the attendant risks to such activities. Evidence suggests that businesses can experience disruptions from sustainability issues in their supply chains. In addition, there is an increasing focus on sustainability issues in global businesses and the UK fashion industry is not immune to these issues. Nevertheless, consideration of sustainability and its impact on risk pertaining to the supply chains in the UK fashion industry has not been actively pursued. Moreover, little is known about how sustainability issues manifest themselves as risks. Finally, the lack of a sustainability risk conceptualisation hinders the development of a sustainability risk management framework, which is critical to enable global fashion supply chains to survive and compete in a volatile and demand-driven sector. Therefore, the aim of this thesis is to explore the phenomenon of sustainability risk and supply chain sustainability risk management processes within the context of the UK fashion industry.

For the purpose of exploration, an inductive qualitative research approach and a multiple case study research method were adopted. The UK fashion industry has exhibited interesting dynamics in the last few decades. For example, UK textile and garment manufacturing has massively declined in size, yet the UK fashion industry demonstrates fierce competition and retailer concentration. Therefore, five fashion companies were theoretically sampled from the UK fashion industry. The selected companies were a good mix of small and medium size. All carried out their major operations such as sourcing, manufacturing, distribution, warehousing and customer service in the UK. This enabled the researcher to deeply explore and gain insights into the phenomenon of sustainability risk and supply chain sustainability risk management processes in the contemporary context of the UK fashion industry. Data was collected by semi-structured interviews, supported by observations and secondary sources. Interview transcripts were subject to narrative analysis based upon a social constructionist approach.

This research identified seven major factors as barriers and drivers for supply chain sustainability risk management: organisational culture, growth of fast fashion, organisational resources, management structure, safeguarding brand reputation, stimulator of innovation and co-opetition. These findings were further grouped into a supply chain sustainability risk management typology. The typology implies that the case companies need to understand and should have knowledge about their current and potential future key sustainability risk and then need to have a certain organisational design and innovative management processes to manage their supply chain sustainability risk.

ACKNOWLEDGEMENTS

First and foremost, I am extremely grateful to my supervisor, Professor David Bruce Grant, for his valuable time, continuous encouragement and expert and kind supervision. He has been a huge inspiration throughout this journey and his excellent guidance and kind support made this thesis possible. I was truly privileged to work with him and he will always be a great source of inspiration to me in the academic arena as well as a model of guidance and mentoring.

Secondly, I would like to thank Dr. Patsy Perry from the University of Manchester who came on board in the third year of this journey and enriched this research with her invaluable advice and consistent supervision support.

I am also grateful to Professor Chee. Y. Wong and Omera Khan for their valuable guidance in the earlier years of my PhD.

Sincere thanks to Professor Terry William, dean of Hull University Business School and Dr. Mark Rhodes, research director at Hull University Business School, for their kind support during a difficult time in this journey.

I want to express my deep gratitude to all the case companies for welcoming me and allowing access into their businesses, and to the interviewees who devoted their valuable time for this research.

I am also thankful to Kathryn and Mohammed Qasim Al-Darwish for their invaluable help and inputs in my interview transcriptions and thesis proof reading.

Many thanks are due to the research staff at Hull University Business School and Logistics Institute who provided consistent support and facilitated this journey. I would particularly like to express my gratitude to the Hull University Graduate School for awarding me a scholarship, without which this research would not have been possible.

Most importantly, I want to thank my parents, brothers and sisters and friends for their love and support. Many thanks for being instrumental in maintaining my sanity, interest in research and optimism.

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LIST OF ABBREVIATIONS

BCM	Business Continuity Management
DC	Dynamic Capability
EPOS	Electronic Point of Sales
FSCs	Fashion Supply Chains
ISPs	Integrated Service Providers
IT	Information Technology
LCA	Life Cycle Assessment
MFA	Multi-Fibre Agreement
OTIF	On-Time-In-Full
RBV	Resource Based View
QR	Quick Response
RFID	Radio Frequency Identification
SC	Supply Chain
SCI	Supply Chain Integration
SCM	Supply Chain Management
SCRM	Supply Chain Risk Management
SCSR	Supply Chain Sustainability Risk
SCSRM	Supply Chain Sustainability Risk Management
SCSRMP	Supply Chain Sustainability Risk Management Process
SCRMP	Supply Chain Risk Management Process
SR	Sustainability Risk
TBL	Triple Bottom Line
VMI	Vendor Managed Inventory

DEDICATION

To my sweet brother

Piyya Muhammad Sami-ul-Shan

CHAPTER ONE

INTRODUCTION, RESEARCH OBJECTIVES, SCOPE AND STRUCTURE OF THESIS

The purpose of this thesis is to explore the phenomenon of sustainability risk in the context of the UK fashion industry and to design a supply chain sustainability risk management typology which can help the supply chains of the UK fashion industry to manage their sustainability risk effectively. The researcher's personal experience of the garment industry, family background and previous education were the main motivational factors to explore issues from a risk and sustainability perspective in the UK fashion industry context.

The researcher is a Pakistani national and the Pakistani textile and clothing industry became famous all over the world due to its vertical integration, cheap but highly skilled labour, availability of raw materials and quality of its output. However, the industry has diminished significantly due to energy crises, water shortages and changing priorities of farmers and relevant stakeholders, so it is now known as a sun-set sector in the economy. From a sustainability and risk perspective, the researcher has witnessed how labour and other natural resources were exploited and misused while serving international retailers, mostly in the US and Europe, as well as appalling working conditions in different mills (spinning, waving and dyeing). A best friend died at the age of 35 due to lung and kidney failure caused by poor working conditions in a spinning mill, leaving two children and a wife behind.

Further, the researcher's father is a farmer and the whole family is linked to this sector. Therefore, the researcher has seen the extensive use of chemicals and pesticides, lack of a proper market and the distribution process for cotton and other outputs. Further, the researcher has seen clothing and textile factories on fire, use of child labour, underpaid workers, workforce discrimination, building collapse and dying workers. Such incidents are never ending even today; it is very common to hear news about building collapse, fires, child labour and exploitation of resources. Particular examples are fires at clothing and textile factories in Karachi, Lahore and Faisalabad in Pakistan and a fire at Rana

Plaza in Bangladesh. After every catastrophic event, like those above, corrective actions are taken and hopes are raised that things will change, but the pace of change is very slow.

After moving to the UK, the researcher came across various sustainability initiatives and claims made by the UK fashion retailers, for example, Marks and Spencer's *plan A&B* and sustainability campaign '*look behind the label*'; further, sustainability integration efforts such as fair trade, organic products, fairly sourced, sustainability codes of conduct, regulations on chemical use, use of child labour and international code of working ethics in the garment industry etc. Despite these sustainability initiatives of the UK fashion industry, the continued occurrence of catastrophic events such as Rana Plaza further created curiosity and ultimately a passion for this research.

Another motive to do research on sustainability and the garment industry was based upon taking a corporate social responsibility (CSR) module during a Master's degree at the University of Hull and doing a dissertation on a systematic literature review of the opportunities for environmentally sustainable supply chains. The researcher learned in the CSR module that stakeholders are many and should be part of decision making and businesses have moral responsibility to look after the stakeholders and adhere to the societal values. However, the MSc dissertation findings made it abundantly clear that while sustainability initiatives will increase initial costs, outcomes in the long term will bring benefits for both businesses and society. However, businesses are hesitant to take sustainability initiatives partly due to lack of knowledge, resources and initial costs, etc.

Further, due to advancements in information and communication technologies, consumers are aware of the social and environmental impact of the products and services they are buying and consuming. This is particularly true in industrial sectors such as clothing, which has a high environmental and social impact and is under intense pressure from multiple stakeholders to balance between social, environmental and economic needs. Also, there is an acknowledgement that a business is as good as its supply chain partners and a firm will not only be held responsible for its own actions instead the actions of any of its partner in the supply chain. Therefore, pressures are

mounting on businesses to manage the sustainability impact of their supply chain operations.

The researcher started his PhD journey on a research project based upon sustainability in the UK clothing industry with a critical review of the extant literature, and found that supply chain risk management is an important issue in modern supply chains which are operating on time based competition, short product life-cycle, and an unpredictable and volatile demand situation, such as fashion industry supply chains. Further, he noted supply chain trends such as outsourcing, off-shore manufacturing, globalisation and increase demand for on time deliveries. Similarly, supply chain structures and philosophies such as lean and just-in-time (JIT) have been introduced with emphasis on reducing costs, buffers and redundancies to streamline operations. These trends coupled with manmade and natural disasters such as wars, terrorist attacks, earthquakes and tsunamis have increased supply chain vulnerability and operational disruptions, consequently, making supply chain risk management an important issue and a critical challenge to survive and compete globally.

On the other hand, literature reported that businesses are experiencing a large number of new types of risks. More importantly, the frequency of these risks has increased dramatically and the business recovery of risk impacted operations is reported as not usual. Furthermore, global spread of businesses has made supply chains longer and extended and increased their complexity and decreased visibility and control, leading to increased risks.

Similarly, fashion supply chain management has attracted a high level of interest from supply chain researchers, mainly due to the discipline's increasingly dynamic, complex and volatile nature, including a high level of demand unpredictability, volatility, short product life-cycle, shifts in power mechanisms, globalisation, use of third parties and sub-contractors and sustainability and risk issues. In particular, the UK fashion industry has declined massively and shrunk in size in the last four decades. According to most commentators, the common reasons are the strategic decisions of the UK retailers to outsource and off-shore manufacturing, import penetration, abolition of trade

agreements and operating costs in the UK. However, the UK fashion industry still shows fierce competition and retail concentration.

It also appears that existing risk management strategies are not appropriate for fashion supply chains. Existing supply chain risk management strategies were designed for routine and repeated activities or operations and based upon the assumptions of a stable environment. Further, none of the existing supply chain risk management frameworks has been designed in the context of the UK fashion industry. Similarly, the sustainability debate also seems inappropriate for the fashion business model. For example, sustainability suggests life cycle extension, resource preservation and conservation, re-use and re-manufacture, reverse logistics etc, whereas, fashion clothing is made for a short life cycle, more consumption and increased appetite to replenish them frequently. Thus, risk management and sustainability management became interesting areas of research for the researcher in the context of the UK fashion industry.

Risk and sustainability are widely discussed concepts in SCM but in isolated and standalone fashion. The combined discussion of both has only recently gained coverage in the literature and as yet there is no consensus on what sustainability risk is, how it can be defined, how it impacts the operational performance of supply chains and how it can be managed. Moreover, little is known about how sustainability issues manifest themselves as risks. Finally, the lack of a sustainability risk conceptualisation hinders the development of a sustainability risk management framework which is critical to enable global fashion supply chains to survive and compete in a volatile and demand-driven sector such as the UK fashion industry.

Therefore, the main objective of this research is to explore the phenomenon of sustainability risk, its impact on supply chain operational performance and to design a typology for supply chain sustainability risk management within the UK fashion industry.

Following are the specific research objectives:

- ❖ To define and explore the relationship between supply chain risk and sustainability.

❖ To explore the supply chain sustainability risk management strategies of the companies operating in the UK fashion industry.

❖ To identify factors which restrict the companies in the UK fashion industry from managing their supply chain sustainability risk.

❖ To examine the impact of supply chain sustainability risk on the operational performance of the companies in the UK fashion industry.

❖ To develop a typology or set of strategies which can help the companies in the UK fashion industry to manage their supply chain sustainability risk.

This chapter presents the contextual background and scope of this research and sets out the structure of the thesis by summarising each chapter.

Chapter Two addresses three subject areas: fashion supply chains, risk and sustainability management. This chapter, first, sheds light on the emergence of the Supply Chain Management concept and main areas of discussion in the discipline. The major focus is on fashion supply chains, with a review of literature on fashion supply chain characteristics and ongoing areas of concern such as globalisation of fashion supply chains, power dynamics and paradoxes in information sharing, relationships, collaboration and integration with supply chain partners. Chapter Two further critically reviews literature on sustainability. It provides definitions of sustainability and sheds light on current controversies surrounding sustainability debate.

Chapter Two also critically reviews literature on supply chain risk management. The most important area in this chapter is a discussion of sustainability risk as a growing area of interest but one that lacks conceptual understanding, which is necessary to operationalising and materialising the concept.

Chapter Three addresses the selection and justification of an appropriate research methodology to answer the research questions. The complexity involved, lack of knowledge and unclear boundaries of the phenomenon of sustainability risk made this research exploratory in nature. As the purpose of this inquiry was to explore the phenomenon of sustainability risk rather than measuring or testing it, an inductive qualitative approach was adapted. Semi-structured interviews were employed for data collection and further supported by documents and observations. A narrative analysis

method informed by social-constructionism was adopted to interpret findings and to create new knowledge.

Chapter Four provides within-case analysis, where individual cases are presented and transcribed data is analysed in terms of sustainability risk definition, process, challenges and suggestions for ways to manage supply chain sustainability risk. Within-case analysis sets the scene for cross-case analysis.

Chapter Five presents cross-case analysis, where different cases are compared based upon their similarities, differences and pattern matching. Common strategies for supply chain sustainability risk management at the case companies are explored and seven major findings identified: Organisational Culture, Growth of Fast Fashion, Organisational Resources, Management Structure, Safeguarding Brand Reputation, Stimulator of Innovation and Co-opetition.

Chapter Six compares the major findings with extant literature to enable analytical generalisations, propositions and theory building. Chapter Six also develops a supply chain sustainability risk management typology for the case companies. This is followed by Chapter Seven which includes a thesis summary, conclusions, theoretical and managerial contributions of this research. Limitations of this research are also acknowledged in this chapter and future research directions are identified.

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

This chapter reviews existing literature and provides background knowledge in three areas that this research project explores: fashion supply chains, sustainability management and risk management. Fashion supply chain management attracted a high level of interest from supply chain researchers (Christopher et al. 2004; Brun and Castelli, 2008; Barnes and Lea-Greenwood, 2006 and 2010; Perry et al. 2015) mainly due to the discipline's increasingly dynamic, complex and volatile nature. A high level of demand unpredictability and volatility, shift in power mechanisms in the market, globalisation, outsourcing and supply chain decisions are some of the factors contributing to the complexity and dynamism in this area and subsequently leading researchers to explore their implications in supply chain management (Brun and Castelli, 2008; Fernie and Perry, 2011). This section will address the above issues in fashion supply chains and their implications for the UK fashion industry.

Before this research proceeds to discussion on fashion supply chains, sustainability management and risk management, the researcher will first shed light on the concept of supply chain management for the reader to build a basic understanding about the discipline. Therefore, section 2.2 sheds light on the emergence and nature of the concept of supply chain management. Further, it is discussed that supply chain relationships, integration and information technology play an important role in fashion supply chains' survival and competitiveness in a volatile and demand driven sector. Further, discussion follows on the theoretical anchor of this research, dynamic capabilities. After a critical discussion of existing literature, emerging knowledge gaps are highlighted, leading to the formulation of the research questions.

2.2 SUPPLY CHAIN MANAGEMENT: HISTORY AND CONCEPT

Since the appearance of the concept of supply chain management (SCM) in 1982 (Oliver and Webber, 1982) researchers have made distinctions between logistics and SCM. The exact history of the concept of SCM is still unclear but is associated with Forrester (1958), who described dynamic responses to changes in demand in supply chain

situations. He highlighted distortion in demand patterns stimulated by the complexities situated in transferring demand from end users to the chain of supply. The emergence of the SCM concept can also be related to the Total Cost approach in logistics and distribution (Heckert and Miner, 1953). The *system theory* which necessitates aggregated analysis of a system's constituent parts in order to completely understand the behaviour of complex systems (Boulding, 1956) also added to the emergence of the supply chain concept. The system theory and earlier concepts reflected that in order to enhance system effectiveness, the unit of analysis should be the whole system; focusing on a single entity cannot optimise performance, as it would be constrained by the limitations inherent in the whole system (Lee, 2000). However, the concept of Just-In-Time introduced in the 1980s is still considered as the main origin of the concept of SCM (Houlihan, 1985; Oliver and Webber, 1982).

SCM is widely related to Logistics and many researchers have made fine distinctions between the two. For example, Mills et al. (2004) argued that logistics literature in essence considers rational co-operation between suppliers, buyers and service providers in order to find optimal solutions for inventory, transportation, information flows and different transactions, whereas SCM presumes behavioural and political dimensions of power, trust, conflict and dependencies between these parties. Larson and Halldorsson's (2004) analysis of logistics and supply SCM (Table 1) identified four views of relationships between logistics and SCM:

Table 1: Perspectives on Logistics versus Supply Chain Management

Perception	Description
Traditionalist	The traditionalists position SCM within logistics and view SCM as 'Logistics outside the firm'.
Re-labelling	This approach believes SCM a rename of logistics. They consider logistics is now SCM and further supply chain and logistics network are synonymous
Unionist	This perspective view logistics as part of SCM and further logistics is a function/process within SCM. Processes in SCM are logistics, purchasing, marketing and operations management, etc.
Inter-section	This approach contradicts the view that SCM is a sub-set of logistics and believes that SCM is broad strategy which cuts across business processes both, within and through the channels.

Source: compiled from Larson and Halldorsson (2004)

Table 1 shows that SCM deals with the management of key functions/processes both within and across channels. Therefore, it can be argued that SCM is more than a rename or merely a logistics function; a unionist approach seems more appropriate. The unionist stance further reinforces Stock and Lambert's (2001) view that SCM is the management of eight key business processes: demand management, procurement, manufacturing flow management, customer relationship management, customer service management, order fulfilment, product development and commercialisation and returns.

Cooper et al. (1997) further adopted a unionist approach, arguing the need for business processes integration which goes beyond logistics; for example, in new product development where internal processes and external organisations are integrated and coordinate to reduce time-to-market. Further, from the definition of logistics by the Council of Supply Chain Management Professionals (2008), it is evident that logistics is part of SCM, as it states that, "*Logistics is that part of the supply chain process that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from the point of origin to the point of consumption in order to meet customer requirements*". Christopher (2010) highlighted that a common characteristic of SCM is that it brings independent partners to coordinate their activities for value creation and defined SCM as "*the management of upstream and*

downstream relationships with suppliers and customers in order to create enhanced value in the final market place at less cost to the supply chain as a whole".

Supply chain researchers have presented different perspectives in defining SCM. Vaaland and Heide (2007) highlighted three perspectives used in SCM definitions. First, actor-oriented definitions focus on managing material flow from end to end; Chen and Paulraj (2004) reflected this orientation towards logistics activities. Second, relation-oriented definitions focus on managing supply chain partner relationships, coordination and collaboration. The last perspective is process-oriented definitions, which focus on managing supply chain processes via virtual links (Lambert et al. 1998). Commenting upon the above perspectives, Vaaland and Heide (2007) maintained that SCM, as a whole, should encompass all three perspectives.

In sum, SCM necessitates the integration of all value-adding activities into seamless processes and reflects a move away from the traditional vertical hierarchy-based organisation with a command and control approach towards a more process-oriented, integrative approach based on close relationships and coordination among supply chain partners and customers (Van Hoek et al. 1998). Therefore, the following section 2.2.1 addresses the importance of supply chain relationships and integration which are further facilitated by technological advancements, especially information technology.

2.2.1 Supply Chain Relationships

The supply chain philosophy of just-in-time production, manufacturing and purchasing has introduced a new proposition of buyer-supplier relationship based largely on co-operative partnerships instead of an independent and adversarial approach (Christopher, 2010). Literature also suggested that many organisations are constantly developing long term strategic, co-operative and collaborative relationships with networks of supply chain partners in an effort to minimise risks, be sustainable, reduce waste, meet volatile and unpredictable demand, fulfil orders, manage inventory, enhance visibility, provide superior customer value and reduce supply chain costs (Porter, 2008; Cooper et al. 1997; Mlaker Kač et al. 2015; Ramanathan and Gunasekaran, 2014). The nature of partnership arrangements varies considerably depending upon the nature of the industry, organisation, technology, product and

market; these could range from flexibly defined, loose strategic initiatives to formal contracts but may also encompass the provision of a mutual risk and reward system (Mentzer et al. 2001; Ross, 2013).

Ploetner and Ehret (2006: 6) and Ramanathan and Gunasekaran (2014) argued that although partnerships rely on mutual agreements and a win-win approach, they are built on enlightened self-interest and founded on ambition for performance and profit. Consequently, partnerships feature both competition and collaboration, referred to as coopetition; "*even if they are successful in expanding the value-pie, there may remain a conflict in portioning the pie*". Brouthers et al. (1995) and Ross (2013) proposed some criteria in order to select an appropriate partner, such as complementary skills, cooperative cultures, compatible goals and commensurate levels risk. Literature also mentions the criteria of senior management commitment, similar management philosophies, frequent performance feedback, clearly defined and effective goals, thorough planning, effective management teams and effective communication (Wigley and Provelengiou, 2011).

However, SCM literature also warns of the potential risks of such long term relationships with few partners due to the risks of dependency and locked-in effect (Smeltzer and Siferd, 1998; Lonsdale, 1999; Pilling and Zhang, 1992; Lonsdale, 2001). From a risk management perspective, it is disastrous to rely heavily on one or a few suppliers or service providers, especially if they are unable to improve or meet the demanding expectations of a highly dynamic and volatile market. Highlighting the dynamics of power in supply chain relationships, researchers (Cox, 1999; Cox et al. 2001; Mena et al. 2013; Kim et al. 2011) warned that integration and close relationships might put a weak partner into an influential position and further, in order to understand the supply chain strategically and operationally, practitioners must properly comprehend the power structures that govern relationships in their supply chains. On the other hand, sustainability literature follows the SC relationship logic to avoid unsustainable practices, achieve greater visibility, and eliminate hazardous materials from the supply chain, for sustainable decision making and initiatives (Grant et al. 2015).

2.2.2 Supply Chain Integration

The origin of integration can be found in process reengineering literature, which focuses on integration of operations between suppliers and customers for greater value (Burgess, 1998). In the current dynamic business environment, the ability to integrate processes across the functional boundaries of a firm is considered as a key to competitive advantage (Danese et al. 2013). For supply chain integration, it is important for the firms in the supply chain to share a common goal and work in the same direction for its achievement (Christopher, 2010). Research agrees that most of the opportunities lie at the interface between SC partners and further the performance of SC depends on how effectively and efficiently members work together instead of how well they perform individually. The importance of the previous argument is further increased in highly volatile and dynamic markets and industries such as the fashion industry (Christopher, 2010).

Flynn et al. (2010) defined SCI as "*the degree to which a manufacturer strategically collaborates with its supply chain partners and collaboratively manages intra and inter-organisation processes*". Researchers have also defined and described various forms of integration but broadly divided them into two types; internal and external integration and it is believed that the former leads to the latter (Danese et al. 2013). Internal integration is defined as "*the degree to which functions within a firm work together in a cooperative manner, interact and collaborate in order to solve conflicts and arrive at mutually acceptable outcomes*" (Danese et al. 2013:127). External integration is "*the degree to which a manufacturer develops collaborative relationships and intimacy, exchanges information and jointly plans and coordinates supply chain activities with both suppliers and customers*" (ibid, p. 126).

SCI enables a supply chain to react quickly to unpredictable changes in a dynamic business environment (Lee et al. 2000; Lee, 2000; Danese et al. 2013). It facilitates planning and forecasting, managing inventory, reducing lead times, managing risks and uncertainties, elimination of repetitive tasks and non-value adding activities, increasing visibility and reducing demand uncertainty, consistent planning across the supply chain, enhanced quality and productivity and higher performance in the long run (Christopher

and Lee, 2004; Cooper et al. 1997; Christopher, 2010). However, SCI necessitates information sharing from end-to-end. The importance of this is highlighted by the well-known Bullwhip Effect, whereby amplification of demand variations up-stream in the chain leads to excessive inventory and wastage, delays and shortages in some places and surpluses in others (Lee et al. 1997).

Technological advancements have a dramatic impact in facilitating SCI (Prajogo and Olhager, 2012; Gunasekaran and Ngai, 2004; Huo, 2012; Christopher, 2010). Some of the technologies that helped SCI are bar codes, radio frequency identification (RFID), warehouses controlled by automatically monitored vehicles, vender managed inventory (VMI), and collaborative planning forecasting and replenishment (CPFR) that streamlined processes and made flows seamless (Birtwistle et al. 2003; Christopher, 2010). Literature further asserts the necessity of information sharing and visibility from end-to-end for an integrated supply chain.

Notwithstanding the claimed benefits and advantages of SCI, Poirier and Quinn (2003) argued that, in practice, it is extremely hard to achieve an efficient response to customers through process integration across organisational boundaries. They reported that most organisations are still at the internal integration stage, while only 10% of the companies in their study had progressed significantly towards external integration. The main reasons were unwillingness to share information, cost, lack of technology and knowledge. Dyer et al. (1998) argued that focal firm in a supply chain needs to be strategic for supplier management in deciding from a large supply base for integration purpose. They further stressed the importance of joint decision making for supply and demand decision in an integrated supply chain; otherwise, it will raise problems of bargaining power with one or more dominant partners, inefficient distribution of information and reduced cooperation between supply chain partners.

Another main constraint to SCI is the network complexity. Modern supply chains comprise complex relationships between organisations and they rarely demonstrate seamless flow. The structural and relational complexity involved in networks further creates difficulty in the coordination, accuracy and timeliness of information, which are essential for SCI. Therefore, simplicity is preferred for better quality, controlled

operational costs, maximum responsiveness and synchronisation (Hoole, 2005; Christopher et al. 2004). Other challenges of SCI can be attributed to globalisation; trade liberalisation, outsourcing and motives for lower unit costs and supply chain efficiencies have made supply networks global and highly fragmented (Christopher et al. 2004; Harland et al. 2003). Substantial geographical distances will not only increase lead times and transportation costs but also inhibit effective and efficient real time communication. Moving to transnational markets will also raise issues of culture, language, local infrastructure, skills, supplier quality and technology up gradation and business practices, therefore, making the SCI concept difficult if not impossible to adapt and manage (Christopher, 2010). Furthermore, in global supply chains, loss of control, reduced visibility and increased uncertainty will undermine seamless flows. Indeed, chances for sustainability risk will increase substantially because the processes and performance of supply chain partners are no longer considered as belonging to a particular firm but rather to the supply chain as a whole (Grant et al. 2013).

2.2.3 Role of Information Technology in SCM

SCM implies the integration of cross-functional and inter-organisational processes for better coordination and efficient flows of goods, services and information to the final customer (Christopher and Peck, 2004). Auramo et al. (2005) argued that IT is more than just a computer system for information sharing; rather, it is an inter-organisational system which facilitates information sharing as well as helping to create and manipulate different aspects of information across organisational boundaries. Research agrees that having IT systems in place and their effective and efficient utilisation in SC helps in reducing costs, increasing performance and SC efficiency, inventory management, better planning and forecasting, enhanced cooperation and collaboration, order tracking and delivery management, etc. (Lancioni et al. 2003; Auramo et al. 2005).

In terms of market volatility and demand unpredictability, Cachon and Fisher (2000) proposed that in unknown demand situations such as fashion, information sharing can yield significant returns and alternatively Raghunathan (2001) anticipated that in a situation where demand is predictable and fairly stable and where past demand patterns can be used to form reasonably accurate demand forecast, information sharing would be

less beneficial. However, researchers (Evans et al. 1993; Hendricks et al. 2007; Heim and Peng 2010; Li et al. 2009) also maintained that sharing inventory and demand information upstream in the SC can provide additional benefits such as cost management, efficiency enhancement and performance improvements.

Vendor managed inventory (VMI) is an example of a process-related advantage that IT can bring. VMI is a collaborative business initiative where suppliers are authorised to manage the buyer's inventory of SKUs. VMI integrates operations between suppliers and buyers through business process integration and information sharing. VMI enables the purchaser or customer to enhance purchasing or buying process efficiency and at the same time provides real time information to the supplier regarding demand and inventory levels at the customer's place (Soto-Acosta and Meroño-Cerdan, 2009).
According to Lancioni et al. (2003) firms' reluctance and unwillingness to share data with supply chain partners due to perceived threat to competitive advantage creates inefficiencies. However, the introduction of systems such as Just-in-Time, electronic data interchange and VMI convinced firms in the supply chain to share information and integrate IT, as the benefits outweighed the losses incurred in doing so.

Soto-Acosta and Meroño-Cerdan (2009) argued that having an IT system in place does not guarantee innovation and supply chain efficiency. Benefitting from IT systems requires an IT-oriented culture, back-end capabilities and front-end resources, top management support, supply chain trust and alignment of strategies, reward systems and supply chain partners' willingness to share information (Soto-Acosta and Meroño-Cerdan, 2009; Christopher and Peck, 2004). Otherwise, as Cachon and Fisher (2000) found, sharing of demand and inventory information by integrating IT system between suppliers and retailers does not produce the intended outcomes.

Having established a basic understanding about SCM, in the following section, Dynamic Capabilities (DC) is presented, which has recently come to be viewed as a mechanism for sustaining competitive advantage for the total supply chain. This seems an appropriate theoretical perspective for this research, as the main purpose of supply chain management is to create value and sustain it.

2.3 DYNAMIC CAPABILITIES

Dynamic Capabilities (DC) is an extended and developed theory based on the Resource-Based View (RBV) theory, for competitive and sustained advantage. Therefore, it is imperative to shed light on RBV theory before discussing DC. Originally coined by Wernerfelt (1984), RBV theory holds that imperfectly mobile and heterogeneously distributed resources controlled by a firm will lead to sustainable competitive advantage. Since its emergence, RBV has been widely criticised for number of reasons. For example, it is tautological from a valuable resource perspective because competitors can configure resources in a similar fashion, which can yield similar value for them; therefore, they are not a competitive source. Further, the product and market role is not well articulated within RBV and from conceptualisation and operationalisation there are limited perspectives on the implications of the approach (Priem and Butler, 2001). Furthermore, under the basic assumption of RBV, firms are considered as independent entities having full control of their respective resources. These assumptions overlooked the supply chain or network perspective while providing only a partial account of an individual firm (Lavie, 2007).

Similarly, Hart (1995: 986) criticised that the RBV theory systematically ignored the constraints imposed by the natural environment and further proposed a natural resource based view theory, "*a theory of competitive advantage based upon the firm's relationship to the natural environment*". He further argued that environmental degradation and natural resource depletion are causing higher magnitude risks to organisations and irreversible losses to the plant's ecological system. Therefore, the resource-based view must integrate environment (natural resources) for a firm's sustainable competitive advantage. He further proposed (Table 2) three strategic capabilities: pollution prevention, product stewardship and sustainable development and three key resources; continuous improvement, stakeholders' integration and shared vision can enable a firm to get competitive advantage in the form of lower costs, pre-empt competitors and better position the firm in the future.

Table 2: A Natural Resource Based View: Conceptual Framework

Strategic Capability	Environmental Driving Force	Key Resources	Competitive Advantage
Pollution Prevention	Minimising emissions, effluents and waste	Continuous improvement	Lower costs
Product Stewardship	Minimising life-cycle cost of products	Stakeholder integration	Preempt competitors
Sustainable Development	Minimising environmental burden of firm growth and development	Shared vision	Future position

Source: Hart (1995: 992)

Since the 1990s, fierce competition and market volatility have driven firms to constantly adapt, reconfigure, renew and recreate resources and capabilities according to the competitive environment and this drive is captured in the notion of dynamic capabilities (Teece et al. 1992; Teece et al. 1997; Wang and Ahmed, 2007; Eisenhardt and Martin, 2000). Dynamic refers to the "*capacity to renew competences so as to achieve congruence with the changing business environment*", whereas Capability refers to the "*strategic management of a firm's resources as well as functional competencies to respond to a rapidly changing business environment*" (Teece et al. 1997: 515). DC, as defined by Teece et al. (1997:516) is a "*firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments*".

In contrast to RBV and in line with NRBV, the DC view incorporates environmental changes to drive competitive and sustainable advantage (Wang and Ahmed, 2007). Further, the DC view integrates market dynamisms of market speed and unpredictable changes affecting business ability to compete in the market place. Eisenhardt and Martin (2000) argued that DC are strategic and organisational routines by which firms attain new resource configuration as markets emerge, collide, split, evolve and die and further enable firms to change processes in response to market changes.

Eisenhardt and Martin's (2000) account of DC provides a convincing logic for applying DC as the theoretical perspective of this study. According to them, DC exhibits

distinctive advantages in two types of markets (Table 3). First, moderately dynamic markets, where changes occur frequently but follow linear and predictable paths and where industry structures are fairly stable. Firms in such industries rely heavily on existing knowledge and know-how and a problem solving approach is usually followed for the design of processes and activities. Second, highly volatile markets, such as fashion, where changes are less predictable and non-linear, market boundaries are blurred and industry structures are ambiguous and constantly shifting.

Table 3: Characteristics of Moderately Dynamic and High-Velocity Markets

	Moderately Dynamic Markets	High Velocity Markets
Market Definition	Stable industry structure, defined boundaries, clear business models, identifiable players, linear and predictable change,	Ambiguous industry structure, blurred boundaries, fluid business models, ambiguous and shifting players, non-liner and unpredictable change,
Pattern	Detailed, analytic routines that rely extensively on existing knowledge	Simple, experiential routines that rely on newly created knowledge specific to the situation
Execution	Linear	iterative
Stable	yes	No
Outcome	Predictable	Unpredictable
Key to effective evolution	Frequent, nearby variation	Carefully managed selection

Source: Eisenhardt and Martin (2000: 1115)

Therefore, the major focus of DC is on rapidly creating new-market knowledge, developing capabilities according to the changes in the firm's internal and external environment and respond to them swiftly and timely to get and sustain competitive advantage.

2.4 FASHION SUPPLY CHAINS

According to Christopher et al. (2004:367), "*fashion is a broad term that typically encompasses any product or market where there is the element of style that is likely to be short lived*". This definition differentiates fashion items from basics on the grounds of short life cycle, which implies that fashion articles must be available with minimum error in terms of volume and product mix. As the product life cycle is short, with unsold

items the retailer will incur the risks of costs of extra inventory and consequently have to mark down.

Risks and sustainability issues: unpredictable and volatile demand, a short product life-cycle, and increased use of highly complex global supply networks cause greater exposure to risks for fashion supply chains. Christopher and Lee (2001) and Masson et al (2007) described three types of risks in fashion supply chains. First, financial risks could arise from product obsolescence, stock-outs and mark downs, which highlights the importance of having the right product at the right time. Second, chaos risks can arise from second-guessing, overreactions, unnecessary interventions, mistrust between supply chain partners and distorted information. Finally, market risks can arise from failure to identify market signals and not reacting quickly enough to meet them, which highlights the importance of agility, responsiveness and being market sensitive in order to survive and compete in a volatile and unpredictable market place. Further, FSCs are increasingly global in nature, with manufacturing in fragmented small and medium sized plants mainly in Asia and retail concentration in Europe, which requires movement of products and materials around the world. This results in high concerns and pressure from a sustainability perspective (Caniato et al. 2012; Perry et al. 2015). This is due to heavy reliance upon natural resources such as water, use of chemicals, pesticides and fertilisers in production, high use of energy in manufacturing, environmental pollution and emissions during distribution and transportation (Caniato et al. 2012; De Brito et al. 2008). Similarly, researchers (Walker, 2011; Jones and Hayes, 2004; Taplin, 2006) highlighted sustainability and risk issues of globalisation, outsourcing and off-shore manufacturing, worse weather conditions, environmental and logistical issues in the context of the UK fashion industry. Caniato et al. (2012) maintained that the industry's environmental impact is particularly high in relation to its global volume, as it accounts for 4% of world's exports and employs 9.3% of the workforce in the world. On the other hand, it is yet not clear what the current sustainability and risk issues are in the UK fashion industry and how the industry is managing them.

Technological innovations in garments supply chains: traditionally, the clothing and fashion industry was regarded as low-tech, less innovative and labour intensive with low

barriers to entry (Taplin, 2006). However, fashion supply chains are experiencing a high level of innovation throughout, from production to supply, manufacturing, distribution, warehousing and retail. Recent innovations, such as technological advances, product life cycle management, 3D cutters and information sharing technologies demonstrate the sector's response to agility and responsiveness as a pre-requisite to compete in volatile markets (Christopher et al. 2004; Fernie and Azuma, 2004). Forza and Vinelli (1997) further highlighted the use of modular and flexible production systems, simulation of clothing tests, digital designs, and the possibility of digital transfer of designs from geographically distant locations to machines and exchange between machines, new methods of dying (in advanced phases rather than dying at start) and weaving, use of computer aided design and manufacturing (CAD-CAM) systems and colouring processes with enhanced control of chemists. Therefore, it is vital to be innovative in fashion supply chains to survive and compete (Christopher et al. 2004; Forza and Vinelli, 1997). Similarly, Taplin (2006) and Jones and Hayes (2004) argued that technological up-gradation and mechanisation were the response of the UK fashion industry to the import penetration.

New product and process development: new product and process development reflects innovative response to meet fast changing fashion requirements. Sull and Turconi (2008:8) highlighted the idea of shared situation awareness, *"a team's ability to recognize a pattern in a fluid situation and use it to anticipate what might happen next"* to compete in a highly complex, competitive and rapidly changing marketplace such as fashion. They cited the example of fashion retailer Zara, which maintains the highest level of information sharing, communication, internal and external integration and the use of modern technology. Barnes et al. (2006) mentioned innovations such as the elimination of certain processes and functions, shorter production runs, perhaps 500 units, logistics innovations, reduced shipping times, and use of air freight for greater speed. Taplin (2006) shed light on innovative production systems, technological changes, use of just-in-time and quick response techniques, use of computer techniques for design, cutting and finishing. The literature also mentions automation as a major trend in the garment industry, where manufacturers are substituting capital for labour

to save cost, reduce lead times, and to enhance agility and responsiveness (Ghemawat et al. 2006; Christopher et al. 2004; Masson et al. 2007).

Fashion characteristics: Christopher et al. (2004) and Fernie and Azuma (2004) highlighted some main characteristics of fashion items: short life-cycle, high demand volatility, low predictability and high impulse buying. From a life-cycle perspective, fashion garments' selling period is very short which is measured in months or weeks rather than the traditional summer/winter and spring/autumn selling period. Therefore, the availability of the right product with the right mix is essential to drive premiums. This concept is also captured in the notion of fulfilment in logistics and distribution: "*Fulfilment refers to customer service processes involving distribution*" (Croom, 2005:65).

Fulfilment strategy is determined by the market demand profile of a company's' product (Fisher, 1997). Fisher (1997) divided demand profile into two types, stable and volatile, based upon product types, functional and innovative. He proposed that, based upon stable and volatile demand profiles, there are two forms of supply chain, efficient and responsive, which are similar to lean and agile supply chains. In order to design a fulfilment strategy, it is imperative to align efficient supply chains to functional demand patterns and responsive supply chains to innovative demand patrons. This argument is further elaborated by Croom (2005), who maintained that functional fulfilment focuses on cost minimisation. For example, for basic garments orders are placed in bulk to get economies of scale and demand patterns are relatively stable and easy to predict based upon trends from previous sales data (Christopher et al. 2004). In contrast, responsive fulfilment focuses on responsive customer service. For example, for fashion garments, orders are placed in smaller quantities to drive premium and demand is unpredictable and difficult to forecast (Christopher et al. 2004). Slack and Lewis (2008) further elaborated Fisher's demand profile (Figure 1) to make it more explicit by highlighting product and supply chain characteristics which necessitate the correct match in product nature and supply chain strategy:

Figure 1: Demand Profile and Supply Chain Strategy

		Functional Products (e.g. continuity products)	Innovative Products (e.g. Seasonal or promotional)
Efficient Supply Chain	Low Cost......High Utilisation......Min. Inventory......Low cost suppliers	Match	Mismatch
Responsive Supply Chain	Fast response......Low T/P Time......Deployed Inventory......Flexible Suppliers	Mismatch	Match

Predictable...Unpredictable
Few Changes...Many Changes
Low Variety...High Variety
Price Stable..Price mark downs
Long lead time..Short lead time
Low Margin..High margin

Source: adopted from Slack and Lewis (2008: 130)

Unpredictable demand of fashion products is mainly derived from what is going on, on the catwalk, in the high street and clubs and worn by fashion icons (Barnes and Lea-Greenwood, 2006 and 2010). Christopher and Towill (2001) advocated that fashion companies should treat base demand; demand for basic garments, differently from the surge demand, demand for fashion garments. They further suggested that companies can source base demand from low cost countries while surge demand can be topped up locally or near to the market. Their argument suggested the use of multiple sourcing strategy based upon the nature of the product. They suggested to the manufacturers that they can use either separate production lines or slack periods to produce base stock. However, their suggestions ignored the feasibility of such recommendations and potential impact on manufacturers' efficiency.

In fashion manufacturing, due to the short product life cycle and requirements for minimum stock keeping units (SKU) but in large varieties, short production runs are preferred. This further imposes pressures on manufacturers for flexible manufacturing, cost reduction and technology up-gradation to be able to meet retailers' and customers' demand on time with minimum cost and lead times (Christopher et al. 2004; Barnes

and Lea-Greenwood, 2006). This fashion retail-buying trend on the one hand introduced a mid-season purchasing trend; on the other it helped fashion retailers to constantly refresh the store and ensure consumer visits are more frequent.

The impulse buying characteristics of fashion items highlights the importance of availability of fashion garments (on trend) because most of the buying decisions by fashion purchasers are made at the point of purchase and availability of on-trend fashion articles will lead to increased sales; otherwise retailers might run the risks of customer dissatisfaction but still be running costly retail operations such as bills, rent and overhead costs (Flanagan, 2005).

Due to the highly competitive nature of the market, retail concentration and over capacity (Christopher et al. 2004; Brun and Castelli, 2008) the success of fashion retailers depends upon their ability to increase their market sensitivity. This in part can be achieved by designing a market-oriented business strategy, increasing ability to respond to market signals, and designing a demand-driven supply chain (Jüttner et al. 2007; Roh, 2009; Fernie et al. 2015). These factors are necessary in any modern supply chain, but vital in the fashion sector, in order to survive (Christopher et al. 2004). A good example of how to be demand driven and to enhance market sensitivity while being flexible is the fashion retailer Zara. On average, UK fashion retailers commit 60% of their buying budget about six months before the season, while Zara only commits 20% six months ahead, which increases to 50% at the start of the season, giving 50% for during the season based upon trends and consumer acceptance (Birtwistle et al. 2003). This strategy enables the retailer to spot the latest fashion trends, translate them into product and make them available on the retail shelf in the shortest possible time, leading to reduction in cycle time, responsiveness, demand driven while also ensuring product quality and innovative design (Christopher et al. 2004; Barnes and Lea-Greenwood 2006; Mendes, 2011; Jüttner et al. 2007; Roh, 2009; Fernie et al. 2015).

The literature (Abernathy et al. 1999 and Mintel, 2007) also highlighted the UK fashion industry characteristics such as a high level of retail concentration, over capacity and fierce competition. Researchers (Birtwistle et al. 2004; Christopher et al. 2004 and Barnes and Lea-Greenwood, 2006) further highlighted the UK fashion industry

response to these challenges by continuous monitoring of fashion trends to identify new designs through fashion images, fashion makers and daily proximity to fashion markets, frequent introduction of new styles and many stock keeping units but in smaller quantities in one particular season, reducing pre-season buying and taking consumer based measure.

Management structure: literature placed a heavy emphasis on the management structure based upon close interfaces, integration and process alignment, responsive communication channels, flexible and overall collaborative. Bruce and Daly (2006) and Barnes and Lea-Greenwood (2006 and 2010) argued that close interfaces and internal integration particularly among buying, sourcing, merchandising and design teams are imperative to enable fast decision-making. They reported that, in fashion business merchandising is regarded as a separate activity, yet closely linked with all processes to ensure quick product availability on the retailer's shelf. Christopher and Towill (2001) highlighted the role of managers as change agents for internal and external supply chain coordination and for organisational agility and responsiveness. However, literature demonstrates controversies over integration especially vertical integration, in fashion supply chains. For example, Reve (1990) favoured the use of agreements, alliances and contracts instead of vertical integration, maintaining that the main issue in vertical integration is control rather than ownership and that ownership of capital will make it obsolescent due to new innovations and advancements. In contrast, Richardson (1996) favoured vertical integration and ownership for control and urged the need for new technology and resource acquisition for responsiveness. However, Richardson (1996) agreed with Reve (1990) on the major drawbacks of vertical integration such as management difficulties and reduced performance incentives and proposed a higher degree of coordination among supply chain partners, investment in information technology at each stage and integrated planning and decision making. Nevertheless, Dutta (2003) drew our attention to the fact that many companies do not yet have close interaction and collaboration and different functions are not in touch, despite sitting or being located very close to each other.

Information sharing, communication, collaboration and building relationships and partnerships in FSCs: in order to be demand driven and to reduce cycle time and speed

to market, various supply chain strategies have been suggested in the literature, such as postponement, switching production with information, integration, collaboration and information sharing with supply chain partners (Christopher et al. 2004). However, fashion defies the convention; instead of long-term relationships and cooperation, fashion supply chain operating mechanisms are largely based upon current market need and what can generate the highest margins by capturing demand on time. For example, Christopher et al. (2004) referred to supplier selection in the fashion supply chain as a *theatre play* and the focal firm as the *orchestrator* of the network, selecting the actor who fits best in that play and then selecting new actors for the next play according to their suitability. However, fashion supply chain literature also seems contradictory in suggesting long term partnering relationships. For instance, the above accounts mentioned short term and on-and-off relationships for greater variety, flexibility and responsiveness but Barnes and Lea-Greenwood (2006 and 2010) maintained that in fashion a more integrated and partner-led approach is needed from a retailer to work with a limited number of suppliers for responsiveness. However, they agreed that fashion requirements of less quantity and large variety and frequent shipments encourage fashion retailer to use a large number of suppliers; therefore, traditional alliances and partnering relationships seem not a way forward. Fernie and Azuma (2004) placed a special emphasis on partnering relationships for the successful implementation of quick response but cautioned that long term partnering relationships with a limited number of suppliers has potential to compromise firms' market orientation capabilities along with flexibility and responsiveness, which are necessary for a diverse and fast-moving fashion market. Further, Sheridan et al. (2006) hold that suppliers and retailers need to work in collaboration and in cross-functional teams to enhance customer satisfaction and increase value for all the partners.

Co-opetition in fashion supply chains: the above controversies in long-term collaborative and partnering relationships versus short-term relationships are also captured in a relatively new phenomenon in SCM known as coopetition. According to Dagnino and Padula (2002:5), "*co-opetition refers to a complex structure of firms' interdependence where cooperation and competition are simultaneously present and intertwined*". In essence, co-opetition strategy is based upon the idea that within inter-

firm interdependence, the processes of value creation and sharing take place, resulting in a partially convergent interest structure where both competition and cooperation are simultaneously present and interconnected. Cooperating but at the same competing enable firms to gain both common benefits for both exchange parties and private benefits for the individual parties (Kim et al. 2013). Mandják and Szántó (2010), however, cautioned that co-opetitive relationships are not always favourable and sometime retailers' competitive behaviour for individual profit maximising results in conflicts and limits channel performance improvement investment. Therefore, Kim et al. (2013) argued that the viability of a coopetition strategy depends upon its ability to generate better outcomes than what can be achieved by pursuing cooperation or competition alone. A large stream of literature has reported diverse advantages of co-opetition. They include more efficient knowledge utilisation in the form of innovative and speedy new product development, superior exchange performance between channel members and better channel management, skills development, gaining resources, market information and manufacturing machinery utilisation (Rindfleisch and Moorman, 2001; Kim et al. 2013; Thompson and Cheng, 2014).

Co-opetition strategy has also been explored from a risk and resilience perspective. For example, Thompson and Cheng (2014) argued that when two competitors decide to collaborate on specific business elements in a supply chain there is a possibility that they will share risk and create greater resilience within the agreed upon and pre-arranged business lanes. Eventually, cooperative relationships will allow the firms to avoid under-investment in resources necessary to keep the supply chain resilient against disruptive relationships. In FSCs, Masson et al. (2007) reported capacity sharing practices between sub-contractors, intermediaries and integrated service providers, particularly in manufacturing, warehousing and distribution to meet fast changing fashion demands for fashion, quality, speed and cost and overall to best serve European retailers. Wigley and Provelengiou (2011), Das and Teng (2001) and Şen (2008) reported joint production, production sharing, joint marketing and promotion, joint R&D and joint skills, training and development. Tokatli et al. (2008) reported capacity and information sharing and building relationships as mechanisms adapted by Turkish manufacturers and suppliers to balance asymmetric power relations with their UK and the US retailers.

Capacity development: Tokatli et al. (2008) and Tokatli (2008) reported capacity development initiatives of the emerging and existing manufacturers and suppliers in developing countries such as technology and machinery investments, developing design capabilities, ability to produce shorter production runs, worker training and skills development, getting certification and accreditation. However, they also reported difficulties, complications, costs and persistent uncertainty over getting repeat orders from European retailers, after making such investments. Fashion retailers are also building capacity by entering into multichannel retailing, adding capacity and growth opportunities, especially for SMEs (Ashworth et al. 2006). Masson et al. (2007) and Bruscas et al. (1998) further highlighted capacity development initiatives of skills development, team working, and provision of training and cross-training workforce. However, Christopher and Towill (2001) argued the need for cross-functional teams and training in order to enhance organisational agility which helps fashion retailer in rapid replenishment. Capacity development is also discussed in the context of the UK fashion industry. For example, Flanagan (2012), Taplin (2006) and Jones and Hayes (2004) highlighted the decline of the UK fashion industry and emerging capacity problems of skills shortage, decline of the manufacturing clusters, operating costs in the UK, raw material shortages and price and efficiency pressures from retailers. They further highlighted the UK fashion industry responses such as multi-skilling workforce, information sharing and building relationships with supply chain partners and introducing apprenticeships.

Power mechanisms in fashion supply chains: discussion of power mechanisms in FSCs is another area of academic interest. In the late 1980s and early 1990s, British clothing retailers started introducing increased variety and fashion-ability. This led retailers to buy more in mid-season and ultimately a *throw away market* (fast fashion) appeared on the retail scene. With this, a potential opportunity for a more balanced relationship between retailers and manufacturing suppliers was anticipated. It was envisaged that the requirements for greater variety and mid-season buying would change the traditional asymmetrical relationships with a powerful retailer to balanced relationships between retailer and supply chain partners. However, research demonstrates that the above predictions did not come true. A study by Crewe and Davenport (1992)

demonstrated how a British retailer managed to avoid renegotiation of power by successfully shifting risks and costs to its manufacturing suppliers and further switching to different suppliers in different countries. Similarly, in terms of advantages to domestic suppliers, Crewe and Davenport (1992) argued that requirements for reduction in lead times, mid-season buying, greater variety and fashion-ability benefited only limited proximate country suppliers and manufacturers such as Portugal and Turkey, but not British suppliers and manufacturers.

Crewe and Davenport's (1992) findings were reinforced by Tokatli et al. (2008). They highlighted how M&S abandoned its domestic suppliers and manufacturers and started outsourcing to different countries. However, they also highlighted suppliers' and manufacturers' strategic response to balance power and to further reduce risks. Suppliers started reducing their dependency by manufacturing and supplying to multiple retailers and seeking sub-contractors in case of too small or too large orders, to manage capacity. Furthermore, the authors also reported joint ventures, mergers and collaborative relationships, direct retailing and initiating branding and marketing to balance power. A specific example cited by them is how a Hugo Boss supplier transformed into a competitor.

Complexity, lack of visibility and use of integrated service providers in FSCs: sourcing short life-cycle products in large variety and smaller quantities from a large number of suppliers around the globe also has its adverse effects in increasing supply chain complexity and making it less adaptable. A large number of factors are mentioned in the literature as adding to complexity, for example, lack of knowledge, cultural differences, skills and competencies, regulation, financial and political structures. Thus a large network of supply base, intended to improve product range and agility, could lead to complexity which in turn impacts supply chain agility, adaptability and performance. However, literature also suggested means to counter complexity, for example, focusing on reducing supply complexity, trying to manage it better, or simply avoiding it. Another tool used by fashion retailers to reduce complexity, increase flexibility and market sensitivity is the use of intermediaries and integrated service providers (Masson et al. 2007). An example is sourcing product from low cost countries and managing distribution of delivery to retailers' warehouses in Europe. The retailer enjoys the

benefits of product technical and local expertise, knowledge and access to an existing supplier network, logistics and resolving complexities, subsequently adding value in the supply chain. Intermediaries also coordinate networks, manage material and information flow, identify capacity, consolidate orders and take charge of product quality assessment and overall synchronising of supply chain activities (Masson et al. 2007).

Another type of player in the fashion supply chain is integrated service providers (ISPs). According to Masson et al. (2007:249), "*ISPs are large organisations offering full in-house services from new product development through manufacture to logistics and delivery to the retailers' distribution centres*". They have their own product development, R&D laboratories, multi-product and multi-line production lines, warehouse management system, supply, manufacturing and distribution facilities and skilled people working for them. Fashion retailers can get help in any area of product development, to make changes at the last minute and to get samples in Europe in less than 24 hours. Due to all this, the introduction of ISPs has dramatically reduced complexity and cycle times for fashion retailers in Europe. Masson et al. (2007) found that most retailers had close relationships with these ISPs and intermediaries but little or no knowledge about where and who was the actual manufacturer of their products. This highlights the potential for scandals from a sustainability perspective. However, the most alarming finding of their empirical account was the statement, "*We found no evidence of formal risk management methodologies in any of these retailers, indeed many people indicated that making these judgements* (*regarding supply chain risk management*) *was the whole basis of their role* (*as risk management*)" (Masson et al. 2007:247).

Importance of brand image in fashion supply chains: Masson et al.'s (2007) study draws our attention to fashion supply chains vulnerability from potential sustainability and risk perspectives, especially from the perspective of brand image. Brand image is regarded as an important source of competitive advantage in five different ways. It helps customers to retrieve and process information, and to differentiate a product; brand value consisting of product attributes and customer benefits creates mental association which produce positive attitudes and feelings, which are transferred to the brand and

provide a base for product extension (Brun and Castelli, 2008). Brun and Castelli (2008) argued that brand image enhances customers' shopping experience by expressing value and intangible characteristics of a product such as emotions and psychological satisfaction. They further cautioned retailers to appropriately position brands in terms of their operations and the brand image perceived by customers. Uniqueness of a brand can derive from multiple factors such as technological content, handcrafting and structural features which cannot be copied easily and it is hence a strategic resource and competitive advantage (Brun and Castelli, 2008). Yet the uniqueness of a product mainly rests in the reputation of its brand, particularly in the fashion industry, where brand name is a determinant of success (Bruce et al. 2004; Brun and Castelli, 2008). Brun and Castelli (2008) maintained that it is imperative to support and maintain this uniqueness, for competitive advantage, by appropriately managing all the actors in the production and distribution processes.

Brun and Castelli (2008) also highlighted brand aspects from the perspective of a manufacturer and described that brand image impacts differently on customer psychology, with different service and quality requirements. Further, brand characteristics have different influences on demand volumes and patterns; in markets where brand reputation is very important, demand for well-known brands will be higher, more regular and predictable than for other goods and markets. Supply chain decisions for off-shoring manufacturing and outsourcing will have an impact on brand reputation; for example, for the mass label, manufacturing in Mexico, while producing a high-positioned fashion brand in Italy to allow a *Made-in-Italy* label (Lee, 2004). Similarly, Moore and Burt (2007) noted the importance of higher control and wholly owned subsidiaries in an international market expansion strategy for branded products, to protect brand image.

Importance of organisational resources in FSCs: The role of intermediaries, sub-contractors and integrated service providers further draws our intention to the importance of organisational resources to compete and survive in a highly un-predictable and volatile marketplace such as fashion. For example, Masson et al. (2007) reported that garment manufacturers in low labour cost countries are under intense pressure to meet the fashion requirements of European retailers due to outdated

technology, staff training and their small size and weak financial position. Therefore, retailers are using sub-contractors, intermediaries and integrated service providers who are large and financially strong, and possess the latest technology and a good pool of skills. Similar findings were reported by Barnes and Lea-Greenwood (2006) who explored fast fashion impact on the supply chain and reported that suppliers are under stress due to lack of resources to meet fashion retailers' requirements of quality control, packaging, creative product development to be more responsive and reduce cycle time, shorter production runs, capital investments, innovation in technology and more frequent shipments. Motives to acquire organisational resources such as skills, managerial knowledge, for innovation, research and development facilities also drive organisations to opt for outsourcing, offshore manufacturing and building alliances and for international market expansion (Tokatli et al. 2008; Lu et al. 2011; Moore and Burt 2007; Roza et al. 2011; Wigley and Provelengiou, 2011). Taplin (2006) and Jones and Hayes (2004) reported that a focus on organisational resources such as multiskilling operatives, designing cross-functional teams, technological up-gradation, and high quality resources such as wool or fine animal hair was a response of the UK textile and garment manufacturers during decline and proposed that possession of such resources can ensure future business viability.

Fast fashion: during the last decade, the phenomenon of fast fashion has challenged the sector as a new business strategy which involves getting new products during mid-season to satisfy consumer demand at its peak (Barnes and Lea-Greenwood, 2006 and 2010). Morgan and Birtwistle (2009) reported that fast fashion has gained significant market share in the UK and accounts for one-fifth of the total clothing market. Fast fashion largely based upon a quick response philosophy has gained considerable attention from consumers and is considered the main reason for a higher consumer appetite to replenish garments (Barnes and Lea-Greenwood, 2006; Barnes and Lea-Greenwood, 2010). Jones and Hayes (2002) argued that in developed countries, consumer clothing purchase decisions are largely based upon want and the appeal of fashion content rather than need; this is mainly due to the availability of choice in appropriate fit and size (Hines and Bruce, 2007; Hines, 2001). Therefore, consumers are very sophisticated in tastes and preferences, less loyal and not ready to accept

second best, but at the same time not ready to pay extra (Kacen and Lee, 2002). Therefore, FSCs must be proactive in determining trends and reactive to bring them in time with minimum stock-keeping units, to get high margins. Proximity to market is a key factor to identify popular designs and make changes even during mid-season, which is facilitated by advanced IT systems (Christopher et al. 2004). Researchers (Walker, 2011; Jones and Hayes, 2004; Taplin, 2006) maintained that the UK fashion industry is hugely impacted by fast fashion due to cheap imports, trade liberalisation and lack of resources to compete with fast fashion model. Further, after the decline most of the remaining British manufacturers are operating in luxury fashion which is expensive and the business model is not as fast as the fast fashion model, consequently increasing challenges for the UK fashion industry in general and for the manufacturing in particular.

Quick Response (QR) also enabled fashion supply chains to reduce complexity and better manage the growing shift to offshore sourcing from low wage countries. It is believed that if a pipeline is reduced to one-third of its length it will be helpful in determining demand more accurately while making it possible for retailers to re-assess mid-season demand and to receive small and frequent shipments. At this interface, QR has strategic importance to enable fashion supply chains to manage demand by compressing times in the supply chain. As defined by Forza and Vinelli (1997:126), "*QR is a time-based competitive strategy which focuses on the time compression of the value operative chains, and which organizes the collaboration between all the members of this chain, from the textile producer to the final customer*". QR necessitates the adoption and integration of information technology and collaborative relationships between supply chain partners. However, Forza and Vinelli (1997) cautioned that QR demands fundamental changes in planning and control, organisational design, strategies and culture. Therefore, it will be interesting to explore whether the supply chains of UK fashion retailers are implementing quick response or have made fundamental changes in organisational design, strategy and culture or not.

Importance of culture in FSCs: culture is important in fashion supply chains for agility, responsiveness, flexibility and market orientation. Organisational culture can be an enabler or barrier to competitiveness in a highly unpredictable and fast changing

fashion market. Failure to change and manage organisational culture can cause competitive disadvantage or even failure of business (Bruce and Daly, 2006). For example, M&S's strategic decision to outsource its garments was based upon the failure of its UK suppliers and manufacturers to change according to the fast changing fashion market, maintaining traditional ready-to-wear and biannual collections and ways of work (Tokatli et al. 2008). Therefore, M&S looked to outsourcing as a strategic strategy for its recovery and survival. Further, in the context of the UK fashion industry, the researchers (Walker, 2011; Jones and Hayes, 2004; Taplin, 2006; Abernathy et al. 1999) also highlighted the cultural problems of aging workforces, stagnant culture and lack of young generation interest in the manufacturing sector.

Mazaira et al. (2003) maintained that business success depends upon constantly providing superior customer service which can be achieved by market orientation. However, market orientation can only be achieved if it is ingrained in company culture by constant communication, information sharing and coordination across the company. Moreover, Masson et al. (2007) cautioned that culture could be a potential source of complexity in global FSCs, Christopher and Towill (2001) maintained that culture could be the single biggest barrier in managing change effectively, while Kotzab (2000) blamed cultural issues for uneven industrial implementation of quick response. In fact, Andraski (1994) mentioned that 80 percent of problems in organisations are due to people. Similarly, Lu et al. (2011) explored factors which influence international fashion retailers' entry mode choices and found that culture is a major barrier. Moore et al. (2004) suggested that, due to their direct interaction with consumers, retailers play the most important part in considering cultural issues. Overall, managing cultural change is described as necessary for survival. Bruscas et al. (1998:231) held that in order for the companies to prosper, they have to accept the inevitability of change. They further argued that the successful companies will allow change to be planned, managed and encouraged. They further stressed that "*companies that only change when they are desperate for survival will probably continue to be desperate for survival.*"

The importance of market orientation and change in culture is also captured in the notion of strategic drift by Johnson et al. (2008) and defined as "*the tendency for strategies to develop incrementally on the basis of historical and cultural influences*

but fail to keep pace with a changing environment" (Johnson et al. 2008:179). They further argued that the most important reason for the creation of strategic drift is that many organisations do not keep pace with these environmental changes, as environmental changes demand various changes in organisational strategy, such as change in products, markets or market focuses, changes of capabilities on which organisational strategy is built, change in top management or organisational restructuring. Therefore, they suggested that in order to understand the strategic position of a company and to further avoid strategic drift, "*it is vital to take seriously the extent to which historical tendencies in strategy development tend to persist in the cultural fabric of organization*" (Johnson et al. 2008:184) and to prioritise the importance of managing strategic change within the organisation. In the context of this research, it will be interesting to explore, as it is not clear in the extant literature, whether the UK fashion industry is in line with market changes where consumers prefer fast fashion and low price, and demand is volatile and unpredictable, or are still embracing the old strategies and culture which they had in the past.

2.5 SUSTAINABILITY MANAGEMENT

Industries, such as fashion, which have high environmental impact, are under intense pressure from multiple stakeholders to balance between environmental and business needs (Caniato et al. 2012). The fashion industry, due to its global volume, has significant environmental impact as it accounts for 4% of worldwide exports and 9.3% of the world's employees (Caniato et al. 2012). The production phases of dyeing, drying and finishing make heavy use of chemicals, with earlier use of heavy chemicals, pesticides, fertilisers, water and energy in the cotton and wool production phase. Further, the global spread of multiple operations requires product movements from developing countries to developed countries in order to achieve cost benefits, which consequently results in a significant environmental impact of transportation. The British clothing industry alone produces 20 million tonnes of waste water and 3.1 million tonnes of CO_2 each year (Greenpeace, 2011). Similarly, Shankleman (2012) reported that the UK alone throws out £25 million worth of clothes to landfill every year and the amount is increasing. Therefore, it is imperative for fashion supply chains to understand sustainability, integrate it into their strategy and ensure good management

for supply chain continuity and viability and to avoid any disruption or failure of business.

This section, first, defines sustainability and then drivers and barriers in integrating sustainability into supply chain are discussed. Sustainable supply chain management is discussed along with various frameworks proposed in the extant literature.

2.5.1 Definitions of Sustainability

Since its emergence, sustainability still lacks comprehension and operationalisation as a unified and universally applicable concept. Complexities in integration of its elements, interconnectedness, the interests of different stakeholders and multiple interpretations have made it a buzzword. The two most prominent and frequently cited definitions of sustainability in the literature are Sustainable Development (SD) and the Triple Bottom Line (TBL). Sustainable development defines sustainability as a form of "*development that meets the needs of present without compromising the needs of the future generations*" (WECD, 1987). O'Riordan (2014) argued that the sustainable development concept is difficult to define because it consists of multiple elements. The author maintained that sustainable development at its very core is a combination of culture, history, people, land, institutions and many other elements. Therefore, its manifestation is geographical, and does not lend itself to development of a global definition and application (O'Riordan, 2014).

Second, TBL, a phrase first coined by John Elkington in 1994 and later used in 1997 in his book "Cannibals with Forks: The Triple Bottom Line of 21st Century Business" describes three bottom lines. First, the traditional measure of corporate profit or economic value, also known as the *bottom line* of the profit and loss account. The second bottom line is a company's *people account*, which is a measure of how socially responsible a company is throughout its operations. The third bottom line is the company's *planet account*, which measures the environmental responsibility of a company. Therefore, the TBL thus consists of three Ps: profit, people and planet. TBL aims to measure the financial, social and environmental performance of a company over a period of time.

Grant et al. (2015) defined sustainability from two perspectives: first, capable of being sustained, which highlights the importance of economic development; second, capable of being maintained at a steady level without an adverse impact on environment or causing ecological damages. The most important feature of their account is the concept of 'green is green' which implies that sustainable initiatives, in order to be successful, should be considered in conjunction with economic and long term corporate sustainability, in their words, "green being the colour of money" (Grant et al. 2015: 31). On the other hand, Costanza and Patten (1995:193) argued that sustainability "*casts the problem as definitional, when in fact it is more one of prediction of what will last, and of achieving consensus on what we want to last and it accounts for the range of interrelated time and space scales over which the concept must apply*". They further argued that what is implied in sustainability, biologically, is to avoid extinction and ensure living to reproduce; economically, avoiding major disruptions, disasters, collapses and vulnerabilities by hedging against instabilities and discontinuities and therefore sustainability concerns temporality and particularly longevity.

Although there is, in fact, no consensus on what sustainability is, the research community still stresses the importance of understanding the concept of sustainability for its better implementation and results. However, some leading organisations in this campaign have reported mixed results. Moreover, against the backdrop of worldwide increased public demand for sustainable business operations, evidence shows that integration of sustainable initiatives by business organisations has declined over the years, most importantly in developed countries such as the UK and the US (Lewis, 2003).

The researcher acknowledges all the differences and adopts the TBL concept of sustainability for this research, which necessitates a balanced corporate engagement in environmental, social and economic activities for long term economic benefits and competitive advantage (Elkington, 1998).

2.5.2 Drivers and Barriers of Sustainability

What makes a business adopt sustainable initiatives and what prevents it from doing so has become an interesting area of discussion for researchers. Mollenkopf (2006)

maintains two perspectives on drivers of sustainability. The first is the organisation's own desire to be sustainable and the factors that underpin this desire, including the leader or owner's own passion or commitment for sustainability. Another motivation is to reduce costs; cost is considered as one of the main barriers as well as enablers to integrating sustainability. Sustainability initiatives are also driven by the wish to avoid market and sustainability risk, for example, decreased demand or organisational boycotts, and the issues that can create a sudden competitive disadvantage; to lower operational risks, in the form of clean ups; rise in energy and material costs, for better relationships with multiple stakeholders, and for integrated sustainability decision making. The second perspective highlights a forced approach, where organisations are forced by stakeholders, government policies and legislation to integrate sustainability to avoid liabilities (Mollenkopf, 2006).

Regulatory pressure is one of the most cited drivers to integrating sustainability into business operations. The most important areas of legislation are regarding quantities and types of chemicals used in products, chemical waste, discharge of factory water, waste disposal, point of origin, emission and landfill tax, personal liability of directors and officers in health and safety (Anderson and Anderson, 2009; Anderson, 2005). The researcher (Walker, 2011; Jones and Hayes, 2004; Taplin, 2006) also highlighted the legislation and the government support as the major barrier in the UK fashion industry. These are some of the areas where organisations have to conform, to avoid costs. However, organisations have to incur costs to find or develop alternatives to or substitutes for products or materials that are banned by legislation. A supportive culture that involves employees, especially middle management, is also mentioned as an enabler in the literature. Albeit with huge criticisms, some systems such as environmental management systems (EMS) and the guidelines of the International Standards Organization (ISO) are also recommended for the integration of sustainability into business operations (Grant et al. 2015; Ljungberg, 2007).

Extending our discussion to the barriers to sustainability, size of the organisation is considered a main one. Larger organisations have the capability to allocate resources or have dedicated teams or departments for sustainability, whereas it might not be possible for smaller organisations to do so. Spence and Bourlakis (2009) argued that small

organisations are subject to discrimination from big organisations because of the lack of resources to setup standardised procedures for CSR implementation. Lack of a supportive culture, organisational structure and process also undermine efforts to integrate sustainability into business operations. Lack of knowledge, training and commitment by senior management is also considered as a barrier to sustainability integration (Grant et al. 2015; Carter and Rogers, 2008). Traditional accounting methodologies which were developed to report economic progresses to investors or shareholders do not have any indicators or reporting on sustainability. Such structures not only restrict sustainability reporting but also are not supportive for sustainability performance evaluation. Rather, they have an inbuilt tendency to over-focus on cost issues and are therefore a major barrier to sustainability integration. Some other barriers reported in the literature are conflicting priorities and interests, especially if an organisation is part of a supply chain, consumer pressure for low prices, competitive pressures, green consumerism and the role of environmental and social organisations and governments.

Sustainability literature suggests the integration of sustainability into policy and decision making based on sound information available on sustainability indicators and standards. Furthermore, a vast amount of data on environmental and social issues exists to help improve sustainability decision-making. However, worldwide, there are no unified and agreed upon indicators to measure sustainability impact at national, international and organisational levels. Thus, the absence of unified and universally-accepted standards and indicators makes the application of sustainability difficult, especially in those organisations that operate globally, such as global fashion supply chains (Delai and Takahashi, 2011). Therefore, there is recognition that new frameworks must be developed and adopted to organise and integrate sustainability into decision and policymaking. The implementation of existing systems cannot guarantee sustainability, but offer guiding principles (Grant et al. 2015).

Walker and Jones (2012) reported similar findings to those above. However, they comment that the approach to sustainability is contingent on the circumstances and context in which the firm operates, including the type of industry. For example, in the fashion industry, the whole business model is based on quickly replenishing garments

without much consideration of sustainability. They further highlighted that culture has a main role to play as an enabler, although conversely it can be a major barrier. From this perspective, Walker and Jones (2012), Carter and Jennings (2004) and Hughes (2005) found a supportive organisational culture as an enabler of sustainable supply chain management. Carter and Rogers (2008) highlighted that sustainable organisations integrated sustainability initiatives into corporate strategy along with changing company culture and people mind-sets. The existing accounts on sustainability demonstrate that visionary companies that have outperformed competitors over a longer period of time had core values and cultures and a sense of purpose beyond the economic bottom line (Collins and Porras, 2005). Further, Bonn and Fisher (2011) suggested that to build such a culture, an organisation should focus on reward, performance appraisal and job description systems which should integrate sustainability values based upon long term horizons.

Sustainability literature places a huge emphasis on the importance of knowledge for sustainability integration and regards it as a dynamic capability. Carter and Rogers (2008) described knowledge as a well-known and widely accepted resource that implies the ability of firms to effectively learn and implement changes based upon what they have learned. They posit that organisational learning occurs when knowledge is accumulated over time and learned by organisational members. Furthermore, knowledge is stored not only in organisational procedures and rules but also informally in norms and social and communication patterns. Therefore, it is regarded as a capability with roots in the dynamic capability view. In fact, knowledge and human capital resources consist of training, skills, experience, social relationships and insights of managers and workers in an organisation (Carter and Rogers, 2008). Walker and Jones (2012) further highlighted the importance of developing capabilities for sustainability, specifically within the purchasing department, due to its interaction with other organisations.

Walker and Jones's (2012) study further reported a perception that a strong brand reputation would help companies to reduce sustainability costs, but argued that a strong brand reputation is, in most cases, an outcome of strong sustainability initiatives. They further highlighted the importance of being proactive in sustainable initiatives to gain

competitive advantage, and manage reputational and environmental risks. A large stream of sustainability literature agrees that sustainability can impact brand image substantially. As Tate et al. (2012) argued, many organisations view sustainability as a positive opportunity to build goodwill among environmentally conscious consumers and to enhance brand image. Ho and Choi (2012) reported an Ernst & Young survey showing that 71 percent of the companies questioned believe that the reputation and brand is the area where green efforts will have highest impact from the perspective of opportunities and challenges. Similarly, Ho and Choi (2012) reported that 64 percent of their study respondents were willing to pay a higher price for green products and services. Nevertheless, they maintained that the respondents are not putting greater awareness and willingness about sustainability into practice. They further criticised sustainability literature which reports that eco-design can strengthen customer interest and loyalty and appeal to new customers and argued that consumers still favour consumption instead of green or conservation trends.

Globalisation, outsourcing, longer and extended supply chains and the lack of visibility and control are some of the factors mentioned in the sustainability literature that lead to sustainability risk of business and brand reputation (Grant et al. 2015; Carter and Rogers, 2008; Spence and Bourlakis, 2009; Perry et al. 2015). Similar challenges were also mentioned in the context of the UK fashion industry by Walker (2011); Jones and Hayes, (2004) and Taplin (2006). A large stream of sustainability literature highlights various catastrophic events caused by lack of visibility and control and their ultimate impact on the business and brand reputation, such as the Nike scandal and recently Rana Plaza in Bangladesh, leading to reputation and brand risks. Taticchi et al. (2013) asserted that sustainability should be incorporated into corporate agenda and a failure to engage with sustainability can lead to financial loss, tarnished brand equity and serious reputational damage which they referred as sustainability risk.

From the above discussion, it is apparent that organisations are under significant pressure from multiple stakeholders to integrate sustainability into their business operations. However, there is no research on why the UK fashion industry is integrating sustainability into their operations, if they are at all; and if not, then how they can integrate it. This research will address these issues in later chapters.

2.5.3 Sustainable Supply Chain Management

In the last decade, the notion of sustainable supply chain management (SSCM) has been a major topic of discussion in supply chain management. The earliest notion of today's green supply chain is linked to Ayres and Kneese (1969: 282-97) who discussed issues of production, consumption and externalities. In the 1990s, the research community expanded the concept to multiple areas of business, for example, production planning, remanufacturing, inventory management, collecting, sorting and remanufacturing of collected goods, scheduling and control and reverse logistic issues (Taticchi et al. 2013). However, the sustainability agenda and its application to logistics and supply chain management are still fairly recent and under-developed (Grant et al. 2015).

The research community has defined sustainable supply chains from various perspectives. For example, Carter and Rogers (2008:368) considered risk management, culture, strategy and transparency as supporting facets of sustainability and defined SSCM as "*the strategic, transparent integration and achievement of an organization's social, environmental and economic goals in the systematic coordination of key organisational business processes for improving the long-term economic performance of the individual company and its supply chains*". Srivastava (2007) argued that the integration of a 'green' component into SCM is concerned with the influences and relationships between SCM and the natural environment. He further defined GSCM as "*integrating environmental thinking into supply chain management, including product design, material sourcing and selection, manufacturing processes, delivery of the final product to the consumers as well as end-of-life management of the product after its useful life*", In the presence of a large number of definitions, it is difficult to decide on the scope and boundaries of the concept. However, Zhu and Sarkis (2004) pointed out that, in the literature, the definition and scope of SSCM or Green SCM ranges from green purchasing to integrated supply chain flows from downstream to upstream or even to reverse logistics. Abukhader and Jönson (2004) pointed to Reverse Logistics, assessment of emissions, the greening of logistics and supply chain management as major themes in the discipline. All these definitions and arguments draw attention to the important concept of reverse logistics and its role in designing sustainable supply chains.

Reverse logistics, practised for a long time in the form of returns, recovery, and recycling, is nevertheless still a growing area in the fields of logistics and supply chain management (Grant et al. 2015). Reverse logistics has been defined in terms of a process of recapturing the value from products at the end of their life cycle or simply disposing of them in a safe manner. Tibben-Lembke (2002:224) defined reverse logistics as "*the process of planning, implementing and controlling the efficient, cost effective flow of materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing value or proper disposal*". Reverse logistics has gained wider acknowledgement from the supply chain community and specifically from logisticians as a tool for competitive advantage, brand credibility, and quality for consumers (Grant et al. 2015). However, the application of reverse logistics is doubtful in certain fast, volatile and demand driven supply chains such as fashion supply chains. This is because some of the preliminary requirements are that the consumer has to initiate the return, and to accept and purchase recycled or refurbished product and the manufacturer or focal firm should know exactly the price and value placed by consumers on recycled goods (Grant et al. 2015). Contrary to these requirements, however, the consumer appetite to replenish, especially garments, is an increasing trend and the preference is for short life-cycle products such as fashion garments. For these reasons, the effectiveness of reverse logistics in the UK fashion industry is questionable.

In order to integrate sustainability into supply chain operations, the research community has suggested the use of Life cycle assessment (LCA) or life cycle thinking (Grant et al. 2015). LCA is an evaluation tool to assess and quantify data regarding material and energy consumption and environmental impact at different life cycle stages of a product or supply chain operations. As defined by Gungor and Gupta (1999:818), LCA is a process approach used "*for assessing and evaluating the environmental, occupational health and resource-related consequences of a product through all phases of its life, i.e. extracting and processing raw materials, production, transportation and distribution, use remanufacturing recycling and final disposal*".

However, use of these tools is still restricted, for example by the level of information required, complexity in calculations, quality of data, and size of the organisation,

because SMEs might find such practices difficult to perform (Fargnoli et al. 2014). Heavy use of quantitative information enables designers to carry out cost benefit evaluation but on the other hand, it is difficult to obtain such complicated and comprehensive information for an extended supply chain. Further, the complexity of LCA can be exacerbated by the nature of the product. For example, if it is fast changing, trend oriented, short life cycle and complex in nature, then a larger number of factors need consideration. Furthermore, LCA requires inputs and contributions from multiple stakeholders other than supply chain partners, which increases the difficulty of implementing it in a supply chain context.

Over the years, design has gained considerable importance as a strategic tool to manage environmental, social and economic impacts of products. It is believed that 80 percent of supply chain costs can be determined and managed at the design stage (Appelqvit et al. 2004). Design has been discussed in supply chain literature as a main tool to respond to rapidly changing market needs (Parker et al. 2008), reduce product development time, improve product quality, learn and benefit from supplier technology for supply chain responsiveness, reduce cost, risks and lead times (Zsidisin and Smith, 2005). This requires designers to integrate environmental and social considerations into product design along with the traditional bottom line, while also improving product functionality (Fargnoli et al. 2014). Sustainability literature suggests guidelines for integrating sustainability into design, for example, cross-functional teams, close relationships and inclusion of multiple stakeholders, information sharing and collaboration with supply chain partners and early supplier involvement in design (Zsidisin and Smith, 2005; Sharifi et al. 2006; Grant et al. 2015).

It is necessary to address consumers' attitude of consumption over conservation. Gam (2011) and Belleau et al. (2001) argued that environmentally conscious consumption has not yet extended to garment purchasing behaviour. Consumers want fashion, look, and price whereas green garments are expensive, not readily available and lacking in fashion content. Further, it is difficult to find environmental or ethical information about those garments. They suggested that retailers should identify their potential market segment and develop promotional, educational, information sharing and communication strategies on such issues to address specifically consumers' needs. How can a holistic

approach to design be adopted? Howarth and Hadfield (2006) suggested that one way is to identify the risks and benefits of having a sustainable design. Similarly, Ljungberg (2007) suggested that design must be successful (economically) and it should exceed customer expectation and result in customer satisfaction. He further suggested the use of sustainable marking and signs to inform attract and change consumer behaviour regarding sustainable products. Ljungberg (2007) also recommended that sustainable products should also integrate cultural aspects and fashion trends, but did not describe how culture, consumer behaviour and fashion trends can be changed for sustainable product acceptance.

In terms of design and risk management, SCRM researchers have proposed modularity, postponement and partnerships for co-design as effective tools to manage supply chain risks. For example, Zsidisin et al. (2005) proposed supplier involvement in the supply chain as co-designers for better outcomes and reduced likelihood of supply risks. However, there is no specification about how to involve the suppliers and what will be their role as co-designers. Further, Zsidisin et al.'s (2005) study overlooks the role of design in managing supply chain sustainability risk. Hence, the existing accounts are too limited in scope to provide a comprehensive account of how different companies in a specific sector can integrate sustainability risk issues into design and what would be its impact on supply chain operational performance.

A large stream of literature also focused on communication and information sharing with government agencies, NGOs, working groups and CSR bodies for sustainability related guidance, legislation and initiatives (Jones et al. 2011; Anderson, 2005; Grant et al. 2015). Cooperative relationships with NGOs, for example, enhance the ability of a firm to adapt sustainability risk management pro-actively, more rigorously and sooner than competitors. Thus, Foerstl et al. (2010) argued, external responsiveness is a major element of dynamic SSCM capabilities which will be rewarded with competitive advantage. Miemczyk et al. (2012) reviewed extant literature on SSCM and argued that at network level, stakeholders are many and varied; for example, consumers, businesses, governments, NGOs, shareholders, activists, competitors, suppliers and individual managers. These multiple, inter-connected and interdependent actors may differ in ambitions and objectives, with varied power and influence structures. However, they

need to understand each other's roles and influences in the wider network, for sustainable purchasing and supply, as without such understanding it is not possible to overcome constraints. This highlights significance of frequent, meaningful interactions between companies and varied stakeholders.

Another feature of SSCM highlighted in the literature is sustainability initiatives that help organisations to build capacity, especially on the supply side, for example, financial help for suppliers' environmental programmes, education and training, and provision of written guidance on developing and implementing sustainability initiatives (Miemczyk et al. 2012). Delai and Takahashi (2011) reported capacity development initiatives integrated into GRI indicators such as workforce education, training and development and the need for R&D for new and innovative product development. Smith and Sharicz (2011) elaborated the leadership role for capacity development, by education, communication, rewards and performance along with a broad and deep stakeholder engagement and building internal and external partnerships.

Innovation in new product and process development is also an interesting area of research in the sustainability literature. Researchers have highlighted various innovative new product and process initiatives which are beyond the traditional eco-design or organic type of initiatives. For example, Flint and Golicic (2009) reported storytelling to use sustainability for competitive advantage. In storytelling, a unique story is created and told surrounding history, relationships and naturally grown materials to create emotional bonds between customers and retailers. Similarly, Kotzab et al. (2011) highlighted M&S's sustainability programme *Plan A,* and creative marketing campaign, *Look behind the Label*.

Researchers also reported the increased use of recycling, remanufacturing and refurbishment for waste reduction and resource conservation. Designing closed loop supply chains with zero-waste intention, substituting information for inventory, product modularity, design for disassembly or design for environment are example of innovative processes to integrate sustainability into business operations (Mollenkopf, 2006; Grant et al. 2013). However, researchers also suggest that such efforts will increase supply chain complexity, cost and operational issues (Linton et al. 2007; Grant et al. 2013),

making implementation difficult, especially for SMEs, due to their weak financial position and lack of resources (Caniato et al. 2012).

Ljungberg (2007) suggested the conversion of a product into service as a main tool to achieve sustainability in an economy where products are substituted by services known as a functional system or service economy. Under such a system, producers or manufacturers focus on life cycle extension and maximising product use, while at the same time taking responsibility for environmental planning of products throughout their life cycle. Producers will further take charge of operations such as delivery, repair, guarantee, upgrading, and maintenance, take back and recycling. Examples are leasing of copying machines, coffee automates and renting cars rather than selling them. However, the above discussion raises some important questions, whether it is possible to design closed loop fashion supply chains, or to extend the life cycle of fashion garments which are designed for a very short life cycle, and whether it is possible to reuse fashion garments, most of which are for one use only. These questions and the existing realities of fashion business further complicate debate and are important to explore in sustainability risk management of fashion supply chains research.

Designing a framework for SSCM is an interesting theme in SCM. For example, Seuring and Müller (2008) suggested such a framework based upon two dimensions *sustainable supply chain management for sustainable products* and *Supplier Management for Risks and Performance*. The former focuses on sustainability aspects, the latter on risk aspects. Through analysis of nine fashion company reports, Turker and Altuntas (2014) further developed Seuring and Müller's (2008) SSCM framework. However, their model not only treated sustainability and risk as separate concepts. Moreover, it seems more suitable for supplier-related issues of sustainability and risk and their impact on company performance, rather than a supply chain wide focus.

Carter and Rogers (2008) further expanded the Triple-Bottom-Line by highlighting different issues at the intersection of economic, social and environmental areas of TBL. Their proposed framework (Figure 2) is important from two perspectives. First, it provides clear guidelines and a set of activities that organisations need to carry out for

SSCM. Second, firms can use this framework as benchmark their progress to see where they are at sustainability management (good, better or best).

Figure 2: Framework for SSCM
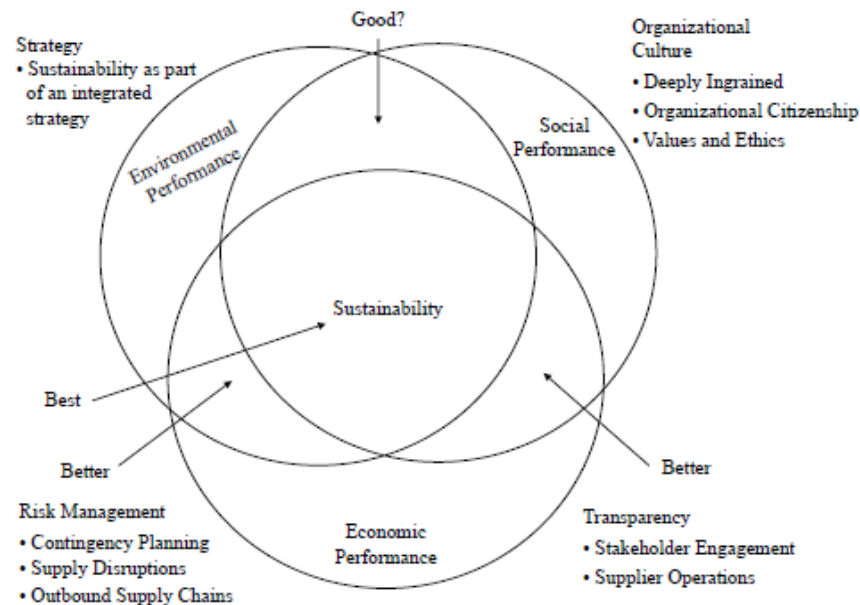
Source: Adapted from Carter and Rogers (2008)

The question mark following 'good' indicates that environmental and social undertakings should be in the firm's broader context of overall strategic and financial objectives. Responding to the criticisms that environmental and social undertakings are costly and therefore, a win-win approach is not possible, the researchers maintained that the elements of the triple bottom line should be part of organisational strategy, deeply ingrained in the organisational culture, seeks inputs from multiple stakeholders and should be treated as a risk management approach.

The above frameworks share the limitations of treating sustainability and risk in standalone fashion and not being designed in the context of the UK fashion industry. They might have been useful contributions if they had been developed in an industry such as fashion, where demand is extremely volatile and unpredictable, supply chains are agile and responsive and product life cycles are short. However, Carter and Rogers

(2008), acknowledging such issues, maintained that their framework was an early effort to suggest a theory for further development.

A key element of SSCM is sustainable purchasing, defined as *"the consideration of environmental, social and ethical and economic issues in the management of the organization's external resources in such a way that the supply of all the goods, services, capabilities and knowledge that are necessary for running, maintaining and managing the organization's primary and support activities provide value not only to the organization but also to society and the economy"* (Miemczyk et al. 2012:489). Highlighting the importance of purchasing professionals in environmental purchasing, Zsidisin and Siferd (2001) argued that the goods and services purchased and the purchasing professional's actions or lack of actions can have direct impact on the natural environment. This is in part due to the heavy influence of the materials purchased, based on price, quality, delivery and other criteria. Further, purchasing professionals also influence technology and equipment selection, which ultimately impacts energy usage, emissions, production and delivery.

Literature on sustainable purchasing places special emphasis on making sustainable choices in order to conserve natural resources and for the continuity of supply. For example, Carter and Rogers (2008) examined SSCM in terms of resource dependence perspective, uncertainty and vertical coordination. They proposed that firms that are dependent upon and face uncertainty over key external resources can improve their economic sustainability through vertical coordination. They further reported a positive relationship between vertical coordination and the interaction of uncertainty and resource dependence. Carter and Rogers (2008) and Ellram and Cooper (1990) proposed strategies to minimise uncertainty and for supply continuity of commodity-like products (for example in fashion, wool, cashmere, particular types of cotton etc.) using future markets to coordinate with supply sources. Some other strategies they suggested are dual or multiple sourcing, contracts, relational forms of governance such as partnerships and strategic alliance.

In terms of sustainable purchasing, sustainability literature also suggests close relationships and partnerships for joint product development, to share R&D costs, to

restore corporate image, to increase environmental responsiveness of suppliers, for differentiation, to reduce costs, to reduce supply chain waste and to develop sustainable materials, alternative or substitutes (Xia and Li-Ping Tang, 2011; Zsidisin and Siferd 2001; Caniato et al. 2012; Grant et al. 2013). Seuring and Müller (2008) asserted that for a SSCM it is imperative to have partnerships and close integration which will help in sustainable and new product introductions. However, De Brito et al. (2008) suggested that internal organisation of a company and external organisation of a whole supply chain is necessary for enhanced supply chain performance. They maintained that the best performing companies are those that effectively manage internal and external relationships between functions and organisations through improved coordination. Making suggestions to the European textile and garment industry for sustainability, De Brito et al. (2008) argued that it is not possible for the European companies to compete on cost, and suggested the use of Porter's (1985) strategies of differentiation by focusing on process and/or product innovation enabled by technological advancements in the textile and garment industry. They suggested that product innovations can be enabled by unique resources such as organic cotton for green consumers but it should be accompanied by a communication strategy especially in a business to consumer context.

De Brito et al. (2008) cautioned that while internal integration and organisation can lead companies towards sustainability, the same does not apply for external or supply chain integration and organisation. In this regard, they highlighted the need for partnering relationships with supply chain partners and different stakeholders including working groups in the industry, relationships management, having highly skilled people, and resource sharing, especially in transport equipment and warehousing and the use of coordination tools such as collaborative planning, forecasting and replenishment (CPFR).

Sustainable purchasing brings considerable benefits for the purchasing firm, for example, tax reductions, first mover advantage and consumer support. However, lack of systematic methods which can help purchasing professionals in accurately measuring benefits and costs is still considered as a major barrier in sustainable purchasing. Designing a green purchasing strategy is a complicated matter which may result in increased material costs and at the same time, qualified suppliers may be delisted due to

the need for non-traditional materials and parts. Start-up investments, employee training, environmental auditing and further costs of environmental activities can put firms at an economic disadvantage compared to less environmentally responsible firms. Therefore, it seems interesting to explore the role of purchasing function and professionals in the sustainability of the UK fashion industry. The next section will shed light on the understanding of risk and supply chain risk management.

2.6 RISK MANAGEMENT

Risk management literature demonstrated that, in life, risk manifests itself in feelings of both faith and doubt concerning the outcome of a particular undertaking (Bernstein, 1996; Miller, 1992; Knight, 1921). Risk is a well-known term with multiple meanings, functions and connotations; it implies a danger, a gamble, a speculation and/or the possibility of a venture, loss and peril. In this highly complex, uncertain and interconnected world, our inability to coordinate and predict the actions of others creates risks (Miller, 1992). As part of an interdependent and complex system, societies, organisations and natural environment are both necessary and threatening to one another. As the complexity in our exchange networks increases so does our understanding, assessment and management of risk (Miller, 1992).

This section first sheds light on the historical emergence of risk and risk definitions. The next sub section highlights sources and types of risks followed by risk management and process of risk management. This is followed by a discussion on supply chain risk management and supply chain risk management strategies. Section 2.6.6 discusses supply chain sustainability risk, which is also the main subject area of this research.

2.6.1 Historical Understanding of Risk

Risk is a complex concept that has evolved over time and now is the subject of controversies and disagreements between social and natural sciences. With regard to the history of risk, Frosdick (1997) reported that in the seventeenth century it was applied in gambling, in the eighteenth century it was viewed as a natural concept comprising gains and losses, in the nineteenth century it emerged in economics in relation to optimal investment, while in the twentieth century, the concept of risk

referred to negative outcomes, especially in engineering and science, where it often referred to hazard posed by technological developments, petro-chemical and nuclear industries. By the mid-20th century, risk was widely applied in different kinds of industries and corporate functions. However, the insurance industry is known as the first to integrate the concept of risk into its operations (Moore, 1983). Rao and Goldsby (2009) found that recently, human behaviour and psychology-based approaches have been widely used in order to understand and respond to risk.

In the supply chain discipline, interest in risk management began only recently. Heightened interest in supply chain risk management (SCRM) can be attributed to increased manmade and natural disasters. In 2002, the first conceptual framework for risk management in network environments was developed by Hallikas et al. (2002) and in 2004 they extended their framework to investigate risk management in cooperative supplier networks. A detailed examination of the term risk by Harland et al. (2003) showed that risk has been examined from organisational buyer behaviour, procurement and supply, purchasing strategy selection, outsourcing, environment and e-business risk. Zsidisin (2003) noted that risk is widely applied in business management areas such as managerial decision-making, strategy, operations, distribution, accounting and finance.

Further, Jüttner et al. (2003) highlighted supply chain risk management possibilities and suggested a need for more empirically grounded research in the discipline to manage supply chain risks, effectively and efficiently. Jüttner (2005) further conducted an empirical survey in order to find SCRM requirements from a practitioner's perspective. Chopra and Sodhi (2004) investigated risk management strategies to counter supply chain break-downs. Further important contributions are: designing resilient supply chains (Christopher and Peck, 2004), drivers of supply chain vulnerability (Peck, 2005), risk assessment and management in purchasing and supply (Peck, 2006), investigation of supply chain vulnerability and its link to SCRM (Wagner and Bode, 2006), risk management in global supply chains (Manuj and Mentzer, 2008), SCRM literature review and classification of risks in SC (Rao and Goldsby, 2009) and managing sourcing risks in global supply chains (Christopher et al. 2011). Although a large stream of research has focused on risk, still there is no consensus about the term.

However, it is argued that it is complex, widely misunderstood and ambiguous in nature (Moore, 1983).

Risk is generally associated with a negative outcome or probability of loss. However, Moore (1983) argues that risk is not only concerned with the probability of loss but also with a gain or hope for benefit. Moore's (1983) concept of risk as hope for gain is supported by Fischhoff et al. (1984), who claimed that it is central to some industrial developments and growth of some disciplines. Their view is in line with Kahneman and Tversky (1979), who argue that decision-making is concerned with making choices between prospects that have different outcomes (not only negative outcomes), each with a different probability. Holton (2004) argues that two elements must be present in order for a situation to be considered a risk, exposure to an event and the uncertainty of outcome.

Most definitions of risk have three elements in common: first, the likelihood of occurrence of a particular event, second, the consequences of the event, and third, the causal pathway leading to that event (Ritchie and Brindley, 2007). Many researchers have, however, challenged this view of risk. For example, Bernstein (1996) claims that risk also concerns choices and behaviour. Bernstein's (1996) concept of risk, choices and behaviour is reinforced by the work of Burnes and Dale (1998) and Cousins et al. (2004), who state that choices made in business relationships and the integration of business partners are mutually beneficial, but are equally risky if either party behaves opportunistically. Risk has often been discussed in relation to culture. Douglas and Wildavsky (1983) maintained that culture provides shared conventions and categories, conventions and expectations which give rise to personal judgments about risk. Miller (1992) argued that risk is not simply a given; rather, it is socially constructed, as the performance of complex socio-technical systems is highly dependent upon many interconnected factors and therefore, risky.

Another interesting debate concerns is whether risk is objective or subjective by nature (Fischhoff et al. 1984). A major reason for disagreement on this is the 'likelihood of occurrence' aspect of risk definition, which suggests that risk can be quantified to make it tangible and static and therefore it is observable and measurable (Lupton, 1999)

hence, risk can be assessed, evaluated and analysed by applying statistical tools and techniques. However, in recent years, there has been an increasing interest in the subjective nature of risk, especially from the social sciences standpoint, which acknowledges social actors and their context. Taking such a view, Yates and Stone (1992) argued that risk must be subjective because, it involves 'interaction between the alternative and the individual, the risk taker'. In their view, the nature of the potential loss, its significance and the chances that risk will manifest, are personal and vary from individual to individual. Therefore, risk perception may, accordingly, be positive for one and negative for another and each can benefit or lose according to their context; therefore, risk must be subjective. This view is supported by Moore (1983), Bernstein (1996), Peck (2006) and Covello (1992), who wrote that risk is subjective and determined by socio-political and historical factors.

The above discussion showed prevailing controversies and conflicting opinions about the nature and definition of risk. Further, it is also clear that there is an almost infinite variety of definition of risk (Ritchie and Brindley, 2007). Therefore, for the sake of this research the following definition of risk has been selected:

"*Risk is a subjectively determined expectation of loss*" (Mitchell, 1999).

Uncertainty and business continuity are two conceptually different concepts but are used interchangeably for risk. The earliest distinction between 'Risk' and 'Uncertainty' was made by the modern economist and decision theorist, Knight (1921). According to him 'Risk' is a measureable uncertainty, whereas 'Uncertainty' is non-measurable uncertainty'. He further argued that when a decision can lead to more than one possible consequence, then uncertainty arises. To make it further clear, he argued that uncertainty describes a situation which does not lend itself to a reasonable estimate of the probability that an event will occur. Similarly, business continuity management (BCM) is a largely under explored yet strategically important concept. Gibb and Buchanan (2006) define BCM as 'a tool that can be employed to provide greater confidence that the output of processes and services can be delivered in the face of risks'. It is concerned with the recovery of risk-impacted processes and services without significant disruption to the enterprise through the risk management process.

In order to manage risk, however, it is necessary to have some understanding of why and how it arises. These issues are addressed next.

2.6.2 Sources and Types of Risk

Understanding the sources, classification and categorisation of risks clarifies the potential risks faced by organisations and provides a basis for risk assessment (Jüttner et al. 2003). In support of this argument, Blackhurst et al. (2008) argued that the most important step in risk assessment is the definition and selection of risk categories. Olson and Wu (2010) highlighted the importance of understanding the context and drivers or triggers of risks and argued that risks can arise from anywhere; from within an industry, from the external environment, from within a specific supply chain or partner relationship or from specific activities within an organisation. Gaudenzi and Borghesi (2006) proposed three elements that need consideration: first, what drives the risk; second, where the risk is, (i.e. its location in the network or organisation); third, what the risk is associated with, (i.e. its connections and interdependencies).

The most widely cited sources of risk are global competition, internal instability, changes in macro-economy and politics, natural and manmade disasters, globalisation, outsourcing, network complexity, short product life cycle, capacity limitation, product and technological changes (Norrman and Jansson, 2004). Tchankova (2002) reported sources of risks such as physical, economic and social environment. Jüttner et al. (2003) reported three sources of risks; environmental risk, network-related and organisational risk related sources. Adding to Jüttner et al.'s (2003) list of sources, Christopher and Peck (2004) classified supply chain risks into five categories: process, control, demand, supply and environmental risks. Christopher et al. (2011) used Christopher and Peck's (2004) category of environmental risk, and argued that this concept concerns sustainability, and offered a new risk category called environmental and sustainability risk. Anderson and Anderson (2009) combined the concepts of sustainability and risk and named it sustainability risk.

A review of literature on the categories of risk by Manuj and Mentzer (2008) reported four categories of risk; supply, demand, operational and security. Ghoshal (1987), cited in Manuj and Mentzer (2008), classifies risk into four categories; macroeconomic,

policy, competitive and resource risks. He further explains that resource risk is associated with unanticipated differences in resources and requirements in foreign markets. Tang and Musa (2011) categorised risk in terms of three important flows, material flow risks, financial flow risks and information flow risks.

Further, Vilko and Hallikas (2011) hold that lack of motivated and skilled workers are main source of supply chain operational risks. Lack of information sharing and communication, financially weak suppliers and their inability to adapt to technological changes can impact business continuity substantially and hence mentioned as main sources of risk (Zsidisin and Ellram, 2003; Gibb and Buchanan, 2006). Manuj and Mentzer (2008) focused on the importance of culture in global supply chain risk management, referring to it as a major source of risk. They, in particular, mentioned inadequate knowledge, beliefs, attitudes, behaviour and language as the main cultural elements becoming risks. Capacity shortages is also identified as a major source of supply-side risk which can be due to poor logistics performance, delivery reliability and bottle-necks in suppliers' production and operations (Wagner and Bode, 2006). Similarly, Zsidisin et al. (2005) argued that capacity constraints restricts suppliers' ability to respond to volatile and unpredictable market demands due to not having machinery, equipment, trained workers and employees. Zsidisin et al. (2000) further mentioned that inefficient technology and suppliers' inability to equip with innovative and advanced technology can cause retailer costs, threat to competitiveness and increase lead time therefore firms should be careful in their supplier selection criteria.

Tummala and Schoenherr (2011) also reported various risks which originate from lack of capacity, such as disruptions, delays, physical plant and supply risks. Vilko and Hallikas (2011) argued that long and complex global supply chains have less operational visibility and control outside the company's own functions, which reduces ability to identify risks. Their argument is consistent with Harland et al. (2003), who reported that a focal company in their study had less than 50 percent risk visibility and most of the risks identified were related to the company's own functions. Zsidisin et al. (2005) maintained that outsourcing and offshore manufacturing are two main culprits of loss of control and visibility resulting in increased supply chain risks and threatening business continuity. Similarly, Choi and Krause (2006) described that third and fourth-tier

suppliers with which the focal company has no direct contact and may not even be aware are part of the focal company's supply network are main sources of risk for the focal company. Similarly, Walker (2011), Jones and Hayes (2004) and Taplin (2006) also highlighted the risks of long, extended and invisible supply chain in the UK fashion industry, with lack of control. They also highlighted environmental and logistical risks in the UK fashion industry. Oke and Gopalakrishnan (2009) categorised risks into supply (imports, climate, man-made and natural disasters, socio-economic, and loss of key suppliers), demand (economic demand variability and uncertainty, product hazards, outbreaks, fads, ban on ingredients and forecasts error) and miscellaneous risks (increase gas prices, global consumption and regulations).

Tummala and Schoenherr (2011) argued that risk derivers/sources change constantly according to the changes in internal and external environment of an organisation. Therefore, it is imperative to continuously identify the sources and triggers of risk because changes in the internal and external environment will stimulate new types of risks, necessitating changes in business strategies and structures.

The above discussion highlights the importance of having a clear idea about the sources and types of risks as a basic and most important step in risk management. Therefore, it was of interest in this research to explore key risks in the UK fashion industry.

2.6.3 Risk Management and Risk Management Process

Risk management has become an integral part of business strategy and organisational activities. Its core purpose is to facilitate management activities to pursue organisational objectives, effectively and efficiently. Risk management is attracting higher importance in Business Management and Knemeyer et al. (2009) attribute this in part to recent high-profile natural and manmade catastrophic events. Christopher and Holweg (2011) argued that due to increased uncertainties and disruptions, business recovery is not usual any more, making it more important to manage risks effectively. Christopher and Lee (2004) argued that risk management in modern businesses has become increasingly challenging due to greater market uncertainties, globalisation of markets, and shorter product and technology life cycles, further outsourcing of manufacturing, distribution and logistics-related activities, all of which increase vulnerability and exposure to risks.

Tang (2006) claimed that due to disruptions posed by events such as terrorist attacks, hurricanes and earthquakes threatening business continuity, it is imperative to understand that risk management is as important as cost, particularly for business continuity.

As mentioned by Gaudenzi and Borghesi (2006), the main aim of risk management is to protect the business from adverse events and their effects. A valuable amount of literature focused on the motives of risk management, but findings by Kleindorfer and Saad (2005) seem more conclusive. They reported the following eight risk management drivers, which are similar to the sustainability management drivers (Anderson, 2005; Mollenkopf, 2006; Walker and Jones, 2012):

1- corporate image
2- liability
3- employee health and safety
4- regulatory compliance
5- community relations
6- cost reduction
7- product improvement
8- customer relations

Norrman and Jansson (2004) described risk management as a decision-making process in which decisions are made to accept a known or assessed risks and/or the implementation of actions to lower the probability of occurrence or consequences of those risks. Ritchie and Brindley (2007) further highlighted the role of risk management, arguing that through understanding and analysis of risk events, risk management develops strategies to manage them for better performance and to avoid negative consequences. However, in real life or in the contemporary business context, it is not possible to eliminate risks completely. In this regard, Ritchie and Brindley (2007) suggested that risk management via proactive approaches enables minimisation of the potential negative consequences if it is not possible to completely eliminate them. They further proposed the following mathematical equation as a risk management process:

Risk Impact= Likelihood of Occurrence X Consequences

Although the above mathematical equation shows a quantitative approach, which is its major limitation, however, researchers (Manuj and Mentzer, 2008; Norrman and Jansson, 2008; White, 1995) argued that probabilities can be assigned subjectively. Using this conceptualisation, Tummala and Schoenherr (2011) developed a SCRM process in global supply chain context which still use but subjectively assigned numbers. Olson and Wu (2010) suggested that we need to consider what can go wrong, what we might do to avoid that or how we can, possibly, reduce the impact. This consideration necessitates a formal risk management process. However, because of its origins of probability theory and its early adoption in the finance and insurance industry, risk management emphasis quantitative methods for its conceptualisation and operationalisation. For example, Cox and Townsend (2009) argued that the risk management process is initiated by assessing two factors: likelihood or probability of occurrence and the consequences or impact of those risk events, should that risk manifest itself.

Similarly, based upon his review of literature, White (1995) proposed a risk management process and suggested that risk assessment consists of three stages: First, risk identification, which is the determination of risk factors likely to occur in relation to a project. Second, risk analysis, that is, to find the most important risks based upon their likelihood and impact. This could be done by assigning certain numbers in order to quantify the importance or simply by description of risk, subjectively. Third, risk evaluation, concerned with deciding the most appropriate responses and management techniques for each risk and identifying the right person or party to manage each of the identified risks. Norrman and Jansson (2004) argued that the main focus of risk management is to understand risks and to address their probabilities and impact. They further argue that although different researchers have proposed different stages of risk management process, these are to large extent similar to each other. Therefore, based upon the above discussion, the following three main activities can be found in the risk management process (White, 1995; Trkman and McCormack, 2009; Kleindorfer and Saad, 2005; Norrman and Jansson, 2004; Manuj and Mentzer, 2008; Tummala and Schoenherr, 2011; Sinha et al. 2004):

Risk Identification: identifying risk sources, triggers and drivers.

Risk Prioritisation: risk assessment, evaluation and analysis to find out the most important risks for management.

Risk Mitigation: strategies for risk treatment, handling, reduction, monitoring, control, and contingency planning.

Overall, RM literature has suggested various methods to identify risks, for example, looking at drivers and sources of risks and the internal and external environment of the organisation. Similarly, researchers have used different methods to evaluate and prioritise supply chain risks, for example, categorising them into low, medium and high risks (Moore, 1983; Ritchie and Brindley, 2007), looking at their impact and consequences, high impact and high consequences risks will be prioritised as important risks for the management consideration. On the other hand, the main purpose of the risk mitigation strategies is to reduce the likelihood of occurrence to avoid or minimise the consequences. However, researchers (Harland et al, 2003; Manuj and Mentzer, 2008; Ritchie and Brindley, 2007, Christopher et al, 2011; Newall, 1977; Simon et al. 1997) suggested that supply chain risk management also depends upon the nature of business, characteristics of market and product, relationships with supply chain partners and integration, professionals in the organisation and their level of awareness and knowledge, geographic area, culture and size of the company. Therefore, risk mitigation strategies should be tailored according to the needs, nature, time available and experience of the management, according to the size of the project, its stage, importance and complexity involved. Thus, firms should take into consideration all those factors. Broadly three types of RM strategies were found in the literature, first, qualitative (identifying, describing, analysing and understanding risks, based upon assumptions and subjective judgements); second, quantitative (modelling risk in order to quantify its combined effect on the project) and third, a mix of quantitative and qualitative (Simon et al. 1997; White, 1995; Tang and Musa; 2011; Manuj and Mentzer, 2008; Harland et al. 2003; Liu et al. 2010; Christopher et al. 2011; Choi and Krause, 2006; Olson and Wu, 2010).

However, most of the existing risk management processes (Kleindorfer and Saad, 2005; Manuj and Mentzer, 2008; Sinha et al. 2004; Zsidisin and Ellram, 2003; Norrman and

Jansson, 2004; White, 1995) are still quantitative. Further, there is no agreed upon risk management processes in the literature and none of the existing risk management process has been designed in the context the UK fashion industry, suggesting a need to explore what sort of risk management process, if any, is followed by the UK fashion industry. Supply chain risk management is therefore discussed next.

2.6.4 Supply Chain Risk Management

Supply chain risk management, defined as "*the management of supply chain risk through coordination or collaboration among the supply chain partners so as to ensure profitability and continuity*" (Tang and Musa, 2011: 26), is the most interesting area for supply chain researchers. Supply chain trends, such as outsourcing, globalisation, improved infrastructure and information technology, cheap labour and raw material (Manuj and Mentzer, 2008; Christopher et al. 2011) have extended supply chains into longer and complex networks. This has increased supply chain vulnerability, fragility and frequent operational disruptions, making supply chain risk management (SCRM) an important issue and critical challenge. For example, Tang and Tomlin (2008) reported that 60% of firms in their study were vulnerable to disruptions and further due to these trends, 42% of the companies managed more than five different supply chains to produce multiple products for multiple markets. Global spread of supply chains further compromises agility and responsiveness, which are considered essential to compete in modern demand driven and volatile markets such as fashion. Added to this are factors such as shorter product life cycles, reduction of supplier base, buffers and inventories, increased demand for on time deliveries, changes in consumer tastes and preferences, technology shifts and change in supplier priorities.

Another reason for the heightened interest in SCRM is the recent increase in high profile incidents such as unpredictable disasters, terrorist attacks, wars, fires, and earthquakes, hurricanes Katrina and Rita and the tsunami of 2004. The rate of such incidents has dramatically increased in the last decade (Blome and Schoenherr, 2011). Due to such recent incidents and business failures, insolvencies and bankruptcies, SCRM has become a key concern and the biggest challenge for global supply chains to be able to survive and compete globally. Therefore, the aim of SCRM is to survive (Pujawan and

Geraldin, 2009), to avoid delays, reduce costs and improve customer service (Blackhurst et al. 2008), to avoid major disasters and operational disruptions (Norrman and Jansson, 2004), to increase chances of quick recovery and enhance resilience (Christopher and Peck, 2004; Sheffi and Rice, 2005). Despite the increased research interest in SCRM, however, there appears to be no consensus on what constitutes SCRM.

Further, supply chain structures and philosophies of lean, JIT, reduced assets and cost, streamlining flows to eliminate buffers and redundancies, on the one hand, enabled global supply chains to be operationally efficient but on the other, increased risks substantially (Christopher and Holweg, 2011). This is because the business structures and strategies were designed under the assumptions of a stable environment which are not applicable in the modern turbulent, volatile and highly unstable business environment (Lee, 2004; Christopher and Holweg, 2011). Therefore, Christopher and Holweg (2011) suggested a move from dynamic to structural flexibility by designing adaptable supply chains, where performance measurement integrates flexibility, adaptability, responsiveness and agility rather than traditional accounting measures of performance based on financial parameters. Consequently, SCRM research reports the balance of cost efficiency with agility, adaptability, and alignment (Lee, 2004), supply chain re-design (Christopher and Holweg, 2011), product design (Khan et al. 2008), developing structural flexibility by getting closer to the centre of gravity or reducing supply chain length (Christopher and Holweg, 2011), close relationships, information sharing (Christopher and Lee, 2004), partnerships, cooperation and collaboration with supply chain partners (Christopher et al. 2011), integration of sustainability (Christopher et al. 2011), designing resilient supply chains (Christopher and Peck, 2004; Peck, 2006), and planning for disruptions and contingency (Tummala and Schoenherr, 2011).

Supply chain literature proposes various models or processes to manage supply chain risks (Jüttner et al. 2003; Manuj and Mentzer, 2008; Tang, 2006; Christopher et al. 2011; Tummala and Schoenherr, 2011; Ritchie and Brindley, 2007; Zsidisin and Ellram, 1999). For example, Norrman and Jansson (2004) developed SCRM for Ericsson, Kleindorfer and Saad (2005) proposed a methodology to manage SC disruptions, Cucchiella and Gastaldi (2006) proposed the real option approach to manage SCR,

Gaudenzi and Borghesi (2006) used the analytical hierarchy process (AHP), while Pujawan and Geraldin (2009) proposed a 'house of risk' a proactive supply chain risk management approach under quantitative assumptions.

In SCM literature, risk management has been investigated from different perspectives, for example, from supply network level (Harland et al. 2003), procurement and supply (Zsidisin et al. 2000), purchasing and outsourcing (Hallikas et al. 2002; Lonsdale, 1999) environmental risk (Cousins et al. 2004) and operational level (Liu et al. 2010) but these studies do not extend to the holistic network or total supply chain. Moreover a major shortcoming of these models is either they heavily rely upon financial outcomes (Khan et al. 2008; Christopher and Holweg, 2011) or their level of analysis is at dyadic level or a limited number of supply chain tiers (Tang, 2006). Furthermore, current knowledge is insufficient (Hofmann et al. 2014) overly descriptive (Wagner and Bode, 2008) and underdeveloped at complex supply network level (Harland et al. 2003). Although SCRM is a fairly well developed area, it appears that risk management research in the global supply chain context, especially in a demand driven, volatile and short product life cycle context such as fashion is still missing. As discussed above, in a predictable and relatively stable environment quantitative and statistical tools can be applied for SCRM. However, in a complex, unpredictable and unstable supply chain context, risk management needs wider approaches and should be supported with qualitative approaches and subjective assumptions. For such complex and unstable business environments, heavy reliance on quantitative information will be imperfect for decision making and could lead to other risks, due to one sided and narrow information (Gaudenzi and Borghesi, 2006). Furthermore, none of the existing SCRM processes has been designed or explored in the context the UK fashion industry which is one of the main motives for this research.

2.6.5 Supply Chain Risk Management Strategies

There are countless supply chain risk management strategies proposed by many researchers. This section will further shed light on some of the most cited risk management strategies in the supply chain management discipline.

Building partnerships with multiple stakeholders is described as a risk management strategy in supply chain literature. For example, Herbane et al. (2004) asserted that business continuity planning and processes should be strategically configured and one of the best ways to do it is the inclusion of strategic partnerships beyond the organisational boundaries. By the same token, Faisal et al. (2006) cited information sharing, trust building and collaborative relationships between supply chain partners as enablers of risk mitigation. Ritchie and Brindley (2007), Peck (2006), Anderson and Anderson (2009) focused on a wider set of stakeholders and favoured the inclusion of shareholders, suppliers, creditors, employees and customers, competitors, government and society in SCRM. Ritchie and Brindley (2007) further proposed risk management responses which demonstrate a collaborative and capacity sharing approach, for example, joint training and development programmes, regular joint reviews, joint proactive assessment and planning exercises, joint strategies, inter-relationship structures and relationship marketing, agreed performance standards, relationship development and risk insurance and information sharing and development of shared management information system.

Trkman and McCormack (2009) argued that fast changing market conditions might induce firms to coordinate, share information and communicate more openly to reduce uncertainty and to respond to market changes. However, Chatterjee (2004) suggested that communication, joint decision making, alliances and partnerships can introduce delays and limit proactive measures, firms prefer to act on their own. Ritchie and Brindley (2007) argued that nevertheless information sharing and communication is important for organisations to manage risks and increase performance by proactively managing issues such as agreements or disagreements on specifications, quality, price and to help manage these issues at a lower level in the decision making process. However, on the one hand, establishing long term relationships, partnerships and alliances is are preferred as a risk mitigation strategy (Zsidisin et al. 2000, 2003; Eisenhardt, 1989; Ellram, 1991) and on the other it is argued that it could cause the locked in effect and cause sourcing to become over dependent upon suppliers, and hence cause risk rather than managing it (Smeltzer and Siferd, 1998; Lonsdale, 1999; Pilling and Zhang, 1992; Lonsdale, 2001).

Harland et al. (2003) argued that risk management approaches largely depends on the nature of market, industry and geographic area in which the organisation is operating so all these factors should be considered when designing risk management strategies. Similarly, Smallman (1996) argued that risk management also depends upon the organisational structure, strategy, culture and leadership.

Tang (2006) proposed nine robust strategies to mitigate supply chain disruptions which broadly fall in the capacity development sphere, to ensure business continuity. They include having strategic stock at different locations, providing economic incentives to cultivate suppliers if there are limited suppliers providing a particular product or service, flexible transporting such as the use of multi-model and multi-carrier transportation and multiple routes. Gibb and Buchanan (2006) and Herbane et al. (2004) asserted the need for educating, skills development and cross-training workforce for capacity development and business continuity management. Manuj and Mentzer (2008) draw our attention to the moderating role of team composition in SCRM and argued that operational decisions are inter-linked and inter-dependent. Therefore, in order to optimise supply chain operations, decision making should be team-based.

Tang and Musa (2011), Peck (2006) and Handfield et al. (1999) proposed that SC risks, particularly production capacity risks, can be managed by means of technological innovations, skills development and enhancing quality capacities. Technologies such as radio frequency identification (RFID) have enabled organisations to increase visibility, velocity and process control (Christopher and Lee, 2001). However, researchers cautioned that technological implementation can be a challenging task due to organisational culture, lack of coordination and integration and not having strong relationships with supply chain partners. Therefore, literature suggests cultural change, making alliances and partnerships and developing a reward and incentive system before making any technological investments for SCRM. Moreover, Trkman and McCormack (2009) cautioned that a firm should integrate only with those suppliers who are able to better manage technological turbulence and should switch from suppliers that are unable to do so, in order to retain the chain's competitive advantage and reduce risks.

Researchers also shed light on innovations in new product and process development to manage supply chain risks effectively. For example, Tang and Tomlin (2008) proposed process risk mitigation strategies by designing flexible processes via flexible manufacturing, where production quantities can be shifted across plants or machines. They further suggested that product demand risks can be mitigated by designing flexible product via postponement, where production quantities are shifted across different products. However, researchers have also highlighted the negative impact of constant new product and process introductions, such as increased complexity and risks. Similarly, Christopher and Holweg (2011) maintained that the constant flow of new product introduction and increased product variety intensifies the organisational search for complexity reduction. They proposed the use of late product configuration, increased local-for-local production, using alternative distribution channels and introducing vendor managed inventory for greater flexibility, to reduce complexity and managing supply chain risks. Rao and Goldsby (2009) similarly acknowledged that innovations can pose competitive uncertainty, leading to supply chain risks. They further elaborated that innovations in a product market can affect an industry's production processes or products, posing a threat to the entire supply chain, because innovations can potentially change established patterns of competition and coordination among firms.

In terms of control, Christopher and Lee (2004) argued that most supply chains lack control, even when they have visibility and information. This is partly due to supplier inefficiencies, inflexible production lines or infeasible changes in production schedule. SCRM literature also describes control enhancement techniques such as six sigma tools, control charts and failure modes and effect analysis (Christopher and Lee, 2004). However, the major drawback of such tools is that they are only applicable to repetitive activities. Therefore, Christopher and Lee (2004) suggested a more collaborative control approach for the wider supply chain, such as supply chain event management, where different partners in the supply chain network identify different nodes and links for different flows across the network. In this approach, various control limits are agreed and if a level of activity goes outside the limit, an alert is automatically generated to enable corrective action. Technological advancements such as RFID, shared data environments and event management software, vendor-managed inventory and

collaborative planning, forecasting and replenishment further enabled supply chains to enhance visibility and control (Peck, 2006; Christopher and Holweg, 2011). However, control measures to eradicate variability often result in rigidity of supply chain structures and interactions, which might amplify rather than dampen variability. Thus, there is a need to anticipate rather than react to turbulence, and design and integrate structural flexibility into supply chain designs. Christopher and Holweg (2011) argued that asset sharing is a main characteristic of supply chains that exhibit structural flexibility. They further mentioned that many British retailers share their physical assets such as factories, distribution centres or trucks with other companies, even with competitors, viewing it an opportunity to create additional economies of scale. Tang and Musa (2011) also reported production and supply capacity as a major risk element and proposed alternative sourcing in and out of country, outsourcing, building a web of flexible partners and early supplier involvement to mitigate such risks.

Ritchie and Brindley (2007) argued that risk management responses range from independent and individualistic responses, such as insurance or establishing supplier service levels, to a more cooperative approach such as sharing strategic information and relationship development. They further reported that the most widely used risk management responses are risk insurance, information sharing, relationship development, agreed performance standards, regular joint reviews, joint training and development programmes, joint pro-active assessment and planning exercises, developing risk management awareness and skills, joint strategies, inter-partnership structures and relationship marketing initiatives. A large number of researchers (Rao and Goldsby, 2009; Miller, 1992) placed special emphasis on cross-training workforce, having multifunctional teams, skills and knowledge development for greater flexibility and to enable a decision maker to holistically understand the risk profile in the organisation, leading to its effective and proactive management.

Due to the recent increasing natural and manmade catastrophic events, there is an increased interest of SCRM researchers in focusing on such issues to design mitigation strategies or frameworks. For example, Knemeyer et al. (2009) proposed five counter measures in order to manage catastrophic events. The first and the most important countermeasure is to assume that risk prevails and then, second, to offset the impact of

a catastrophic event by insurance; third, reduce dependence on key/strategic locations by redesigning the business model or operation; fourth, invest in key locations to minimise the consequences of catastrophic events by redundancy or flexibility while the fifth countermeasure is to move a key location by closing facilities and opening elsewhere.

SCRM literature also reported that leadership attitude plays an important role in risk management. For example, Tang (2006:36) investigated the reasons why firms perceive serious supply chain risks and yet do not take significant actions and reported that leadership attitude is the main reason, since "*nobody gets credit for fixing problems that never happened*". As Herbane et al. (2004) argued, business continuity management necessitates that senior management demonstrate the importance attached to business continuity management, provide a longevity view to prevent an organisational perception that continuity is a temporary project and shows commitment to the business continuity management process. However, Peck (2006:139) noted that in practice, "*managers by definition manage what is within their own sphere of responsibility and locus of control*". She pointed out that no one firm, manager or person manages the whole end-to-end supply chain; instead they manage parts or aspects of it. Managers are operational specialists or CEOs having responsibilities for shareholder value and corporate governance, and each will perceive supply chain risk subjectively through the lens of their own goals and performance measures (Peck, 2006).

Further, Smallman (1996) suggested risk management from organisational learning perspective (history of the organisation) to learn from past events, mistakes and learning from how different risk issues were managed in the past and what were their results. Mitchell (1998) suggested the use of already approved suppliers which can be found on company records, buyers, external sources, trade magazines and trade shows etc. Newman et al. (1993) and Zsidisin (2003) suggested buffers which includes inventories and excess capacity cushions. Supplier certification programmes were suggested as a supply chain risk mitigation strategy by Zsidisin (2003). Similarly, Zsidisin et al. (2000) also suggested focusing on core competence as a risk mitigation strategy. This section discussed various strategies for SCRM; however, none of them was

designed or suggested for the risk management in the UK fashion industry. Thus, it will be interest of this research to explore how the UK fashion industry is managing its risks.

2.6.6 Supply Chain Sustainability Risk

Risk and sustainability are widely discussed concepts in SCM but in isolated and standalone fashion. The combined discussion of both has only recently gained coverage in the literature and as yet there is no consensus on what sustainability risk is how it can be defined, how it impacts the operational performance of supply chains and how it can be managed.

As defined by Anderson and Anderson (2009), *sustainability risk management concerned with environmental and social risks*. They further categorised it into six categories: global warming/climate change, boycotts, environmental liability, ecosystem, social responsibility and directors' and officers' liability. Particularly in supply chain management, '*Sustainability risk refers to increasing vulnerability across the chain due to the negative impacts of global sourcing on economic, social and environmental sustainability"* (Christopher et al. 2011). The main limitation of this definition is its limited focus on global sourcing rather than holistic SCM.

Anderson and Anderson (2009) are considered the first to provide a unified discussion on sustainability risk management. They maintain that risk based information should be an input for sustainability decision making while sustainability related information should be part of the risk management process, to ensure the long term sustainability of a project. However, their account is subject to a large number of criticisms. For example, their definition is vague and does not really explain whether sustainability risk is something new or a re-naming of sustainability issues. Further, Hofmann et al. (2014) criticised their aggregation of dissimilar and non-relevant risks into the category of sustainability risk. Foerstl et al. (2010) are considered as the first to provide a framework for managing sustainability risk in the supply chain. They proposed four indicators for sustainability risk assessment: physical properties of the supplied product, related production processes, supplier's geographic location and supplier's past performance. However, they did not provide a definition of sustainability risk, which is essential to conceptualise and operationalise it in supply chain context. Criticising their

work, Hofmann et al. (2014:163) argued that Foerstl et al.'s (2010) sustainability risk management framework was '*not based on an analysis of how these risks materialize as losses*'. Hofmann et al. (2014) also defined sustainability risk and provided a supply chain sustainability risk management framework. However, there are some major limitations in their account. The first drawback is their conceptualisation of sustainability focusing on three elements, social, ecological and ethical, ignoring the economic dimension. Second, their proposed definition of sustainability risk as '*a condition or a potentially occurring event that may provoke harmful stakeholder reactions*' (p. 168) is largely based upon a cause and effect understanding of risk, whereas risk is also referred as a subjective phenomenon (Mitchell, 1999).

Hofmann et al. (2014) further argued that ordinary supply chain risks are triggered by disruptions, while for a risk to be called a sustainability risk it must be based upon critical stakeholder reactions. This argument contradicts the sustainability characteristics of longevity, continuity and viability noted by Costanza and Patten (1995). Sustainability risk does not have to be based upon critical stakeholders' reactions; rather, ordinary risks can jeopardise continuity, longevity and viability of supply chains and thus have potential to manifest as a risk. Third, their proposed framework is questionable from an implementation perspective, as it demands two different implementation considerations: one from a sustainability perspective (stakeholders) and the other from an ordinary risk perspective (supply chain disruption). In the context of this research, a fourth limitation is that their selected case companies were not operating in as volatile and unpredictable demand situation, like fashion supply chains. Therefore, there is still a strong need to empirically investigate the phenomenon of sustainability risk in the context of volatile and unpredictable global supply chains such as supply chain of the UK fashion retailer, to provide a well-grounded conceptualisation of sustainability risk, leading to a framework of strategies which can enable the UK fashion industry to manage its supply chain sustainability risk in order to survive and compete globally.

Similarly, according to the researcher's knowledge, supply chain sustainability risk management (SCSRM) strategies are still missing in the literature. Available accounts are guidelines to manage sustainability, rather than concrete SCSRM strategies. For

example, Anderson and Anderson (2009) argued that the following initiatives could be helpful, which to large extent seems a proactive approach to manage sustainability, rather than SCSRM strategies:

❖ Preparing a sustainability report
❖ Engaging in waste reduction and voluntary reduction of greenhouse gases
❖ Using a more efficient energy system
❖ Incorporating more fuel-efficient vehicles into the transportation system
❖ Putting up green buildings
❖ Developing partnerships with NGOs
❖ Designing products that consider the environment
❖ Anticipation regulatory changes
❖ Seeking certifications
❖ Enhancing worker-based programmes

From the above account it is evident that Anderson and Anderson (2009) are presuming sustainability as eco-sustainability while making suggestions to manage it but still not as SCSRM strategies. Furthermore, none of the existing risk management and sustainability management strategies has been designed in the context of the UK fashion industry. Therefore, there is a need in the literature to design SCSRM strategies for the UK fashion industry so that the industry can manage supply chain sustainability risk more effectively, efficiently and proactively. If interested, the reader is referred to Appendix One for more discussion of SCRM strategies.

2.7 SUMMARY OF GAPS IN THE LITERATURE

The gaps have already been highlighted earlier in this chapter. However, the following are gaps statements and emerging research questions:

A vast amount of literature in different disciplines has offered definitions of sustainability and risk which, in most cases, are competing, contradictory but also overlapping but yet it is unknown how the UK fashion industry define sustainability and risk and whether the industry perceive sustainability and risk as one and the same thing or two different concepts. Therefore, it is imperative to find out how the UK fashion

industry defines sustainability and risk so that sustainability management and/or risk management processes can be designed in line with what the industry perceive as sustainability and risk. This leads to the following research questions:

How does the UK fashion industry define sustainability?

How does the UK fashion industry define risk?

Risk and sustainability issues are discussed in fashion supply chains but in a standalone fashion, treating sustainability and risk two different concepts. It was also found in the literature that existing accounts are deficient in defining supply chain sustainability risk. The limited efforts made are vague and lack conceptual understanding, operationalisation and materialisation of the concept, which is necessary to design supply chain sustainability risk management strategies. This leads to the following research question:

How does the UK fashion industry define supply chain sustainability risk?

Risk management literature also discussed various risk sources and management strategies but none of them found suggesting how the UK fashion industry can manage its supply chain risks. Similarly, it was mentioned repeatedly that most of the sustainable initiatives might not be possible to integrate into fashion supply chains due to short product life cycle, volatile and unpredictable demand and fast changing market characteristics. However, there are no guidelines specifically for the UK fashion industry on how to integrate sustainability into its supply chains. Moreover, none of those issues (risks and sustainability) were discussed and explored in the context of the UK fashion industry. Further, few challenges to the UK fashion industry have been identified in the literature, no solution or empirical evidence for their management was found which leads to the following research questions:

How does the UK fashion industry manage supply chain sustainability and/or risk?

How can the UK fashion industry manage supply chain sustainability and/or risk?

How can the UK fashion industry manage its current challenges?

A large number of factors were discussed in the literature which can impede organisations from managing their sustainability and/or risks. However, it is still unclear whether the UK fashion industry is able to manage such issues or not. If not, then what could be potential barriers? Similarly, the literature review also highlighted constraints and motives in designing sustainable supply chain management. However, it is unknown what motivates and what impedes the UK fashion industry to integrate sustainability into its operation, which is necessary to understand to suggest effective and targeted solutions or strategies. This leads the to the following research question:

Why might the UK fashion industry not be able to manage its supply chain sustainability and/or risk?

Literature agreed that sustainable initiatives and sustainable supply chains lead to superior performance and positively impact firm performance. However, it was noted that due to fashion characteristics, sustainability initiatives can negatively impact firm performance, especially when sustainability favours resource conservation, while fashion promotes resource consumption; sustainability focus on life cycle extension while fashion focuses on short life cycle etc. Similarly, it was mentioned that risk management largely depends upon the characteristics of industry, market and product, geographic area in which the firm or supply chain is operating, firm size, structure, strategy, resources, culture, etc., which need to be taken into consideration for risk management. However, it is yet not clear what factors or how sustainability and/or risk impact the operational performance of the UK fashion industry, which leads to the following research question:

How can supply chain sustainability and/or risk impact the operational performance of the UK fashion industry?

Based upon the above highlighted gaps and questions, the following five research questions have been designed by combining all the above research questions:

1. How does the UK fashion industry define supply chain sustainability risk?
2. How does the UK fashion industry manage supply chain sustainability risk?

3. Why might the UK fashion industry not be managing its supply chain sustainability risk?

4. How can supply chain sustainability risk impact the operational performance of the supply chains in the UK fashion industry?

5. How can the UK fashion industry manage its supply chain sustainability risk?

Following this theoretical part of the thesis, the next chapter explains how empirical research was designed and conducted in order to address the above research questions.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 INTRODUCTION

The purpose of this research was to explore the phenomenon of sustainability risk in the context of the UK fashion industry. Therefore, it is imperative to incorporate research methods and a philosophical stance which facilitate the production of new knowledge and theory that could be equally useful for academia and practice. Furthermore, it is vital for a researcher to understand fundamental differences in different philosophical underpinnings and research methodologies because the selected approaches will significantly influence the way the research will be conducted and ultimately the quality and value of the final outcomes of the empirical investigation.

In this chapter, the researcher will first highlight different philosophical stances and research paradigms which a researcher can take, depending upon the research topic and nature of the investigation. This will be followed by a discussion on research quality issues. To this end, the researcher will also shed light on the selected philosophical stance and measures to ensure the research quality. The following sections will discuss research method and data collection strategies. The interview guide and pilot interviews are also discussed as means to improve data quality issues and to gain initial insights on the research subject areas. Section 3.10 highlights the data analysis strategy applied to the collected data to produce meaningful results.

3.2 UNDERSTANDING RESEARCH PHILOSOPHY

This section will shed light on three philosophical stances: those of ontology, epistemology and axiology. Subsequent sections will further shed light on their implications for this research.

3.2.1 Ontology

Ontology is concerned with the nature of reality and whether the social world is external to social actors or the social actors fashion it (Sobh and Perry, 2006). The central theme in the ontology debate is whether social phenomena should be considered as single

objective entities that have a reality external to social actors or should be considered as multiple social constructions built up from the actions and perceptions of those social actors (Bryman and Bell, 2015; Holden and Lynch, 2004). Ontology thus has two extreme positions: objectivism and subjectivism.

Objectivists believe that social reality is objective and external to the researcher and that the research participants must follow an externally given reality. Objectivism believes that a social phenomenon and its meanings are already in existence and independent of social actors. In contrast, subjectivists believe that social reality is socially constructed and therefore subjective (Collis and Hussey, 2009; Holden and Lynch, 2004) . Further, subjectivism maintains that social actors have their own sense of reality and therefore there are multiple realities. Saunders et al. (2012) argued that subjectivism regards reality as a social construct and it is essential for a researcher to interpret participants' opinions in their social context to understand in a true sense what they actually mean in essence, to create and claim new and real knowledge.

3.2.2 Epistemology

Epistemology concerns the question of what is or what should be regarded as acceptable knowledge and in a broader sense it deals with the nature of knowledge and how knowledge can be gained (Sobh and Perry, 2006; Saunders et al. 2012). Epistemology further examines the relationship between the researcher and the topic of the research. In this regard there are two main positions; positivist and interpretivist (Collis and Hussey, 2009).

Positivists believe that in order to obtain acceptable knowledge a phenomenon should be observable and measureable. As a researcher, a positivist maintains an independent and objective stance from what is being researched. Further, a positivist maintains the position of a natural scientist during the research and uses large samples in an artificial setting to test a theory or hypothesis (Holden and Lynch, 2004). Positivists usually prefer quantitative, statistical and numerical data in order to produce very precise and objective results which will have high reliability, low validity and are generalisable to the population from which the sample was drawn (Collis and Hussey, 2009; Easterby-Smith et al. 2012).

In contrast, an interpretivist respects feelings and interaction between the researcher and what is being researched. Interpretivists believe that knowledge cannot be gained without acknowledging social actors and the role they play (Holden and Lynch, 2004). Therefore, as a researcher an interpretivist uses small samples but carries out research in a natural setting, in the context of social actors. Interpretivists aim to develop new theory or propositions rather than testing those already developed. Further, instead of using quantitative or hard data, interpretivists use subjective, qualitative but rich data (Bryman and Bell, 2015). The findings of an interpretivist are usually less reliable, but are regarded as highly valid. However, Collis and Hussey (2009) maintain that the findings of an interpretivist can be generalised to another similar setting.

The philosophical stand of *social constructionism* further guides the researcher's role as an interpretivist (Andrews, 2012; Young and Collin, 2004). According to Denzin and Lincoln (2000:197), "*we are all constructivists if we believe that the mind is active in the construction of knowledge*". They further argued that knowledge creation is an active process in which our mind constructs abstractions or concepts from social actors' impressions. Consequently, it can be said that our mind does not discover or find knowledge, as much as we make or construct it (Denzin and Lincoln, 2000; Andrews, 2012). Similarly, our mind continuously invents concepts, schemes and models to make sense of experiences and we further test and modify our constructions in the light of new experiences (Denzin and Lincoln, 2000). In social constructionism, social actors and their context are at the centre of interpretation; as noted by Denzin (1997:245), *'There is no way of experiencing the real relations of a particular society outside of its cultural and ideological categories'*.

3.2.3 Axiology

Axiology is concerned with values that the researcher holds and what role they play at different stages during a research process (Martin et al. 2010). Positivists, while regarding the phenomenon under investigation as an object, believe that the research process is value-free and un-biased. Objectivists are more interested in investigation of causal relationships between objects, while maintaining that those objects were already existed before they initiated the investigation. Furthermore, objectivists hold the view

that objects under investigation are unaffected by their research and after their investigation will be same. Collis and Hussey (2009) argued that these beliefs are common in natural science studies, but less convincing in social sciences, which are concerned with behaviours and activities. This argument leads to the view held by interpretivists, who acknowledge that the researcher holds values, the research process is value-laden, and therefore biases are present in the research process. These values, beliefs and bias have potential to make research findings questionable because the research process will be influenced by the way the researcher poses questions, the significance the researcher assigns to certain issues and the way the researcher analyses and interprets data (Martin et al. 2010). However, Saunders et al. (2012) made some recommendations about how interpretivists can avoid bias. According to them, the researcher should select different sources, see the object from different perspectives, and choose methods which have potential to minimise or remove the influence of bias.

In relation to axiology, here are three things which this research acknowledges can impact the research process significantly. First, the researcher is from Pakistan, a country which is highly collectivist and where norms and values are part of every activity of social life. Further, Pakistan is a country where the culture and way of life reflects beliefs that a single absolute reality already exists. This leads to an inclination towards the objective and generalisable stance of the quantitative study. However, with the breakthrough developments in media, social networks, and telecommunication, as well as the trends toward education and urbanisation, there is an obvious change in previous long prevailing beliefs and ideologies. Furthermore, in metropolitan cities such as Karachi, Lahore and Islamabad, a trend to individualism can also be seen.

Second, the researcher believes in Islam, a religion which presents its followers with two sources as absolute reality: the Quran (the Holy book), and the 'Sunnah and Hadith' (sayings and doings of the Prophet of Islam). Followers are strongly advised to follow these two sources, without any question, as a way of life and behaviour as already existing absolute reality. Nevertheless, Muslims are also famous for trade, as it is known that most traders during the period of Prophet Muhammad (PBUH) visited Makkah and Medina for water, to pray in Makkah and for trade. Furthermore, one of the reasons suggested for the spread of Islam in different parts of the world is the Muslim traders

and merchants. However, Islam also allows its followers to conduct Ijma, a process by which Muslim scholars find solutions for new or complicated issues. Overall, this implies a positivist stand but with the potential to be interpretivist.

Third, the researcher has experience of the clothing and textile industry and debate on sustainability and risk. The Pakistani textile and clothing industry became famous all over the world due to its vertical integration, cheap but highly skilled labour, availability of raw materials and quality of its output. The researcher has witnessed the exploitation and misuse of labour and natural resources while serving international retailers, mostly in the US and Europe. Further, the researcher has seen the extensive use of chemicals and pesticides, lack of a proper market and the distribution process for cotton and other outputs. Furthermore, the researcher has seen clothing and textile factories on fire, use of child labour, underpaid workers, workforce discrimination, building collapse and dying workers.

The above discussion shows that the researcher has bias and a value-laden approach for research on clothing and textile industry from a sustainability and risk perspective. Therefore, inevitably, these preconceptions and experiences will significantly impact the research process, making it value-laden and biased. However, discussion in this chapter at various places, especially on research quality issues, will demonstrate how the researcher tried to minimise biases.

The above discussed philosophical issues broadly feed into overall views or concepts of the world, known as paradigms. The next section will shed light on different paradigms and their main features.

3.3 RESEARCH PARADIGMS

This section sheds light on paradigms, paradigm types and types of research, qualitative and quantitative and their discussion in the context of the SCM discipline.

3.3.1 Paradigm

An individual's worldview is referred to as a *paradigm*. Collis and Hussey (2009:55) maintained that "*a research paradigm is a philosophical framework that guides how*

scientific research should be conducted", while Guba (1990:17) holds that a paradigm is a *"basic set of beliefs that guides action"*.

Collis and Hussey (2009) commented that due to the perceived inadequacies of old paradigms, people's ideas about the nature of knowledge and reality have changed over time and in response to that, new paradigms emerged which, according to them, are captured in the paradigm definition by Kuhn (1962:viii, cited in Collis and Hussey, 2009:55): *"Paradigms are universally recognized scientific achievements that for a time provide model problems and solutions to a community of practitioners"*. For hundreds of years only one research paradigm was in existence as a source from where all scientific achievements were believed to stem and that source was known as natural sciences (Kuhn, 1962). However, with the onset of industrialisation and capitalism, researchers started focusing on social phenomena and the social sciences (Collis and Hussey, 2009). When a new paradigm emerges scientists look at the world in a different way, thus the beliefs which guide behaviours and actions in one era might not be appropriate in another era (Hollinger, 1994).

Paradigms have different levels and can be used at any level (Nurrel and Morgan, 1979), for example at the following three levels:

❖ The philosophical level: reflects basic beliefs about the world.
❖ The social level: concerned about the research process and the researcher and guides how the researcher should conduct his/her research.
❖ The technical level: concerned with methods and techniques which a researcher should adopt while conducting research.

There is no right or wrong paradigm and therefore the choice of a paradigm is entirely up to the researcher but partly it is determined by the nature of the investigation, the researcher's philosophical stance and the aim of the research (Mackenzie and Knipe, 2006). Similarly, in the current research philosophy there are two extreme positions of quantitative and qualitative approaches. However, Mackenzie and Knipe (2006), Collis and Hussey (2009:61) and Nurrel and Morgan (1979:3) highlighted that there are many other approaches and paradigms between these extremes (Figure 3).

Figure 3: Objective and Subjective Dimensions

Objectivism ⟵	Ontology	⟶ Subjectivism
Positivism ⟵	Epistemology	⟶ Interpretivism
Unbiased ⟵	Axiology	⟶ Biased
Quantitative ⟵	Methodology	⟶ Qualitative
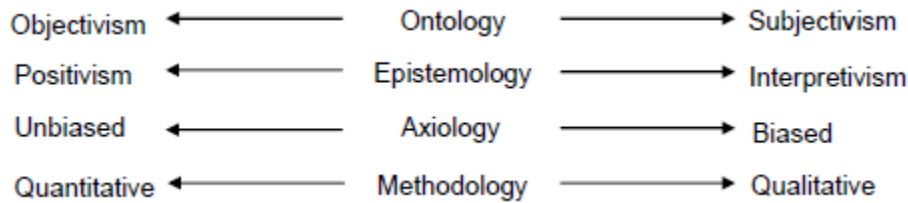
Source: Adapted from Nurrel and Morgan (1979: p. 3)

Based upon the above distinction, the subsequent discussion also integrates a debate on qualitative and quantitative research. An interpretivist usually takes a subjective stance and is regarded as subjectivist in ontology; therefore, he/she leans towards qualitative research approaches. In contrast, a positivist usually takes an objective position in ontology and therefore adopts quantitative research approaches. In terms of axiology, the former takes a value-laded and therefore adopts qualitative research and the latter an un-biased stance and adopts quantitative research.

The main purpose of this research was to explore how the UK fashion industry manages its supply chain sustainability risk. Furthermore, it aims to deeply explore the phenomenon of sustainability risk in the contemporary context of the UK fashion industry. Therefore, the ontological position of this research is subjectivism. Exploring managers' perceived understanding of sustainability risk in their contemporary context will require interpretation of multiple realities to find out what they mean by sustainability risk and how do they manage it (Bryman and Bell, 2015). Therefore, interpretivism is the research epistemological position, leading to an overall approach of qualitative research.

Further, due to his subjectivist and interpretive position, the researcher acknowledges that from an axiological perspective this research is subject to bias and value-laden. However, various mechanisms can be adopted to minimise bias and to produce less contaminated results, whilst acknowledging that it might not be realistic and possible to avoid personal values and bias completely. This issue will be further discussed in terms of what approaches were adopted and how the research integrated different means of data collection, management, analysis, interpretation and triangulation.

The following section sheds light on two ways in which research can be conducted, namely, inductive and deductive: qualitative and quantitative approaches.

3.3.2 Inductive versus Deductive

For any empirical research, usually two approaches are used, deductive and inductive. Depending upon the nature of the investigation, the researcher can use either of them or a more mixed approach. However, the deductive approach is associated with positivism and objectivism and therefore usually follows a quantitative research approach. In contrast, the inductive approach is associated with interpretivism and subjectivism and therefore follows a qualitative approach (Bryman and Bell, 2015).

In the deductive approach, the researcher deduces a hypothesis on the basis of what is known about a particular domain and of theoretical considerations in relation to that domain (Bryman and Bell, 2015) and then the researcher designs measureable and quantifiable variables to test the hypothesis. In the deductive approach, theory guides research; the researcher first develops a theoretical or conceptual framework and then tests it by choosing large samples in order to generalise findings (Collis and Hussey, 2009). Questionnaires and surveys are common methods for a deductive approach and the overall process is guided by the theory or the hypothesis derived from it.

In contrast, the inductive approach follows an opposite process and intends to build theory. Therefore, theory is the outcome rather than a starting point. Here, the researcher first understands the research context and then inferences are drawn or theory is developed from the observations. The inductive approach is largely based upon qualitative data and therefore less structured as compared to the deductive approach and several iterations are made during data collection and analysis. Furthermore, due to biased views from research participants, the value-laden nature of the research and heavy reliance on subjective inferences by the researcher, findings from the inductive approach are less generalisable. Responding to these criticisms, Easterby-Smith et al. (2012) maintained that the researcher might not want generalisation but to deeply understand a complex phenomenon with unclear boundaries in its actual context, where it is not possible to design a testable hypothesis.

As discussed above the inductive approach leads to qualitative research while deductive approach leads to quantitative research. Bryman and Bell (2007) presented the following contrast (Table 4) between qualitative and quantitative research which also reflects differences in the nature of data collected using these approaches:

Table 4: Some Contrasts between Quantitative and Qualitative Research

Quantitative research	Qualitative Research
Numbers	Words
Hard, Reliable data	Rich, deep data
Researchers' point of view	Participants point of view
Researcher distant	Researcher close
Theory testing	Theory emergent
Static	Process
Structured	Unstructured
Generalization	Contextual understanding
Macro	Micro
Behaviour	Meanings
Artificial setting	Natural setting

Source: Bryman and Bell (2007:426)

Accordingly, Saunders et al. (2012) argued that quantitative and qualitative data differ in nature, which leads to different ways of analysing them. They further differentiated data collected using either approach. The following Table 5 presents their differentiation:

Table 5: Distinction between Quantitative and Qualitative Data

Quantitative Data	Qualitative data
-Based upon meanings derived from numbers	-Based upon meanings which are expressed by words
-Data collection results in standardized and numerical data	-Data collection results in non-standardized data which required classification into categories
-Data analysis is conducted by the use of statistics and diagrams	-Data analysis is conducted by the use of conceptualization

Source: Saunders et al. (2012)

The above tables show that quantitative data mostly rely upon numbers. Such data is hard and structured which further requires different statistical and mathematical tools and very often software to analyse it. In contrast, qualitative data is mostly in the form of words and regarded as soft and non-standardised. It is analysed by classification, categorisation and by the use of conceptualisations.

The supply chain management discipline is dominated by quantitative studies based upon the positivistic paradigm and deductive approach; however, there is an increasing trend towards qualitative approaches. The dominance of quantitative approaches can be attributed to the nature of the discipline, especially as logistics is an applied science with a strong engineering background. For example, Sachan and Datta (2005) reviewed 442 papers published from 1999 to 2003 in three leading academic journals and found the dominance of quantitative approaches with 57% of the papers using quantitative research methods, as compared to 22% using qualitative research methods such as case studies and interviews. Similar findings were reported by Mentzer and Kahn (1995) and Näslund (2002) who attributed the dominance of quantitative approaches, to the US research, which prefers quantitative approaches as compared to qualitative. Näslund (2002) further criticised overemphasis on quantitative approaches and argued that these approaches limit the development of the discipline and maintained that

qualitative approaches such as case studies and action research can provide valuable insights and enrich logistics and supply chain research. Research also demonstrated the use of qualitative approaches in European supply chain management research and an increased acceptance of such approaches. As noted by Sachan and Datta (2005), this might be due to the maturity of the discipline, leading to the posing of how and why questions and leading supply chain researchers to explore them through qualitative approaches. Thus, the discipline is shifting towards more holistic supply chain thinking rather than focusing on functional areas.

However, Näslund (2002) acknowledged that qualitative research is less structured and subject to criticisms from its quality and rigour perspective. Therefore, there is a strong need to develop quality measures for qualitative research, with awareness that quantitative measures might not suit the discipline. Consequently, Mangan et al. (2004) called for triangulation and provided an example of a project which used inductive and deductive approaches at the same time in support of their argument. However, this approach further raises the concern whether it is possible to stay within a single paradigm while using different methods or whether the researcher really shifts between paradigms by using both inductive and deductive methods.

Summarising the above discussion, this research used an inductive qualitative approach, in the belief that it would be the best way to enable the researcher to explore the phenomenon of sustainability risk in the contemporary context of the UK fashion industry. Further, qualitative research best suited addressing research question by collecting qualitative data and interpreting it by means of social constructionism. Furthermore, this research is exploratory in nature due to lack of existing knowledge, given the complex, complicated and uncertain boundaries of the phenomenon of sustainability risk. Therefore, it was not possible to design a testable hypothesis. This led this research to follow a qualitative inductive approach because the main purpose of this research is to build a theory or propositions rather than testing one. Further, this research is inductive due to the collection of qualitative data and the researcher being part of the research process in order to understand and observe the contemporary context of the UK fashion industry, to make subjective inferences. Most importantly, qualitative research provides an opportunity to deeply investigate a phenomenon and

hence was suited to the topic under investigation. Similarly, this approach allowed a more flexible structure and made it easy to make changes and adjust as the research progressed. As Creswell (2007) rightly suggested, the inductive approach is more appropriate to generalise from the data, analyse it and further reflect on what theoretical themes are being suggested by the data. Particularly, in the SCM discipline such an approach will further increase the opportunities to add value by exploring new insights in the real context of the organisations (Mentzer and Kahn, 1995; Näslund, 2002).

However, in view of the criticisms, limitations and disadvantages of this approach, particularly from the research quality perspective, it is essential to be clear about how these issues were managed to make this inquiry robust and valid. This is the topic of discussion in the following section.

3.4 RESEARCH QUALITY ISSUES

The research philosophy and paradigms shape the research process and the way the research will be conducted. Therefore, they result in different quality measures and ways to ensure the validity and credibility of the research process and findings. However, the use in qualitative research of quality measures designed for quantitative research methods is subject to a number of criticisms (Bryman and Bell, 2015). Critics argued that when considering applying quantitative research quality measures in qualitative research, the meanings of the terms need to be altered. According to Bryman and Bell (2007: 410), "*The issue of measurement validity almost by definition seems to carry connotations of measurement. Since measurement is not a major preoccupation among qualitative researchers, the issue of validity would seem to have little bearing on such studies*". The traditional quality criteria borrowed from quantitative research are reliability, validity and generalisability.

Generalisability is concerned with whether the findings of the research can be generalised beyond the immediate context of the research, also referred to as a quantitative research quality measurement tool, but discussed as external validity in qualitative research. The following section first sheds light on reliability and validity and then alternative measures for qualitative research will be discussed.

3.4.1 Reliability

Reliability is concerned with whether the research, if conducted by another researcher in the same context, would yield the same results, and whether, under repeated trials, the results generated would be same (Healy and Perry, 2000; Golafshani, 2003; Riege, 2003; Bryman and Bell, 2015). Therefore, it questions the consistency of the research process. Easterby-Smith et al. (2012) argued that a researcher can check reliability by asking three questions: do the measures provide the same results in other instances? Can similar observations be made/attained by other researchers? In addition, is there clarity in how sense was made or reached from the raw data? They further argued that if the answer to these questions is yes, it means the data collected is highly reliable, due to the fact that when the data is collected, analysed and described, it will always show consistency and provide the same results.

Observer and participant biases and errors can reduce the reliability of the research. To reduce participant error, the researcher has to ask the same questions but also ensure that respondents use the same response categories and definitions (Healy and Perry, 2000; Riege, 2003). In the context of this research, respondents might define sustainability and/or risk in different ways and similarly manage it in different ways, but the researcher has to ensure that responses are comparable for reliability (Saunders et al. 2012). This was done in two ways: first, making sure respondents understood what was being asked and second, by asking the same questions in the same language from all the respondents.

Regarding participants' bias, the participant managers might reply to comply with supply chain policies, national and international regulations, and to give a positive message to NGOs and government, to safeguard their position. However, in reality they might not care about any of the above. These issues are also captured in the notion of social desirability bias described by Brace (2008). To manage this aspect, the researcher ensured confidentiality and anonymity and made sure that findings cannot reflect individual answers. These measures gave confidence to the participants and encouraged them to speak openly, ultimately limiting bias.

Finally, observer bias was reduced by selecting various but appropriate methods of data collection and triangulation. For example, data collected by interviews were triangulated by documents and observations. Furthermore, the discussion of research method, data collection and seeking respondents' feedback on interview transcripts also helped in preventing observer bias (Saunders et al. 2012).

3.4.2 Validity

Validity is concerned with whether the research findings accurately represent what is actually happening in the actual situation (Collis and Hussey, 2009; Healy and Perry, 2000; Riege, 2003; Golafshani, 2003). Saunders et al. (2012) maintained that the concern of validity is whether the findings are actually about what they seem to be about and variables really measure and reflect what they are supposed to be measuring. Researchers have described different types of validity. Following are the most widely discussed types of validity in literature:

Table 6: Types of Validity

Types of validity	Description
Internal Validity	Concerned with whether the researcher has demonstrated a causal relationship between two factors or what is determined as a cause actually produces what is interpreted as the effect, by demonstrating that other plausible factors cannot explain the relationship.
External Validity	The extent to which the research findings can be generalised beyond the immediate context or setting in which research was conducted.
Construct Validity	Reflects the extent to which the measurements in question actually operationalise the concepts being studied or actually measures the presence of the constructs it is intended to measure.
Face Validity	The extent to which the measure apparently reflects the content of the concept in question and is valid for the participants by themselves.

Source: compiled by the researcher from Bryman and Bell (2015); Collis and Hussey (2009); Saunders et al. (2012) and Yin (2014).

Researchers (Bryman and Bell, 2015; Healy and Perry, 2000; Riege, 2003) argued that, for any research, it is not possible to satisfy all the validity quality criteria and that

research methods differ in this aspect. Some are strong in one dimension of validity and weak on the others. For example, quantitative studies such as surveys are stronger in external validity and weaker in internal validity. In contrast, qualitative studies such as case studies are stronger in internal validity and weaker in external validity. Therefore, researchers (Bryman and Bell, 2015; Saunders et al. 2012; Collis and Hussey, 2009) recommend the use of several methods and perspectives in a single investigation, to reduce validity limitations. A similar recommendation is made by Mentzer and Flint (1997) and Grant et al. (2010) to investigate a topic in the SCM discipline.

In the context of this research, it was necessary to ensure internal validity and relevance to the involved participants. For this reason and particularly for face validity, this study involved managers from the areas of supply chain, design, purchasing/sourcing, sustainability and risk management functions as potential respondents for this research. Further, all the questions in the interview guide are relevant to the research subject; fashion supply chains and the UK fashion industry, sustainability and risk management. Due to the qualitative nature of the investigation, full external validity and generalisability is not possible. Therefore, the findings should be only valid for the selected case companies.

3.4.3 Alternative Measures for Qualitative Research

In the SCM discipline, Ellram (1996) argued that the quality measures for quantitative studies can also be applied to qualitative studies. On the other hand, Näslund (2002) argued that quantitative measures are not suitable for qualitative studies and further asserted the need for development of qualitative measures. Reinforcing his argument, Halldorsson and Aastrup (2003) suggested trustworthiness and craftsmanship as alternative quality measures, which in their view are similar to Guba and Lincoln's (1989) quality measures of trustworthiness and authenticity. The following Table 7 describes the alternative quality criteria for qualitative research and parallel quality criteria in quantitative research along with a comparison between conventional and alternative criteria and the measures that can be taken to ensure the alternative criteria:

Table 7: Alternative Quality Measures for Qualitative Research

Alternative quality measures and equivalent criteria in quantitative research (Guba and Lincoln, 1985)	Comparison of Trustworthiness measures to conventional measures (Halldorsson and Aastrup, 2003; Guba and Lincoln, 1985)		Techniques to enhance alternative quality criteria (Halldorsson and Aastrup, 2003; Guba and Lincoln, 1985)
	Conventional	Alternative	
Credibility: Parallel to Internal Validity	The degree of correspondence between study findings and the reality investigated.	Matching constructed realities of respondents to those represented by the evaluator.	-Respondent Validation -Triangulation
Transferability: Parallel to External Validity	Sending and receiving contexts, both, must be random examples from the same population. Burden of proof rests with the inquirer	True generalization is not possible. Transferability depends on similarities between sending and receiving contexts. Emphasis is on empirical process for checking the degree of similarity between sending and receiving contexts. Burden of proof rests with receiver.	-Thick Description

Dependability: Parallel to Reliability	The quest is for invariance. Alterations in methodology or constructs are threats to reliability	The quest is for trackable variance. Observed instability is not only related to error but also to reality shifts and better insights. Changes in methodology and construction are expected products.	Auditing- ensuring that complete records are kept of all phases of the research process in an accessible manner.
Confirmability: Parallel to Objectivity	Assurance of objectivity based on method. Objectivity is a quest for neutrality, an inquiry free of bias, values, and/or prejudice.	Assurance of the integrity of the findings is based on the data (interpretations, constructions, assertions, facts, etc.). Data must be trackable to the sources. Objectivity is an misconception because methodology cannot be separated completely from the researcher, who selected and used the method	-Acting in good faith -Making sure that the researcher has not allowed personal values or theoretical inclinations manifestly sway.

Guba and Lincoln's (1989:414) second alternative quality criterion for qualitative research is authenticity, which poses the question, "*Does the research fairly represent different viewpoints among members of the social setting?"* They further argued that the criterion of authenticity raises a broader set of issues concerning the wider political impact of the research. Alternatively, Halldorsson and Aastrup (2003) suggested the craftsmanship criterion, which requires the researcher to check, question and theorise to attain validity. Further, craftsmanship also requires the researcher to check the research results from different perspectives in order to avoid bias and one-sided interpretation of the findings, which is similar to the authenticity criterion suggested by Guba and Lincoln (1989).

For credibility, the researcher ensured common understanding of construct between him and the participants. Further, interview transcripts and a summary of findings were provided to the participants. Triangulation was also used for credibility, which is the topic of discussion in the next section.

To achieve transferability, a thick description is provided regarding the research context and background information, to enable future researcher or any other interested reader to see the similarity to other contexts or judge the applicability of the research to another environment.

For dependability and confirmability, the trackability of the research process and findings is central. Therefore, complete records have been described and kept of all phases of the research process in an accessible manner. Further, a thick description of the data analysis process is provided in subsequent sections to make results trackable.

In terms of quality criteria in case study research, Yin (2014) argued that the criteria of trustworthiness, credibility, confirmability and dependability can be applied and are equally useful. However, the well-established four tests (construct validity, internal validity, external validity and reliability) have been more commonly applied to establish the quality of any empirical social research. Therefore, Yin (2014) proposed the following (Table 8) case study tactics for four design tests which do not include face validity and generalisability; however, they are discussed in the above sections with reference to other researchers:

Table 8: Case Study Tactics for Four Design Tests

Test	Case Study tactic	Phase of research in which tactic occurs
Construct validity	– Use multiple sources of evidence – Establish chain of evidence – Have key informants review draft case study report	– Data collection – Data collection – composition
Internal validity	– Do pattern matching – Do explanation building – Address rival explanations – Use logic models	– Data analysis – Data analysis – Data analysis – Data analysis
External validity	– Use theory in single-case studies – Use replication in multiple-case studies	– Research design – Research design
Reliability	– Use case study protocol – Develop case study database	– Data collection – Data collection

Source: Yin (2014:45)

Although most of the traditional and alternative measures taken to ensure the quality of this research have already been discussed above, in subsequent sections of research methodology, data collection and analysis, this research will highlight quality measures in accordance with Yin's above proposed tactics.

3.4.4 Triangulation

Triangulation is strongly recommended by researchers to increase the validity, reliability and overall quality of the research (Bryman and Bell, 2015; Ma and Norwich, 2007). Triangulation also helps in reducing bias in data sources, methods and the investigator (Collis and Hussey, 2009). Easterby-Smith et al. (2012) described the following four forms of triangulation:

- ❖ *Triangulation of theories*: The use of theories from one discipline to explain a phenomenon in another discipline.
- ❖ *Data Triangulation*: The collection of data from different sources or at different times in the study of a phenomenon.
- ❖ *Investigator Triangulation*: The use of different researchers to collect data and compare the results.
- ❖ *Methodological Triangulation*: The use of mixed (quantitative and qualitative) methods to collect and/or analyse the data.

Initially used in quantitative research, triangulation is now increasingly applied in qualitative research to compare observations with interview questions to find out if the researcher has misunderstood anything (Bryman and Bell, 2015; Ma and Norwich, 2007). Many researchers (Mangan et al. 2004; Ellram, 1996; Grant et al. 2010) highly recommend the use of more than one method for deeper insights and to investigate one phenomenon from many perspectives. Näslund (2002) maintained that the use of more than one approach is imperative, especially in a discipline which is under progress, such as the SCM.

Most researchers (Voss et al. 2002; Eisenhardt, 1989; Yin, 2014) believed that the central theme in triangulation is data collection by more than one method, such as interviews, observation and analysis of documents, which in turn leads to greater validity and reliability, and avoids potential biases. Yin (2014) and Ma and Norwich (2007) preferred the use of multiple sources of data to explore a wider range of issues, for deep information and to reveal discrepancies in the phenomenon under investigation, rather than the use of single source of data and therefore preferred the use of the case-study research method, which integrates multiple data collection methods. Therefore, the researcher has selected multi-methods for triangulation such as data collection by interviews and supported by observations and documents. This will increase the quality of the research (reliability and validity) and it will reduce the bias of the researcher and the participants.

By now, the researcher has established the research paradigm and philosophical stance of this research and further highlighted quality issues and requirements for this research. The next sections are devoted to the selection and application of the research methods.

3.5 RESEARCH METHOD

Researchers have proposed various research methods within the business management discipline and social sciences. Literature also describes different criteria regarding the suitability and preference of one method over the other. The following tables (Table 9 and Table 10) present research method selection criteria which could be helpful in making informed choices:

Table 9: Relevant Situations for Different Research Methods

Method	Form of Research Question	Requires control of behavioural events?	Focuses on contemporary events?
Experiment	How, Why?	Yes	Yes
Survey	Who, What, Where, How, Many, How Much?	No	Yes
Archival Analysis	Who, What, Where, How, Many, How Much?	No	Yes/No
History	How, Why?	No	No
Case Study	How, Why?	No	Yes

Source: Yin (2014: 9)

Table 10: Classification of Research Methods According to key Research Objectives and Questions

Objective	Question	Examples of appropriate methodology
Exploration	How, why How often, how much, how many, who, what, where	Qualitative — Experiment — Case study — Participant observation Quantitative — Survey — Secondary data analysis
Explanation	How, why	Qualitative — Experiment — Case study — Grounded theory — Participant observation — Ethnography — Case survey
Description	Who, what, where how much, how many	Qualitative — Experiment — Case study — Grounded theory — Participant observation — Ethnography — Case survey Quantitative — Survey — Longitudinal — Secondary data analysis
Prediction	Who, what, where Who, what, where, how much, how many	Qualitative — Experiment — Case study — Grounded theory — Participant observation — Ethnography — Case survey Quantitative — Survey — Longitudinal — Secondary data analysis

Source: Ellram (1996:98)

The above tables guide researchers about research method selection based upon a number of factors, for example, the form of research questions, level of control on behaviour of the participants and focus on contemporary events. Table 10 further highlights the appropriateness of methodologies based upon research objectives and questions. According to Yin (2014), case study is a preferred way of doing social science research when *how or why* questions are posed and when the investigator has little or no control over events and the focus is on a contemporary phenomenon within a real-life context. Yin (2014:16) defined case study as "*an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident*". Yin (2014) further differentiated case study from other research methods. For example, history deals with a phenomenon and context but usually with non-contemporary events. Survey deals with phenomenon and context but its ability to deal with context is extremely limited. Interviews and direct observations distinguish case studies from history research technique. In case study, multiple sources of evidence are used, like documents, interviews and observations, beyond what might be available in a conventional history research.

Based upon the above two tables and discussion, the researcher concludes that the nature of this investigation is exploratory, as it aims to answer how and why questions, which is consistent with the criteria of qualitative research (Yin, 2014; Collis and Hussey, 2009; Bryman and Bell, 2015). It is imperative to highlight three basic reasons for selecting a case study research strategy. First, the researcher did not have and did not want to have any control over the working environment at any stage of the research. Second, most of the research questions concerned *how and why* issues and could not be investigated in an artificial environment, such as experiment. Third, the researcher's focus was on the contemporary context of the UK fashion industry to explore the phenomenon of sustainability risk. Furthermore, the context and phenomenon could not be separated because the participant managers manage sustainability risk in their supply chains on a daily basis in their working environment. These three reasons justify

the selection of case study as a research method for this research project (Yin, 2014; Ellram, 1996).

The above discussion reflects that case study was an appropriate research strategy for this research. In the next section, the researcher will highlight case study in more detail.

3.5.1 Case Study Strategy

Voss et al. (2002) maintained that case study is a vital means of studying emergent practices and an accepted means of theory development in operations management. Case studies provide meaningful and rich data and details on social processes in their context, enabling researchers to explore in depth the events, relationships, experiences and processes occurring in a particular context (Piekkari et al. 2010; Vissak, 2010; Woodside and Wilson, 2003). Although case study is known for theory building, however it can also be used for descriptive studies and to test a theory (Yin, 2014). Therefore, some researchers (Yin, 2014; Eisenhardt, 1989; Glaser and Strauss, 1967) referred to case study as a research methodology rather than merely a data collection technique. Furthermore, a variety of data collection techniques such as interviews, documents and observations can be applied in the case study methodology; therefore, it is highly flexible. Researchers (Saunders et al. 2012; Piekkari et al. 2010) preferred case study due to its flexible and adaptable nature, where the researcher can change the direction of the research due to the presence and occurrence of new data and insights. This flexibility and the adaptable nature of case studies helps researchers to investigate a phenomenon in depth when new insights emerge and data highlights new areas of interest. Different researchers have described different forms of case study research along with exploratory case studies. For example, the following Table 11 describes the types of case studies most cited in research methods:

Table 11: Types of Case Study

Types of Case Study	Description
Explanatory case studies	In this research, existing theory is used to explain and understand a phenomenon.
Descriptive case studies	This form is intends to describe a phenomenon, practice or process.
Experimental case	This form intends to examine the difficulties in implementing new strategies, practices or techniques in a firm and further evaluating the resulting benefits.
Illustrative case studies	This form of research intends to illustrate new or possibly innovative practices or processes adopted by a particular company or organisation.
Intrinsic case study	Undertaken to better understand one particular case in depth. Here the case does not demonstrate a particular trait or represent other cases, but is undertaken due to an intrinsic interest.
Instrumental case studies	Here a particular case is examined mainly to provide insights into another issue or to redraw generalisation.
Collective case study	Here the researcher jointly studies a number of cases in order to investigate a phenomenon, a population or a general condition. This is also a type of instrumental study but is extended to several cases and cases may or may not be similar.

Source: Compiled be the researcher from Scapens (1990) and Stake (1995).

Stake (1995) argued that collective cases are chosen in the belief that understanding them will lead to better understanding of a phenomenon or perhaps a better theorising about a large number of cases. Further, it may or may not be known in advance that the individual cases will present common characteristics. Therefore, the results from collective case studies will be more generalisable as compared to other types in the table. The collective case study calls into question the fundamental aspect of case studies,

which is deep investigation, as it involves a trade-off between the limited time period and availability of resources to the researcher. Overall, collective case study is regarded as a good balance between the uniqueness of cases in the collection and the purpose of the study to reach a more generalisable proposition, theory and knowledge (Stake, 1995).

Case study as a research method could involve a single or multiple cases. It is imperative for a researcher to understand the characteristics of both before proceeding to data collection. The next section will shed light on these issues.

3.5.2 Single versus Multiple Case Study

Perhaps one of the most critical topics of discussion in case study research is whether the design should be a single case study or multiple. However, researchers (Yin, 2014; Ellram, 1996; Benbasat et al. 1987) agreed that either of them is acceptable and valid; the choice is largely determined by the nature and aim of the research. Yin (2014) described the following three rationales for a single case study:

- ❖ When a case represents a critical case where the researcher is testing a well-formulated theory or propositions with controlled parameters.
- ❖ When a case represent a unique or extreme case of significant theory.
- ❖ When the researcher is able to observe and analyse a phenomenon which was not accessible to investigation in the past and further the case study presents a revelatory case.

Voss et al. (2002) favoured single case study for in depth information, while Yin (2014) maintained that single case studies are more suitable for longitudinal investigation for in-depth information on operations in a single plant or firm, but can also be used for exploratory purposes for a multiple case study. Benbasat et al. (1987) suggested multiple case studies for the purpose of description, building or testing theory. Ellram (1996) holds that single case study is critical to explain or test a theory, whereas multiple case studies are more suitable for replication and to generalise the results in order to develop a rich theoretical framework. Accordingly, Voss et al. (2002) mentioned that several cases can be involved in a single firm case study and that the number of cases can be different from the number of firms. They further argued that single cases enable a

researcher to study several contexts within a single firm case, for example, within a single firm, different functions, departments or operations. However, single case study is subject to a large number of criticisms, for example, less potential for generalisation and replication and the risk of misjudging events, exaggeration and drawing conclusions too early based upon available data (Yin, 2014). In contrast, multiple case study allows the opportunity to identify and study common patterns among cases and compare and contrast. Further, the evidences from a multiple case study are considered as more compelling and the overall study is regarded as more robust. Yin (2014) and Eisenhardt (1989) favoured the choice of multiple cases due to its strength of replication of a single type of incident in different settings or the opportunity to compare and contrast different cases and provide analytical generalisability, which also enhances the external validity of the research. However, resource requirements such as time and access, particularly for a PhD student as sole researcher, are some of the constraints for multiple case study (Yin 2014; Voss et al. 2002; Piekkari et al. 2010; Woodside and Wilson, 2003).

Another important debate in case study research is the appropriate number of cases. In this regard, Eisenhardt (1989) maintained that there is no ideal number; however, she recommended four to ten. Ellram (1996) maintained that six to ten cases should be enough to provide sound evidence. Another more comprehensive note on the number of case study is provided by Perry (1998), who argued that the widest acceptable range falls between two to four as the minimum and ten, twelve or fifteen as the maximum. Further, Yin (2014) reported that when researchers have resources and choice, they should select multiple case studies or at least two cases, because with two cases there is a possibility of direct replication and analytic conclusions will independently arise from two cases, unlike a single case.

The above discussion reflects that multiple case study is far more advantageous than single case study due to its ability to compare, contrast, replication and better opportunity to build a theory or proposition. In the context of this research, five UK fashion companies from the UK fashion industry were theoretically selected for multiple case study. This research aims not only at the exploration of the phenomenon of sustainability risk but also to understand how different companies in the UK fashion

industry are managing and why might not be managing their supply chain sustainability risk and ultimately to design a framework or a typology to manage supply chain sustainability risk. Therefore, multiple case study was helpful to gain insights from different companies, to explore current practices for supply chain sustainability risk management and constraints on doing so.

3.6 CASE SELECTION: UNIT OF ANALYSIS

In case study research, case selection is regarded as an important aspect of theory building from case studies (Eisenhardt, 1989; Woodside and Wilson, 2003). Many choices are made at this stage, which have huge impact on how well the research is designed and conducted; e.g. who to look at, where, when, about what and why. Answers to these questions can have significant impact on findings. Further, Yin (2014) highlighted the need to delimit the scope of a case study by identifying and specifying the unit of analysis. The key consideration in unit of analysis is to decide what it is that the researcher intends to say something about at the end of the investigation (Miles et al. 2014). Collis and Hussey (2009) highlighted the importance of unit of analysis and mentioned that the unit of analysis defines the boundaries of the phenomenon under investigation and the research problem reflects and defines which data to collect and analyse. Yin (2014) maintained that the unit of analysis within a case study could be anything; for example it could be a firm, department, a person or a country or policy. Whatever it is, it will pose a requirement for different research design and data collection strategy.

For the purpose of this research, a case is defined as one UK fashion company in the UK fashion industry. The researcher has selected five UK fashion companies as units of analysis. It was further decided that selected fashion companies must meet the following three criteria for the deep exploration of the phenomenon of sustainability risk:

❖ The case company must have its manufacturing or sourcing base in the UK.
❖ The case company must have retail or wholesale presence and some major operations such as customer service, distribution and warehousing in the UK.
❖ The case company must deal in fashion garments.

The following sections shed light on the UK fashion industry, its current profile and structure and challenges which the industry is experiencing at the moment in time. The researcher will shed a detailed light on the UK fashion industry which will demonstrate why the researcher is interested in the UK fashion industry. Further, the discussion in the following sections will also highlight how conducting this research will add value, by exploring the phenomenon of supply chain sustainability risk and proposing a supply chain sustainability risk management typology to the case companies which can help them to managing their SCSR proactively, effectively and efficiently.

3.6.1 The UK Textile and Fashion Industry

The UK textile and apparel sector currently employs 100,000 people, less than half what it was employing about three decades ago (Flanagan, 2012). The UK fashion industry has experienced considerable competitive pressure in the last four decades from emerging markets in Far East Asia (Taplin, 2006). Further, due to globalisation and trade liberalisation, imports from emerging markets penetrated Western markets and it became difficult for the British manufacturers to compete on cost. Therefore, to remain competitive and to minimise production costs, British manufacturers and retailers pursued industrial relocation and gradually increased outsourcing (Dicken, 2003). The remaining UK manufacturers started focusing on niche markets, innovation and high quality garments (Jones and Hayes, 2004). There are many reasons for the steady decline in the industry, but most commentators believe that outsourcing, globalisation of the industry, trade liberalisation, emergence of cheaper labour markets and the development of suppliers played a major role in it (Palpacuer et al. 2005; Tokatli, 2008).

Globalisation and outsourcing further extended supply chains, increased complexity, reduced the visibility of supply chain operations and increased overall supply chain risks (Christopher et al. 2004). This shift not only impacted the lives of British people by increasing unemployment but also caused many social and environmental problems in the developing countries (Allwood et al. 2006). In clothing, labour cost for the operations of sewing, cutting, finishing, stitching and packaging is still the main element of cost (Taplin, 2006). Therefore, at a time when availability, agility, responsiveness and

constant introduction of minimum fashion items in large varieties are pre-requisite for fashion supply chains, at the same time highly fragmented, globalised and disintegrated supply chains became barriers to obtaining competitive advantage (Bruce et al. 2004; Jones and Hayes, 2002).

3.6.2 UK Fashion Industry Profile

The UK fashion industry is characterised by a high level of retail concentration and dominated by large retailers, resulting in a highly competitive fashion market. The fashion market is dominated by four chain stores: the Arcadia group, New Look, Marks and Spencer and Next Retail, which accounted for 29.1% of clothing retailers' sales in 2007 (Mintel, 2007) whereas the top seven clothing retailers accounted for 33.8% of the market sale.

Fastest growing are the middle market retailers such as Topshop, Warehouse, River Island, Oasis and New Look (Birtwistle et al. 2003). The clothing and fashion market also comprises variety retailers such as BHS, department stores like House of Fraser and John Lewis Partnership, supermarkets such as George at Asda, Tesco and Sainsbury's and discounters such as Primark, Matalan and factory outlet centres. Furthermore, international brands such as Zara, Mango, Benetton, Gap and H&M further increased competition in the UK fashion market.

The UK fashion industry is the most competitive in Europe (Mintel, 2007). Abernathy et al. (1999) highlighted UK fashion industry characteristics such as the high level of retail concentration, overcapacity and fierce competition. They further argued that retailers have to be market sensitive, as inefficient and undifferentiated retailers will not be able to survive due to the risks of product proliferation and increasing pressures for low prices. In order to ensure responsiveness and to be market sensitive, the most important strategies used by the UK fashion industry are continuous monitoring of fashion trends to identify new designs through fashion images, fashion makers and daily proximity to fashion markets, frequent introduction of new styles and many stock keeping units but in smaller quantities in one particular season, reducing pre-season buying and taking consumer based measure (Birtwistle et al. 2004; Christopher et al. 2004; Barnes and Lea-Greenwood 2006).

3.6.3 Current Structure of UK Fashion Industry

The UK fashion industry is dominated by small and medium firms scattered all over the UK. According to the Office for National Statistics (UKFT, 2013), in 2011 the UK textile industry made £8.1 billion in sales with the main share of high value items for exports, while imports were valued at £17 billion, mainly from Asia. The estimated overall export value of the UK clothing and textiles was £1.3 billion, while an estimated £43.9 billion was spent on clothing in the UK in 2011. The British government aims to increase employment in the industry to 200,000 in five years, mainly by reviving British textile manufacturing (fibre2fashion, 2013). However, in textile manufacturing alone, 50,000 jobs were lost from 2000 to 2009 (Gray, 2012).

A positive indicator is that consumer spending on clothing increased by 12.5% from 2006 to 2010. Supermarkets have also increased their share of clothing recently and in 2010, their share accounted for 25%. A long persistent recession also impacted the British fashion industry and according to national statistics, in 2010 there was a 7.1% decrease in clothing shops, from 12700 in 2009 to 11800 in 2010 (Walker, 2011). Further, rising cost of cotton, weak pound and high transportation costs added to retailers' costs, which were ultimately reflected in product prices and made British garments expensive for the consumer. These factors weakened consumer confidence and ultimately forced them to choose cheap alternatives with an overall attitude towards savings (Walker, 2011).

In terms of value, the clothing retailing market increased by 12.5% from 2006 to 2010 whereas the market value of the garment sector and its subsectors increased by an overall 11.4% from 2006 to 2010, with the highest increase in children's garments by 13.2% (Walker, 2011). The UK clothing trade is in a £10.9 million deficit due to imports from cheap manufacturers in Far East Asia (ONS, 2010, 2012). While the UK clothing industry has been in continuous decline since 1990s, the UK garment market has grown continuously since the mid-1950s. This growth can be attributed to the low prices and continuous import penetration from emerging markets in much higher quantities (Jones, 2006). Taplin (2006) mentioned that between 1993 and 2001, UK textile manufacturing fell by 36.6% and in the same period of time imports rose by 104.5 per

cent. Thus, the main reason for decline of the UK textile industry is import penetration. However, Taplin's (2006) analysis of the UK market suggests that the sectors that primarily focused on mechanisation, such as technical textiles and the sectors that used high quality resources such as wool, were subject to import penetration below 60%, suggesting that UK manufacturing of these products is more viable than other types of products (Taplin, 2006 and Jones and Hayes, 2004).

Constant decline of the UK fashion industry, on the one hand increased industrial uncertainty in the UK and on the other increased supply chain complexity by increasing length and operation to the Far East (Jones and Hayes, 2004; Taplin, 2006). Retail concentration and influx of new players caused more pressures for efficiency enhancement and prices decreases from the retailers (Abernathy et al. 1999). Over the years increase in National Minimum Wage and pressure for living wages further increased labour costs. Declined manufacturing also caused capacity problems and availability of technically skilled workforce coupling with problems of raising finance, training workers and retaining them on the job (Flanagan, 2012). Worldwide worse weather conditions such as floods and heavy rains destroyed cotton fields and caused shortages in cotton supply and spikes in prices. Further, the world economic situation and persistent recession also weakened consumer confidence and investors interest in the UK fashion industry (Abdullah, 2010; M&S, 2010). The weakening pound and currency fluctuations also made UK exports cheaper and caused losses to the UK fashion industry (Walker, 2011). Decline of the industry heavily impacted textile and garment manufacturing clusters and caused the remaining manufacturers to source even the smallest things to import into UK, causing sustainability, transportation and logistical issues (Flanagan, 2012).

The remaining industry, shrunken in size, failed to provide better packages and career opportunities and to attract trained professional and therefore become dependent upon the existing workforce, which is aging and reluctant to change (Walker, 2011; Jones and Hayes, 2004; Taplin, 2006). At the same time, the young generation perceived factory work as boring and non-progressive. Emerging markets also played their role in attracting UK retailers by providing better service and restricting retailers to looking after their home-based manufacturers and suppliers, who were expensive, costly and

slow (Tokatli, 2008). Changing legislation, especially on chemicals, working practices and waste, further created problems (Walker, 2011). The phenomenon of fast fashion also heavily impacted the remaining UK premium garment manufacturers, which are expensive, while retailers are more interested in price cuts and margins (Tokatli, 2008 and Walker, 2011). Globalisation and outsourcing also added transportation, environmental, complexity and increased risks for the UK fashion industry (Walker, 2011; Jones and Hayes, 2004; Taplin, 2006).

Based upon the foregoing discussion, the following challenges to the UK fashion industry have been identified:

- ❖ Globalisation, outsourcing of products and offshore manufacturing.
- ❖ Cheap imports and trade agreements such as MFA (multi-fibre-agreements)
- ❖ Extended supply chains with increased complexity, decreased visibility and control.
- ❖ Price and efficiency pressures from retailers.
- ❖ Severe weather conditions and their impact on raw materials and supply chain disruptions.
- ❖ Disappearance of textile and garment clusters and service providers.
- ❖ Shortage of technically skilled workforce.
- ❖ Aging existing workforce, huge dependency and a stagnant culture.
- ❖ Lack of interest from young generation to work in manufacturing and perception about garment manufacturing business.
- ❖ Lack of government support.
- ❖ Environmental and logistical issues.
- ❖ The phenomenon of fast fashion and UK fashion suppliers and manufacturer inability to meet those requirements.
- ❖ Raw material and supply issues and capacity constraints.
- ❖ Weak pound and currency fluctuations.
- ❖ Legislation.
- ❖ The global recession.
- ❖ Operating costs in the UK.

Although the literature highlighted the above set of challenges, little extant literature has provided solutions to them. Thus, this research will explore which of these key challenges are prevalent in the UK fashion industry and how the industry is managing them.

In summary, the fashion industry has gone through continuous contraction in the last four decades and currently experiencing large number of challenges. Further, the issues of risk and sustainability are important areas of interest for supply chain researchers. However, understanding and unified discussion of the phenomenon of sustainability risk is still lacking in the UK fashion industry. Therefore, this research could be useful and valuable to explore and understand the phenomenon of sustainability risk and to get insights on how the UK fashion industry is managing it, if at all or why the industry might not be. Consequently, this research involves fashion companies from the UK fashion industry. Therefore, the unit of analysis for this research is the fashion companies operating in the UK fashion industry.

One might argue that fashion supply chains are global and therefore this research should integrate supply chain partners from different parts of the world. However, the selection criteria based upon carrying out major operations in the UK overcame this limitation and allowed the researcher to explore the phenomenon of sustainability risk deeply. Further, the researcher was partially funded by the university and funds were for a specific period of time. Given this constraint, attempting to obtain access to supply chain partners in Asia and then managing resources to travel and conduct interviews seamed unrealistic. However, the qualitative approach of this research further enabled the researcher to conduct an in-depth investigation of each case. Selecting too large a number of cases might pose the challenges of being superficial and not deeply exploring the phenomenon under study, producing large amounts of data and ultimately opting for reduction or simplification of that for better management. This could have undermined the in-depth aspect of the case study approach, while making trackability harder for the reader, which would have an adverse impact on the overall quality of the research.

The unit of analysis for this research was fashion companies in UK fashion industry. Five case companies were selected based upon their carrying out major operations in the UK. In order to get access in the case companies, the researcher first used traditional methods, for example, calling head offices, faxing, emailing, using LinkedIn, Facebook and Twitter but all these efforts did not pay off. Consequently, the researcher decided to contact the managing directors and the owners of the companies in person using industrial conferences as a platform (mainly, Association of Suppliers to the British Clothing Industry, ASBCI). This strategy paid off and the researcher got access into five case companies. The participant case companies are SMEs, qualifying the unit of analysis criteria. However, the researcher also tried to get access to large fashion retailers such as Marks and Spencer, the Next, H&M, House of Fraser and Zara but could not do so, despite using industrial conference platforms.

The aim of qualitative inquiry is not to generalise or transfer the findings (Voss et al. 2008). However, selecting or getting access to large fashion retailers such as M&S, Zara and H&M might have enabled the researcher to provide some broader insights, useful for the global fashion industry or industries . Therefore, selecting SMEs from the UK fashion industry limited generalisability and transferability of the research findings. However, this selection criterion is in line with Voss et al. (2008), who argued that the researcher might not seek generalisability or transferability of the research findings but to explore a complex phenomenon with unclear boundaries in a contemporary context and in-depth. Therefore, the findings of this research will be applicable and only valid for the participant case companies.

Similarly, Taplin (2006) and Jones and Heyes (2004) reported that the UK garment and textile industry has declined massively in the past four decades and now there are only a few small and medium-sized businesses scattered across the UK, especially, in the English Midlands and the Scottish Borders. The selected companies support their observations. Further, the selected case companies are a good mix of SMEs carrying out their major operations in the UK. However, not including large retailers in this research, on the one hand, restricted this research to provide holistic and much broader insights on the phenomenon of supply chain sustainability risk. On the other hand, this research provided in-depth exploration and insights about SMEs in the UK fashion industry. This

view is further in line with Yin (2014) who argued that, while deciding unit of analysis, the researcher has to make a choice between a holistic and much broader exploration/investigation to an in-depth exploration. He further maintained that providing an in-depth exploration in the contemporary context is the actual motive of a case study research.

Although much has been written about the global fashion industry in the supply chain management discipline, empirical research has not yet explored the phenomenon of SCSR in the context of the UK fashion industry, which is largely comprised of small and medium companies. Therefore, exploring the phenomenon of SCSR in the context of the UK fashion industry will further add value for SMEs, which are significant in any economy in terms of providing valuable services, employment and economic growth opportunities.

A large stream of researchers in this field are (chapter two); most importantly, Wigley and Provelengiou (2011), Christopher et al. (2011), Perry et al. (2015), Fernie and Grant (2015), Khan et al. (2012), Brun and Castelli (2008), Bhardwaj and Fairhurst (2010), Sheridan et al. (2006), Lu et al. (2011), Lopez and Fan (2009); Ghemawat and Nueno (2006), Mattila, et al. (2002), Masson et al. (2007), Sen (2007), Christopher et al. (2004), Fernie and Azuma (2004), Barnes and Lea-Greenwood (2006 and 2010), Tokatli (2008) and Tokatli et al. (2008), De Brito (2008), Christopher et al. (2011), Caniato et al. (2012) etc. have focused on the global fashion industry or global fashion supply chains and explored different fashion supply chain issues. Further, none of the above mentioned researchers or the literature discussed in the literature review (Chapter Two) has explored the phenomenon of SCSR in the context of SMEs in the UK fashion industry. Therefore, exploring SCSR phenomenon in the context of the UK fashion industry can add value by enabling the UK fashion industry to manage its SCSR effective and proactively. Theoretically, this research will add value in the supply chain management literature by exploring relationship between sustainability and risk. On the other hand, this research will also explore how different companies in the UK fashion industry manage their supply chain sustainability risks and consequently how can they do this more effectively and proactively.

In the next section, the researcher will describe in detail the relevant respondents for this research and how data were collected.

3.7 DATA COLLECTION STRATEGY

To collect data, the first step was to identify potential respondents. Purposive sampling was adopted, which is a qualitative research sampling method where respondents are selected based upon their relevance to the research topic and their knowledge and ability to answer the research questions (Sekaran and Bougie, 2011). The following table 12 describes the main respondents and the reasons for selecting them.

Table 12: Respondents and Reasons for their Selection

Respondents	Rationale for selecting them (Purposive Sampling)
Risk Management Manager	Due to their role and relevance to the research topic. To find how they define sustainability and/or risk and whether perceive it a unified concept or an isolated. Further, how are they managing and why not.
Sourcing/Purchasing /Buying Manager	Due to their boundary spanning role in the company and to see how are they managing sustainability and/or risk.
Supply Chain Manager	Due to their supply chain wide role in dealing different issues and their expertise and knowledge in developing and dealing supply chain sustainability and/or risk management.
Sustainability Manager	To explore how they view and manage sustainability risk
Design Manager	To explore whether at the very basic stage of design, they are familiar with sustainability risk issues or not. Further, how they are managing sustainability and/or risk issues.

Source: Compiled by the researcher

To collect data for this research, interviews were conducted with the above-mentioned respondents. However, the researcher was open and flexible in terms of respondents in the event that, during data collection, some other managers were identified or

highlighted by the above respondents as more knowledgeable and relevant to answer the research questions.

There are many types of interviews for an empirical investigation; as Converse and Schuman (1974: 53; cited in Denzin and Lincoln, 2000: 650) rightly said, '*There is no single interview style that fits every occasion or all respondents*'. However, for the purpose of this research semi-structured interviews were preferred over various other types mentioned in the literature. For example, structured interviews are more suitable for questionnaire survey and associated with the positivistic paradigm (Collis and Hussey, 2009). In unstructured interviews, it is difficult to control the range of topics as these are informal and conversational style interviews leading to difficulty in analyses especially to compare and contrast (Collis and Hussey, 2009). On the other hand, group interviews are difficult to manage for a sole PhD researcher and further it is unrealistic to assume that the type of interviewees which this research is interested in could be available at one time at one place. Further, a large number of researchers also reported the usefulness of semi-structured interviews for qualitative research in general but for case-study research in particular (Bryman and Bell, 2015; Denzin and Lincoln, 2000; Saunders et al. 2012).

For semi-structured interview, the interviewer has a clear list of questions or themes regarding fairly specific topics to be covered in the interview (Doody and Noonan, 2013). This list of questions is also referred to as an interview guide, which is subject to change during and after the interview depending upon responses. Further, during the interview the interviewee has freedom to speak in the way he/she wants and cover the topic which he/she wants; consequently, there is no predetermined order of interview questions (Doody and Noonan, 2013; Dearnley, 2005). However, the researcher has flexibility to probe and prompt on issues which seem interesting from the research point of view or offer new insights. Therefore, the questions may not precisely follow the interview guide schedule. However, all the questions on the interview guide will be asked and similar wording is recommended for subsequent interviews (Bryman and Bell, 2015). This strategy further helps in analysis and comparison across the cases. Semi-structured interviews are preferred for their flexibility, producing rich information, facilitating pursuit of the topic of interest, in-depth exploration and enabling the researcher to

understand anticipated and unanticipated events and issues. Further, they help in understanding and exploring what the interviewee views as most important in explaining events, patterns, and some particular forms of behaviour (Bryman and Bell, 2015).

Bryman and Bell (2007:479) argued that "*if the researcher is beginning the investigation with a fairly clear focus, rather than a very general notion of wanting to do research on a topic, it is likely that the interviews will be semi-structured ones*". In their view, semi-structured interview eases and helps in qualitative data analysis. However, specifically in a methodology context, Bryman and Bell (2015) maintained that if the researcher is following a multiple case-study methodology then the researcher needs some sort of structure for the cross-case comparison and semi-structured interviews enable such comparison by providing a flexible structure. Therefore, the researcher concluded that semi-structured interviews best fulfilled all the criteria and requirements for this research and would be the most appropriate data collection strategy.

An important debate in data collection is concerned with the question when to stop data collection and the number of interviews. A general consensus in the literature is to reach saturation level, when no new theme or insight is emerging and already explored themes start repeating (Denzin and Lincoln, 2000; Bryman and Bell, 2015). In this regard, Perry (1998) proposed a rule of thumb and suggested 35-50 interviews. However, in order not to impose any limit and further to ensure complete saturation, deep exploration and insights, the researcher borrowed the idea of saturation and decided to carry on interviewing respondents until all the discrepancies in the data were resolved and no new themes were emerging. Overall, 52 interviews were conducted along with visits to head offices and factories. When data collection started, the researcher could not find any manager who was specifically dealing in risk and sustainability management. However, new types of respondents were identified and referred by the initially identified respondents, involved in the supply chain sustainability risk management process and therefore included in the research process as respondents. Within-case and cross-case analysis chapters include new respondents, their titles and responsibilities.

The semi-structured interview data were further supported by a number of means, for example, visits to the manufacturing sites, head offices and other important operational places, navigating around the working environment, specifically the factory or shop floor and distribution centres, making observations and chatting to workers in the factory cafes, car parks and surrounding areas.

Silverman (2013) maintained that the focus of observation in a research method is to observe what the respondents actually do instead of what they think they do. Therefore, observational evidence is often useful in providing additional information about a topic being studied (Yin, 2014). On the other hand, Stake (1995) referred to observations as a common feature of case-study research method. Non-participant qualitative observations further enable researchers to enrich information by making impression of human and non-human activities and context around them, which will further help in triangulation to make plausible statements. However, observations have similar criticisms and shortcomings to other qualitative research methods, for example, lack of methodological and procedural rigour, dependence upon subjective interpretations and lack of tools to confirm observations are real instead of effects of chance (Gummesson, 2007; Adler and Adler, 1994). Therefore, they suggested using observations with other methods such as interviews and maintaining an observation log in order to ensure consistency and to enhance credibility and reliability.

In the context of this research, the researcher was an overt and non-participant observer and had a focus on supply chain sustainability risk management process. Therefore, ethical and quality issues which could stem from observations were managed beforehand. The analysis chapters (chapters four and five) will further shed light on findings from interview data and how some of the findings were supported and triangulated by observations. After every single interview and visit to the head offices, factories or working premises, the researcher noted observations, informally, on a piece of paper. Finally, information on different papers was converted into an observation file which looked like an interview transcription. The observation file further enhanced opportunity to ensure consistency, credibility and reliability (Gummesson, 2007; Adler and Adler, 1994). The following Table 13 lists important areas of interest for observations and their use and place of use in the thesis:

Table 13: Use of Observations

Areas of interest for observations	Purpose of observations in those areas	Place of use of information in the thesis (within-case and cross-case analysis chapters)
Technology	How advanced technology the case companies have. New buying and up-grading existing.	In organisational resources.
Information sharing, communication and integration.	Do respondents and departments know about others in the organisation? How frequent they interact and share information. How close they are sitting, whether internal organisation facilitates integration and communication or not. How young, agile, active, open minded and passionate people are working in the companies.	Organisational culture. Management structure.
Building relationships and partnerships, Capacity development and sharing, product and process innovations.	Are there any signs or presence of partners or other fashion companies in the factory, head office or working premises? Are there any materials, trainees, and apprentices from any other organisation? Are there any innovative products or processes in the company?	Stimulator of innovation. Coopetition.
Sustainability risk management messages.	Any signs, posters or displayed information about any suitability and/or risk issue. Is there any activity carrying out to manage SCSR.	Stimulator of innovation. Organisational culture. Growth of fast fashion. Organisational resources. Management structure.

However, it is imperative to mention that none of the case companies handed the researcher any document to take away for research purposes. All the companies referred to their website and in some cases allowed the researcher to have a look during the factory visit. The researcher was not allowed to take a picture or copy of any document. Companies were concerned that documents should not reach NGOs or any other party, or simply the documents were companies' future competitive strategy. Further, some case companies were customer accredited (the third case company) or following a particular type of code of conduct (case companies two and four) which they were not allowed to open for any outsider. Therefore, the researcher also noted related information from case companies' documents when he was allowed to see documents during factory or head office visits. Document-related information was also converted into a file and used in the within-case and cross-case analysis chapters. Furthermore, to triangulate with data collected through semi-structured interviews and factory or head office visits, a significant amount of time was spent on accessing archival records and case company websites, attending industrial, private and public seminars and the use of existing data-bases from various sources such as the UK Fashion & Textile Association, Textile Centre of Excellence, Mintel reports and Westminster Media Forum. All these sources provided efficient triangulation, enabling this research to minimise researcher and participant bias and enhancing transferability, validity and reliability.

All these measures helped in generating richer data and enhance transferability of the findings (Lincoln and Guba, 1990). Further, corroborating data from various sources and perspectives enhanced the depth of understanding of findings and provided verification (Atkinson and Delamont, 2005).

3.8 RESEARCH ETHICS

Data collected by semi-structured interviews and triangulated by observations and documents through a multiple case study research method leads to another yet critical aspect of ethics in research. A large stream of research has placed special emphasis on ensuring ethics in data collection by making sure it should not be deceptive, not infringe upon the rights of the participants and ultimately not result in unforeseen consequences and harm the participants (Murphy and Dingwall, 2007; Oliver and Eales, 2008).

Therefore, the following guidelines mentioned in the literature were followed to ensure that data collection and overall research followed ethical considerations (Murphy and Dingwall, 2007; Oliver and Eales, 2008).

❖ Organisational consent was obtained from the managing directors or the owner of the companies.

❖ Respondents' consent was obtained afterwards when the owner or the managing directors have highlighted potential respondents.

❖ Respondents were given the right to withdraw consent at any time, should they perceive any doubt regarding the research process or the use of the information. For this purpose, more than one contact information of the researcher and the research supervisors' was provided to the participants and to the companies.

❖ University ethics guidelines set for the conduct of research were followed and the consent forms were submitted to the university research ethics committee.

❖ Respondents were requested to propose the interview date and time according to their convenience and availability.

❖ Respondent and organisational anonymity and confidentiality was ensured by not mentioning organisational and respondent name or information which has potential to impact their confidentiality.

❖ The interview guide was sent before the interview date and before conducting the interviews, permission for recording was requested, with respondents' right to turn it off any time.

❖ The interview transcripts were sent to the respondents for two purposes, first, to validate that the interviewer had understood correctly and second, in case they wanted to change anything from a confidentiality perspective.

❖ Data collection, analyses and interpretations were further submitted to the research supervisors to ensure that there is no invasion in privacy and deception. Based upon the research supervisors' feedback, case companies were further disguised.

3.9 INTERVIEW GUIDE DEVELOPMENT

Several researchers (Bryman and Bell, 2015; Yin, 2014; Saunders et al. 2012) recommend the development of an interview guide if data is to be collected by semi-structured interviews. For this purpose, a pilot study was conducted to test the effectiveness, usefulness and validity of the preliminary interview guide, which is discussed in the subsequent section 3.11. Findings from the pilot study were used to refine the initial guide and to develop the final guide to collect data from the actual case companies. Therefore, this section will shed light on different stages involved in interview guide development.

3.9.1 Preparing an Interview Guide

Interviewing is regarded as the most common and powerful tool in trying to understand fellow human beings (Denzin and Lincoln, 2000). However, the frequency of interview use has made it taken for granted approach and it is now regarded as part of mass culture as a mechanism to gain information about individuals, groups and organisations. Denzin and Lincoln (2000) cautioned that social scientists should be aware of such social dynamics and that interviews are interactional encounters that can shape the nature of knowledge generated.

Bryman (2012) argued that the idea of an interview guide must not be compared with structured interviews. Doody and Noonan (2013) maintained that the term can be applied to the somewhat more structured list of issues to be addressed or questions to be asked in semi-structured interviews. However, they cautioned that the formulation of interview questions should not be over specific and the use of alternative avenues of inquiry should not be closed off if such an opportunity arises. Bryman (2012:473) suggested that the interviewer should consider "*what do I need to know in order to answer each of the research questions I'm interested in?"* This also means investigating what the interviewee sees as important and significant in relation to each of the topic areas. Therefore, questions must cover areas of interest, themes or list of issues but from the perspective of the interviewee. Accordingly, the interview guide should follow a certain level of order on the topic areas but this order is subject to changes depending upon interviewee responses, the interviewer's judgment and interest in new insights

(Bryman and Bell, 2015; Leech, 2002; Turner III, 2010; Guion et al. 2011). Therefore, the initial structure and sequence of questions is subject to a number of changes. However, having such a structure is essential for deep explorations, getting rich information and for data analysis.

Different kinds of questions are asked in the qualitative interviews. Most of the researchers (Kvale and Brinkmann, 2009; Bryman and Bell, 2015; Leech, 2002; Turner III, 2010; Guion et al. 2011) suggested the following main questions in an interview guide:

❖ *Introducing question*: Introducing each other and setting the scene by relaxing the environment, stating the purpose of the interview and treatment of interview data and measure taken to ensure the confidentiality.

❖ *Follow up question and probing questions*: Asking the interviewee to elaborate the answer and following up what has been said through direct question.

❖ *Indirect questions*: Are asked to get an individual's own view.

❖ *Silence*: Instead of asking something, interviewer pauses to signal the interviewee opportunity to reflect and amplify the answer.

❖ *Initial open-ended questions*: the main purpose of these questions is to ease the environment and led the conversations start. Questions such as, what events led to……? What was your life like prior to….?

❖ *Intermediate questions*: These questions aim to explore the main topics, issues and areas of interest. Questions such as, how did you feel about…..when you first learned about it? What immediate impacts did…..have on your life?

❖ *Ending question*: these questions intend to capture last but important thoughts of the interviewee and to present an opportunity to add or modify previous statements. For example, how have your views about…changed? If you had your time again, would you choose to work for this organization? Being an ethical researcher, it is advised (Yin, 2014; Bryman and Bell, 2011) that the interviewer must thank and appreciate interviewee's time and cooperation with research.

Researchers (Bryman, 2012; Leech, 2002; Turner III, 2010) also reminded that the interviewer may ask about different things about the interviewee, groups, organisations

and others, such as: values, beliefs, behaviours, formal and informal roles, relationships, places and locations, emotions, encounters and stories. This reminder is particularly important in the context of this research, especially questions from a sustainability perspective, which tended to explore the above elements about the interviewee. Bryman (2012) recommended, under such situations, varying questions in terms of types of questions and the type of phenomenon the researcher questioning about. Bryman (2012) cautioned the interviewer to avoid asking complex, double-barrelled, or leading questions and use of jargon or complex theoretical terms.

The most vital stage in any interview is the ending part. Many important steps can be taken at this stage to enrich data and enhance interview quality (Saunders et al. 2012). They further suggested that the researcher can test his/her understanding by summarising an explanation provided by the interviewee. This will present an opportunity to the interviewee to comment if the summary is adequate or some points need to be added or simply to correct the interviewer's understanding where appropriate. This practice can also be helpful in probing and exploring the interviewee's responses further. Most importantly, this practice will help in avoiding bias and incomplete interpretations. Finally, the interviewer can also ask the interviewee if it is possible to read interview transcripts in order to test accurate understanding of the interview and add further points of relevance, missed by the interviewee during the interview.

Another important source to enrich the interview and disclose important information is when the interview is over and the interview recorder is switched off. Therefore, many researchers advised taking notes either while walking with the interviewee or immediately after leaving the interviewee (Bryman and Bell, 2007).

What this above discussion and most researchers emphasise is the role of the interviewer as an active listener during the interview. Bryman (2012) cautioned that interview recording might make the interviewer at ease and passive. However, it is imperative for an interviewer to be attuned and responsive, without being intrusive, to what the interviewee is saying or not saying and what is doing. In the next section, the researcher will discuss core questions and probes.

3.9.2 Core Questions and Probes

This research has three subject areas, fashion supply chains, risk management and sustainability management. Therefore, the research questions and probes had to include discussion around risk management, sustainability management and fashion supply chains. Consequently, this part highlights the main themes covered to answer the research questions and probes for sub-topics.

As discussed in the literature review chapter, different researchers defined risk and sustainability from different perspectives. Therefore, the interview guide asked the respondents how they define or describe risk and sustainability rather than imposing any preconception from the researcher's point of view or from the literature. Further, the responses were analysed to see similarity and differences in both definitions. This was intended to see if the respondents perceive, define and describe sustainability and risk as one phenomenon or an isolated concept.

The next question in the interview guide was intended to explore key risks and sustainability issues in the case companies. Research on risk and sustainability in fashion supply chains has highlighted some risks and sustainability issues but not particularly in the UK fashion industry. Therefore asking about key risks and sustainability issues would help in understanding the overall sustainability risk profile of these companies but also to understand the UK fashion industry.

The nature of fashion products, supply chain characteristics and success stories of fast fashion retailers (chapter 2) raised a suspicion that the sustainability and risk debate might be irrelevant for today's fashion business model. Further, it was mentioned in chapter two, that sustainability and risk management depends upon the organisational culture, structure, management, nature of product and market and the geographic area the organisation is operating in. Therefore, it was intended to investigate this argument by exploring behavioural and organisational aspects of SCSRM. This question would further help in understanding why UK fashion industry might not be managing its sustainability risk and if the industry is managing then what is progress. Probes in relation to this question would further demonstrate the UK fashion industry's supply chain sustainability risk management awareness.

The next question in the interview guide was designed to explore supply chain sustainability risk management processes. In order to be flexible, not fully follow literature and avoid preconceptions, the researcher adopted central themes in the risk management process: risk identification, prioritisation and mitigation or management strategies. These questions would help in exploration and understanding of how the UK fashion industry perceive and manage its sustainability risk and to see how practice is different from literature.

A question with an open ended probe was further added in the interview guide to overcome respondents' or interviewee bias (social desirability bias, Brace, 2008), *Do you mind sharing the most recent incident regarding sustainability and risk*?, with probing on how they managed that, leading to explore supply chain risk management strategies. Further, respondents were asked what they thought are the best ways to manage the sustainability and risk issues in their company and supply chain. In this way it was anticipated that the interviewees would feel less threatened when mentioning sustainability risk management strategies, if they were asked in a more general question.

As discussed in chapter two, sustainability requires long term planning and a focus on conservation of resources and similarly risk management requires a holistic approach, such as long-term relationships, information sharing, collaboration and cooperation with supply chain partners. However, fashion competes on consumption, lead times, and short-term relationships with many suppliers in order to get what is on trend, from wherever it is possible to maximise margins and remain flexible. Therefore, it seems (from literature) that the implementation of sustainability risk management strategies will slow down the fashion supply chains and ultimately adversely impact operational performance. Further, outsourcing of manufacturing and different operations to the Far East is also said to attribute to the increasing risks and sustainability issues in global supply chains. Therefore, a theme question was developed to explore the most vulnerable areas to sustainability and/or risk issues in the UK fashion industry. This question would help in exploring and understanding how sustainability risk impacts the operational performance of the UK fashion industry, with the potential to highlight main challenges to managing supply chain sustainability risk in the case companies.

Many researchers (Grant et al. 2015; Anderson and Anderson, 2009) maintained that soon business will face liabilities and heavy fines because the practices and processes they carry out will no longer be considered as sustainable or when legislation will make sustainable initiatives mandatory which are voluntary at the moment. Therefore, this theme was included in the interview guide, which would help in understanding whether the respondents perceived sustainability risk as critically important or not.

3.10 DATA ANALYSIS STRATEGY

In case studies, data analysis is at the heart of theory building but also known as the most difficult part of theory building, partly due to having the least developed strategies and tools (Yin, 2014; Eisenhardt, 1989). In case study research, the data collection and analysis very often run concurrently and need a chain of evidence. In this respect, Ellram (1996) suggested that the first step in data analysis should be documentation. Therefore, every interview was transcribed in detail, along with background information about each individual case company. Eisenhardt (1989) further advised data collection and analysis concurrently in order to manage the sheer volume of data in qualitative research. Similarly, Glaser and Strauss (1967) suggested joint collection, coding and analysis of qualitative data to explore multiple insights. This process further helped the researcher with data collection flexibility and freedom to make adjustments and necessary changes during data collection. This concurrent data collection and analysis, along with documents, observations and field notes, helped the researcher to capture ongoing thoughts about the phenomenon under investigation and to think beyond the obvious picture with questions such as *what is it I am studying? What am I learning and how do cases differ from each other* (Eisenhardt, 1989).

Therefore, this research followed all the above recommendations by concurrently collecting and analysing the data. Interview transcripts, documents, visits, observations and all other means were utilised for an in-depth investigation of within-case and cross-case analysis by looking at similarities, differences and pattern matching regarding the phenomenon of sustainability risk and supply chain sustainability risk management in the UK fashion industry.

All the above suggestions, recommendations and strategies are embedded in the qualitative data analysis strategy proposed by Miles et al. (2014), which was deployed as the data analysis strategy for this research. They divided qualitative data analysis into the following three phases:

- ❖ *Data reduction*: This phase entails editing, correction and simplification so that the useful information can be abstracted and organized. The researcher can then focus on the abstracted information for further analysis.
- ❖ *Data display*: Data display is an organized and compressed assembly of the data which helps the researcher to draw conclusions. Data display is mostly done by mapping and structuring, which enables the researcher to draw preliminary conclusions. Afterwards, it allows verification of conclusions among various methods, which may result in a need being spotted for additional information required.
- ❖ *Conclusion drawing and verification*: This phase entails the identification and interpretation of common patterns and themes within the data.

The above process suggests that data collection and analysis run hand in hand in an interactive and iterative manner, necessitating designing a data collection strategy which can help the researcher to answer the research questions and achieve the research aims. Their proposed components of qualitative data analysis are depicted in the following Figure 4 which is also known as an interactive model:

Figure 4: Qualitative Data Analysis: Interactive Model
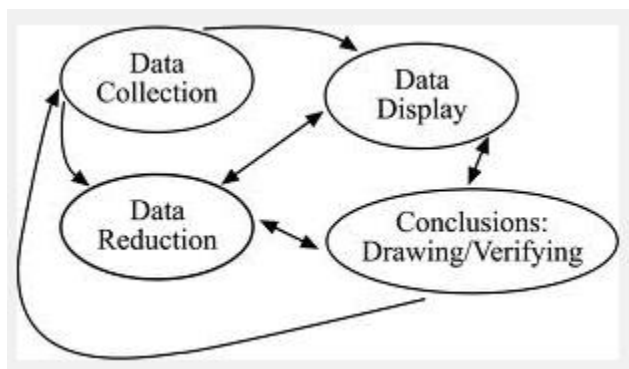
Source: Miles et al. (2014)

Coding is central to qualitative data analysis and according to Saldaña (2013:3), most often a code is "*a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data*". Miles et al. (2014) maintained that codes are stringent; they pull together the most relevant information from multiple sources, thus facilitating qualitative analysis. Multiple sources of information enabled the researcher to further highlight the most interesting incidents of a phenomenon in the data sources and to code it into categories, increasing the overall reliability of the analysis process (Voss et al. 2002). Further, "*by comparing each incident with previous incidents in the same category, the researcher develops theoretical properties of categories and the dimensions of the properties*" (Partington, 2000, cited in Voss et al. 2002: 212). Therefore, codes are regarded as a data reduction strategy where first of all relevant information is coded and then categorised (Miles et al. 2014). For the purpose of this research, a three step coding scheme proposed by Corbin and Strauss (1990) was selected because it is the most widely used and reported useful (Voss et al. 2002), helps in refinement of codes and to categorise them and shows how to move on from initial categories to the main categories (Voss et al. 2002). The following is the description of this three step coding scheme (Voss et al. 2002):

- ❖ *Open coding*: As a first step, data sources are fragmented and taken apart. Here concepts (defined as *basic building blocks of theory*; Voss et al. 2002: 212) are identified and developed analytically in terms of their properties and dimensions. Names are given to individual ideas, events, sentences and observations and they are re-grouped into sub-categories which are eventually grouped into categories.
- ❖ *Axial coding*: This step is concerned with putting together the data (from the first step) in new ways to re-group and link categories into each other in a rational manner.
- ❖ *Selective coding*: This final step is concerned with selecting a core category and relating it to other categories.

In this way, data was reduced, and concepts and categories developed, leading to data display and drawing/verifications which were examined in accordance with Miles et al. (2014), as explained above.

A Computer Assisted Qualitative Data Analysis Software (CAQDAS), NVivo was also used during the data analysis. NVivo is well recognised software for better data management, coding, categorisation, analysing and making conclusions (Leech and Onwuegbuzie, 2011; Welsh, 2002; Bazeley and Jackson, 2013).

Therefore, the researcher used NVivo but only for the purpose of data management and coding. After coding, the researcher printed codes with their hierarchies and sources. The remaining work, developing sub-categories or sub-themes and major themes, was done manually due to the following reasons:

❖ The NVivo features such as developing models, relationships networks, word frequency query did not found useful because these features only established relationships and developed models for the research subject areas instead of sub-themes and major themes and highlighting insights or something interesting in the data.

❖ Due to the nature of research, most of the NVivo features were not required such as assigning attributes and creating values.

❖ In case of completely relying on NVivo, there was a danger to lose the actual context in the data.

However, making folders for each case company and respondents and then using different coding features in the NVivo saved the researcher from the manual time consuming and laborious work of data management and coding. It also enhanced the rigor, transparency, validity and reliability and at the same time maintained the actual context of the data. Printed codes with their hierarchies and sources further accelerated developing sub-themes and major themes.

Different researchers (Creswell, 2007; Miles et al. 2014; Denzin and Lincoln, 2000; Spiggle, 1994; Srivastava and Hopwood, 2009) have proposed different frameworks for qualitative data analysis. However, in the context of multiple case study, the framework

proposed by Creswell (2007) is more structured, has a logical flow and at the same time is flexible. Therefore, it was selected to analyse cases in this research. Furthermore, Creswell's (2007) framework (Figure 5) seemed appropriate to guide the researcher from within-case analysis to comparison and theory development.

Figure 5: Analysis Framework for Multiple Case Studies
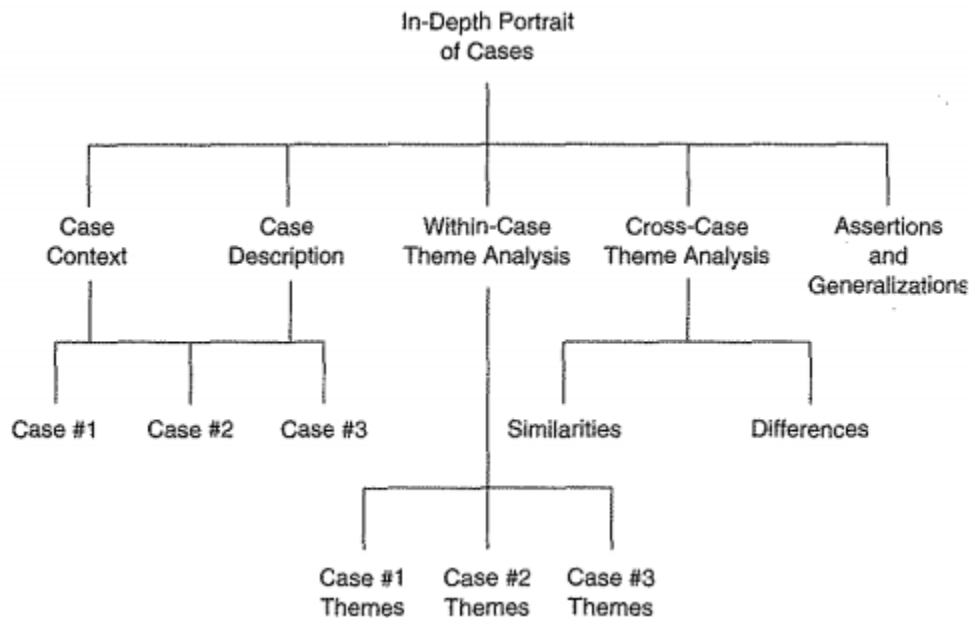
Source: Creswell (2007:172)

As the above figure shows, the framework has different stages and within each stage, there are different tasks. The outcome of the whole flow is a theory or a set of propositions.

3.10.1 Data Analysis Method

Denzin and Lincoln (2000) argued that qualitative researchers study spoken and written accounts of human experience, which also include transcribed talk. Similarly, Tesch (2013) distinguished between linguistic tradition and sociological tradition in relation to text, where the former treats text as an object of analysis and the latter treats text as a window into the human experience. Ryan and Bernard (2000) proposed a typology of qualitative techniques (Figure 6) which further reinforced the debate on qualitative data as text and text as an object of analysis:

Figure 6: Typology of Qualitative Techniques
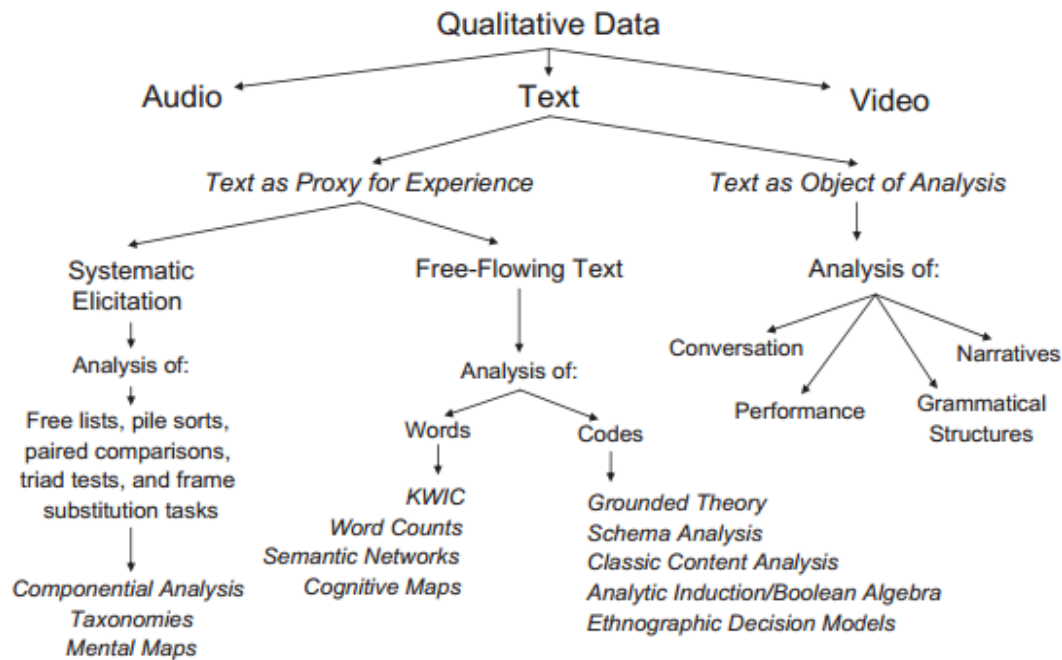
Source: Ryan and Bernard (2000)

Silverman (2013) maintained that the world's business gets done in conversation and talk; therefore, field data are always linguistic and mostly in three forms, interviews, texts and transcripts. However, he maintained that interview materials are narrative accounts rather than a true picture of reality. Therefore, researchers have to use their narrative data to make theoretical claims about the world. Silverman's arguments are further reinforced by Denzin and Lincoln (2000), who argued that interview transcription texts are social artefacts which are produced, shared and used in socially organised ways. However, they are not transparent representations of decision making processes or organisational routines. Instead, they are situated constructions and a particular kind of representation which is shaped by certain conventions and understandings. Therefore, such documents should be properly studied through appropriate methods such as narrative analysis.

Social constructionism further guides the analysis approach (section 3.2). For example, it uses rhetoric in narratives to understand how utterance works and further, the events,

practices and expressions in the interview transcript highlight the participants' perceptions and their understanding of reality. However, the social construction of their perceptions and understandings are not explicitly mentioned or known. Therefore, it necessitates the narrative analysis of the text to find how the social actors have expressed their cognitive expressions into social constructs. This implies that the interview will be transcribed into text and before analysis this text will be merely cognitive data, subject to narrative analysis to develop theory or propositions (Denzin and Lincoln, 2000). Therefore, it is the researcher who has to extract knowledge from these stories, events and practices from the text, by the use of narrative analysis.

Based upon the above discussion, this research treats qualitative data as text because the interviews were transcribed into text. Further, this text was treated as the object of analysis (Tesch, 2013).

3.11 THE PILOT STUDY

Researchers have placed a great importance on the usefulness of conducting a pilot study (Saunders et al. 2012; Bryman and Bell, 2015; Gillham, 2000; Yin, 2014; Ellram, 1996). For example, pilot interviews help in testing and enhancing the validity of interview guide and data to be collected. New questions can be added and existing ones can be either deleted or adjusted as probes. Based upon the responses, interview question wording can be changed to make it better understandable for the interviewee. Interview timing can be checked and, further, the most important themes or new insights can be explored, which could potentially be used to design a new question which had previously not been thought of and ultimately the pilot interview responses can be used to check the feasibility of analysis techniques.

In terms of number of pilot interviews, different researchers have different opinions depending upon time, resources and access to the participants (Bryman and Bell, 2015; Yin, 2014). However, Gillham (2000) maintained that there should be at least two pilot interviews. Due to the qualitative nature of the inquiry and potential for bias, the researcher decided to conduct three pilot interviews as a precautionary measure. The recommended procedure for pilot interview is to approach respondents with a similar background, preferably experience in the area of research and who truly represent the

research participants, but they should not be the actual respondents or from the actual organisation of a case study (Yin, 2014; Bryman and Bell, 2015; Gillham, 2000). Therefore, pilot interviewees were selected from outside the case companies. Further, these pilot interviews were used to check whether the narrative analysis method, Creswell's framework and social constructionism were applicable from an analysis perspective or not.

3.11.1 Pilot Study Cases: Description

The pilot interviews constituted a snapshot and a reality check for actual interview guide development and what was to be done in the conduct of actual data collection and analysis. The following is a description of the three respondents for the pilot interviews.

The first pilot interview (P1) was conducted with a designer who immigrated to the UK from Greece, 25 years ago. In Greece, she had worked in textile and clothing factories and therefore she had extensive knowledge about production and manufacturing. After immigration, she started her own business, mainly as a designer in the beginning, but in the last 15 years, she had scaled up her business and was supplying to the major retailers in Britain. During this period, she had completed a Master's degree in business administration from the UK and her Master's thesis was on sustainability (TBL) in fashion garments; therefore, she was very familiar with sustainability related issues in fashion supply chains.

The second pilot interview (P2) was conducted with a designer and risk management consultant, in London, who had recently completed a PhD in risk management in clothing supply chains from a UK university. Therefore, she was well familiar with risk related issues in garment supply chains. She also visits, on behalf of her clients, different parts of the world and so is very familiar with the working environment and supply chain issues in the fashion industry.

The third pilot interview (P3) was conducted with the managing director of a group training association established 26 years ago to provide skills to the UK textile and garment industry. Before taking charge as the managing director of the association, he had worked for many textile, garment and fashion organisations and bodies. Therefore,

the interviewee was very familiar with risk and sustainability issues but also had extensive supply chain knowledge.

3.11.2 Analysis of Pilot Interviews

The interview with P1 was conducted at her work place. She defined risk as the possibility of something going wrong so she was stuck with a large quantity of stock and ultimately suffered financial losses. In terms of sustainability, she knew the TBL and SD concepts. However, the financial viability of her business was the main concern from a sustainability perspective. For her, financial losses, lack of technical skills, continuity of supply, consumer behaviour, the recession, retailers' behaviour, brand reputation, the size of her business, the attitude of her workforce and legislation were the main risk and sustainability issues.

She believed that companies in the UK fashion industry are struggling to survive due to continuous contraction, outsourcing and imports of cheap garments from China and the Far East. Most of the workforce in the existing companies in the UK, she claimed, is uneducated and not very familiar with the fast-paced fashion environment. There are only few small size companies in the UK which are struggling to attract skilled workforce and are outsourcing almost everything from overseas. There is much focus on shifting and transferring risks and sustainability pressures on the up-stream level of the supply chain from the retailer. Pressure for margins, discounts and cancellation of orders, are routine in the UK fashion industry. There is no cooperation and information sharing within the companies and within the supply chain. Overall, the fashion industry in the UK is very competitive; factories, retailers and suppliers are all competing against each other. However, she believed that a cooperative and collaborative attitude, especially from retailer, could help small and medium businesses to be financially viable and grow.

She did not have any formal strategy or plan for risk and sustainability issues identification and management and mostly relied upon her experience and knowledge. She also tested small units in the UK before commencing mass production and checked workforce availability and production capacity. She did not have any focus on social and environmental issues, but looked carefully to see if anything had potential to impact financial position of the company. In her view, the biggest problem is that no one can

predict risks and sustainability issues due to longer and invisible supply chains. The risk and sustainability issues prioritisation was mostly based upon financial impact, company growth and potential for positive impact on brand image. She also visited factories to make sure everything would be in line, to avoid having to give a discount to the retailer or sell at a lower margin in case of a quality or other issue. She firmly believed that she did not have any alternative plan and if all the projects failed, she would scale down her operations to only T-shirts manufacturing. When asked, she mentioned that the best ways to manage risk and sustainability are get close to the target market by shortening supply chain length, more cooperation and collaboration among supply chains partners, cultural changes, information sharing and re-designing adaptable supply chains.

She believed that although it would increase the cost and lower the speed of fashion supply chains, nevertheless, the implementation of sustainability and risk management strategies would have a positive impact on the operational performance of the fashion supply chains. For example, if a factory was approved, retailers and other manufacturers would prefer to buy or source from that factory because "*no one wants to spend money and effort to go every day into factories for surprise visits and audits*". This would also enhance their brand reputation. She believed that for some businesses, sustainability is already a risk because they have been caught in the spotlight or their supplier was unable to provide their requirements due to financial problems or bankruptcy.

P2 maintained that all sustainability initiatives are actually means of risk management "*unless if you're doing a business in a war zone to be called it as purely risk management*". Among the key risk and sustainability issues, she thought, are availability and continuity of supply and raw materials, energy and water shortages, price fluctuations, regulation, consumer behaviour, lack of knowledge, supply chain complexity, existing business models, brand image, industry attitude and behaviour and long lead times.

She believed that sustainability in its true sense has not been applied at the mass manufacturing level. If it is, then there are very strong business reasons behind it or because it is a family business whose owners want to pass it on to future generations.

Most sustainability initiatives have been taken in response to catastrophic events. However, still the actual motive of those initiatives was not sustainability, but to manage reputation so that companies could sell and maintain their share value. She believed that UK fashion retailers just pressurise their up-stream supply chain partners, specifically suppliers, to do everything for them. Price and margins are the major interest of the industry. She also believed that consumers are not concerned; as long as they get what they want at a price they can afford to pay, they are happy to make repeat purchases.

Some ways of identifying risk, she mentioned, are auditing, visits, close working relationships and subscription to information providing agencies. Some of the sustainability risk management strategies of a company she was currently working with, she said, were use of recycled fibre as a source of raw material, trying to reduce energy where possible, tight control on production for quality and the kind of materials bought, hedging, getting accreditations, updating machinery, visits, testing small units in the UK and effective at cleaning up. However, the company did not question factories about what sort of dyes were being used. Their main challenges were that they were very slow and not very proactive, and did not have traceability of materials, so legislation could bring them down. Regarding the impact of sustainability risk on operational performance, she said companies she was currently working with did not have flexibility or freedom to access fibres, resources and raw materials, because there was not enough quantity available or if there was, then prices were too high. For sustainability risk management, the first and most important thing is to change the culture and ways of thinking. There is much need to talk to competitors and to do market research and analysis to figure out where the market will be in the next 10, 20 or even 50 years, which at the moment the UK fashion industry is not doing.

Major challenges to managing sustainability risk, she argued, are affordability, cost and consumer behaviour. She believed that most retailers are not ready yet and British manufacturers are operating in niche markets and cannot supply to the mass market, as they do not have the capacity they used to. For this reason, the sustainability risk management debate for them is pointless, as their main focus is on survival. Lack of knowledge within the industry, technology is outdated, inefficient and labour intensive.

Regarding the traditional sustainability concept (TBL), she maintained that no one has time to apply it because their whole model is based upon a number of hours or very few weeks. They are only interested if the issue is put in terms of the financial or cost point of view or the continuity of their businesses. She firmly believed that there are good reasons to use it in certain aspects but in her view, even traditional sustainability does not mean social and environmental issues but actually risks, because they all directly influence the bottom line and that is what matters for the UK fashion industry: money and margins.

The interview with P3 was conducted at the head office, training and manufacturing place where machinery was available for training and manufacturing. The researcher also visited the whole set-up after the interview. For P3, sustainability is not an environmental or social intervention; rather, it is a sustainable business intervention and the top end of the retail spectrum might be using it for marketing purposes. However, if companies are implementing it in its real sense, then there are strong financial imperatives behind it. On the other hand, cotton shortage and prices, disputes in China and Japan, long lead times and quality issues are becoming more serious, prompting a call for on-shore production. He believed that only top-end quality fashion garments or technical textile or niche areas are future business areas for British manufacturers and that mass production is not possible at all, due to non-availability of raw material.

The interviewee criticised what he saw as an inadequate level of knowledge in the industry regarding manufacturing and management. P3 believed that innovative and quality products such as bullet proof, fire retardant, stain resistant, anti-bacterial, close-fitting and water resistant products are the areas where British manufacturers have a future. P3 also believed that there is huge market for made-in-Britain, history, quality and heritage of British made products and argued that the UK fashion industry was unable to benefit from their brand image in the international market. However, he cautioned that it is very important to protect brand image due to longer, complex and invisible supply chains.

Regarding workforce, he argued that the young generation have no aspiration to work in manufacturing industry and also lack a professional working attitude. To remedy this problem, he argued that manufacturers should introduce apprenticeships and the government should finance vocational education and training courses in educational establishments.

The most important sustainability or risk issues, he thought, were infrastructure and structural issues, outsourcing, complex supply chain, technical skills, brand value, long lead times, shortage of labour and increasing manufacturing costs in China, trade tariffs and quotas, the changing priorities of Chinese manufacturers with a major focus on the domestic market, credit risks, capacity changes, the global recession, price of raw materials, environmental pressures, health and safety issues and legislation.

He believed that long supply chains and low visibility and changing profile of the suppliers' market are major challenges for the UK fashion industry. He also believed that near-shoring could be a wise move and maintained that due to sourcing from China and the Far East, seasons are missed, and orders are incomplete with poor quality, so that consequently, the industry has seen a big increase in discounts in recent years.

In terms of sustainability risk management, he suggested that being quick and close to the target market, on-shore or near-shore production, major focus on R&D, managing experience, visiting R&D centres, exploring new markets especially niche areas, apprenticeships, training, increasing capacity, branding and communication and quality control are the elements which could help the UK fashion industry to survive.

P3 mentioned that it is becoming extremely difficult for Chinese manufacturers to continue manufacturing under the same working conditions and wages as before and they have to increase wages by 25% yearly. He believed that sustainability would give competitive advantage and be an area where companies can create differentiation in the future. Another area in which the UK fashion industry can benefit is online business, but he mentioned that the UK fashion industry has no knowledge about this platform.

According to P3, environmental pressures and legislation will be major issues of concern in the further but the UK fashion industry is not ready yet. P3 also criticised the credit policy of UK financial institutions, arguing that bank guarantees and the credit

capability of companies are major issues in the growth of small and medium businesses. Speaking from a consumer perspective, today's consumers do not care about the environment and have no knowledge of how garments are manufactured or of the social issues in this supply chain; all they care about is trend and price.

3.11.3 Learning from the Pilot Study

Conducting the pilot interviews proved extremely useful in terms of highlighting weaknesses and areas for improvement. The following are the major lessons learned from the pilot interviews, which were integrated in the final interview guide, used for data collection from the actual case companies:

As literature suggests, in most cases the place of interview is decided by the interviewee (Yin, 2014). All three participants chose the interview location by themselves. Further, conducting interviews in the interviewee's natural setting helped in making observations and to see activities and work in progress. Interviewees were relaxed and very comfortable and when complicated issues were raised, they not only provided documents for further explanations but also arranged a factory visit to make their claims easily understandable. The most important aspect of a factory tour was the informal talk and comments which interviewees made regarding risk, sustainability and fashion supply chains and the steps taken by the company in terms of modifying processes, activities and technology up-gradation. In both cases, the factory tour took more than half an hour, while the interview time was 45 minutes on average, which proved that conducting the interview at the interviewee's work place was extremely useful in terms of deeper explorations, rich information, opportunity to make observations and understanding of the case company's overall context. In the second interview, this opportunity was not available, but after the recorder was turned off, the interviewee accompanied the researcher to the main exit and carried on talking about the research issues, which was very helpful in providing deeper understanding about the interview. Therefore, so far there are three main lessons: first, it is better to conduct the interview at the interviewee's work place (head office or factory). Second, the time after the interview is as valuable as the interview itself and should be given consideration in the data analysis process. Third, it was better not to include technology related questions or

probes as the interviewees offered a factory visit and there was enough time to explore such issues during the visit.

The next lesson was regarding the use of terminology in the interview guide, specifically academic terms such as triple bottom line, sustainable development, risk assessment and evaluations, mitigation, resilience and vulnerability. P1 was quite comfortable with sustainability related terms but uncomfortable with risk and fashion related terms. In contrast, P2 was very comfortable with risk management and fashion related terms but uncomfortable with sustainability related terms. Surprisingly P3, despite years of experience in the industry, was also uncomfortable with academic terms. Therefore, based upon this learning, the interview guide was modified with alternative words.

The next lesson was about the structure of the interview guide. During the interview, it was found that it was impossible to allocate a specific time to each question and it was the interviewee who controlled the interview environment. The interview with P1 took longer than expected and the researcher used many probes and prompts. Learning from P1 was incorporated in the interview with P2 by merging some questions and turning others into probes. One of the major lessons in this phase was the need for a new question, regarding brand. Brand was something which was mentioned by all three interviewees. After recognising this major theme in the pilot interviews, a new question regarding brand was added in the interview guide.

Although it was explained that the information would be treated as confidential and would be used only for the research purpose, still the interviewees were hesitant at the start of the interview. Further, it was realised that there is a lot to do to build trust before an interview. Therefore, the opening of the interview was very descriptive and informal and the purpose of the research and measures taken to maintain the confidentiality of the interviewee and the company were re-iterated, which helped in gaining trust. After realising that the interviewee was at ease and confident, then permission for turning on the interview recorder was requested. However, interviewees were told that if they so wished, they could ask for the recorder to be turned off at any time during the interview.

After two pilot interviews, it was realised that the level of information would vary significantly from interviewee to interviewee due to their level of knowledge on the research topic, their experience and positions within the case company. The learning from this was to give extra time and possibly more probes where the interviewee did not have enough information to share and to keep them motivated and engaged to share situations and processes. This necessitated allowing enough time for the answers and adjusting the interview time and sequence based upon the responses. However, asking all interviewees all the questions in the same wording would still be necessary for data analysis, to facilitate comparability.

Another lesson occurred when the researcher started transcribing interviews. When the researcher started transcribing the interviews, it was very hard to understand different accents. Due to financial reasons and following several calls to self-transcribe interviews (Bryman and Bell, 2015; Miles et al. 2014), the researcher first transcribed the interviews by himself. Then, the interview transcripts and recordings were passed to a native English speaker, who listened to the recordings, checked the transcripts, and corrected mistakes. Another benefit of this practice was that the English lady also explained some idioms that have implicit meanings, which the researcher did not understand due to cultural differences.

The biggest benefit of conducting pilot interview was to decide upon the correct data analysis method, narrative analysis method. As soon as the researcher started the interview, the interviewees started answering questions in the form of stories, for example, stories about the history of the British textile and clothing industry and its global dominance, how the industry diminished, how and when the British retailers started outsourcing and off-shoring manufacturing and other supply chain operations and abandoned the British workforce. Following were stories about Chinese imports and MFA (Multi-Fibre-Agreements), diminishing technical skills and lack of interest from young generation in factory work and government support. This led the researcher to believe that the best method to analyse the interview data would be narrative analysis, which is not only a temporal data analysis method but is also used for existing organisational routines, processes and activities which are described in terms of stories (Bryman and Bell, 2015).

The above discussion was regarding the learning and improvement of interview guide, enhance its quality and to test data analysis method. As mentioned earlier, another motive to conduct pilot interviews was to get initial insights about the phenomenon of sustainability risk in the context of the UK fashion industry. Therefore, the following (Table 14) are the major insights/themes about the phenomenon of SCSRM gained from the analysis of the three pilot interviews:

Table 14: Major themes emerging from the pilot study

Areas of exploration	P1	P2	P3
Defining sustainability risk	❖ Sustainability as financial viability of business and financial losses as risks.	❖ All sustainability initiatives are actually means of risk management.	❖ Sustainability risk is a sustainable business intervention.
Views about sustainability risk	❖ Sustainability risk is the one and the same thing.	❖ Sustainability risk is the one and the same thing.	❖ Sustainability risk is the one and the same thing.
Key risks and sustainability issues	❖ Financial losses, lack of technical skills, continuity of supply, consumer behaviour, the recession, retailers' behaviour, brand reputation, the size of her business, management attitude, lack of resources, legislation and lack of UK manufacturing and cultural issues.	❖ Availability and continuity of supply and raw materials, price fluctuations, regulation, consumer behaviour, lack of knowledge, supply chain complexity, existing business models, brand image, industry attitude and behaviour and long lead times. UK fashion sector infrastructure and structural issues.	❖ Infrastructure and structural issues, outsourcing, technical skills, brand image, shortage of labour and increasing manufacturing costs in China, trade tariffs and quotas, credit risks, capacity changes, the global recession, price of raw materials, cultural issues, environmental pressures, long lead times, quality and legislation.
SCSRMP	❖ No formal process or strategy for SCSRM.	❖ No formal process or strategy for SCSRM.	❖ No formal process or strategy for SCSRM.

Areas of exploration	P1	P2	P3
Main challenges to managing SCSRs	❖ Retailers' pressure for margins and price cuts, shifting and transfer of sustainability risks. ❖ No cooperation, collaboration, integration, information sharing and communication within the companies, supply chains and the industry. ❖ Lack of UK garment manufacturing, outsourcing, lack of knowledge, industry culture, consumer attitude, longer, and complex and invisible supply chains.	❖ Supply chain visibility, complexity and brand reputation. ❖ UK fashion retailers pass SR pressures to their up-stream supply chain partners, for price and margins and sustainability risk issues. ❖ Lack of capacity, lack of knowledge about SCSRM, consumer attitude and outdated technology.	❖ Outsourcing, supply chain visibility and complexity issues and impact on brand image. ❖ Retailer and consumer attitude. ❖ Lack of resources and knowledge. ❖ Lack of communication, information sharing, cooperation and collaboration within the companies and the supply chain partners.
Impact on the operational performance	❖ SCSRM will positively impact financial performance by reducing different costs.	❖ SCSRM can positively impact operational performance of the firms but their business model does not support its implementation.	❖ SCSRM will positively impact companies as well as the British society but the top end of the retail spectrum only interested in reducing costs and increasing margins.

Making comparison of the above insights gained from pilot interviews and challenges to the UK fashion industry, it appears that there are lots of similarities in pilot interviewees' views about UK fashion industry and the discussed literature. For example, lack of resources, industry cultural problems, retailer pressures, and supply chain complexity, lack of visibility and control, capacity constraints, outsourcing, legislation, consumer attitude and behaviour, the recession etc. Some new insights were regarding brand image, industry structure, lack of knowledge, information sharing and communication, supplier market transformation, the main concern of SCSRM is financial viability of business, lack of UK manufacturing, no formal SCSRM process, etc. These insights were further integrated into the main interview guide to explore if they might form major themes or were just initial thoughts. Furthermore, themes from the pilot interviews and literature will be further discussed in subsequent chapters of within-case and cross-case analysis to reach to major themes and finally to design a SCSRM typology for the UK fashion industry to manage its SCSR.

Overall, conducting the pilot interviews proved extremely useful to improve the interview questions, increase quality, and decide upon the analysis method, as well as learning about the industry, supply chains and current major issues. The final interview guide is attached in Appendix Two.

The next chapter will discuss the case companies' context and report within-case analysis.

CHAPTER FOUR: WITHIN-CASE ANALYSIS

4.1 INTRODUCTION

Following Creswell's (2007) framework, this chapter will provide the case context and within-case analyses. Eisenhardt (1989) mentioned that within case analysis involves detailed write-ups for each company and its processes in terms of the research subject areas. Therefore, the company history, current structure and supply chain sustainability risk management processes of each case company will be described. Further, the results from the individual cases relevant to the research questions will be provided. This will further enhance the trackability and transparency of the results while maintaining the particular value of each individual case. The importance of within-case analysis is due to the uniqueness of the cases, which requires analysis of data case-by-case. Highlighting the benefits of within-case analysis, Eisenhardt (1989) maintained that the main advantage of within-case analysis is that it enables the researcher to cope with a large volume of data. She further argued that these descriptions are central to generate insights. Further, the main purpose of within-case analysis is to familiarise the researcher with each case as a stand-alone entity and to allow the unique patterns to emerge before the researcher seeks to generalise patterns across cases.

4.2 CASE COMPANY 1 (CC1)

The history of CC1 can be traced back to the 1900s, related to a family in the English Midlands who made shoes. In the 1960s, the family opened a shoe manufacturing factory in partnership with two European partners. CC1 is a global brand with a rich British heritage. Its products are sold in 63 countries, mostly in the UK, Europe, the US and Asia. Although CC1 began its operations with shoe manufacturing, it started a clothing line in the 1990s. At that time, CC1's production capacity was 10 million shoes per year and worldwide sales were around £170 million. In 2000-2001, CC1 started to face problems; new stores were opened overseas but sales began declining in 2002 and CC1 predicted a dark period for the brand. In 2002, CC1 suffered an overall £30 million deficit and narrowly escaped bankruptcy. Further, in 2003, operating costs and huge losses forced CC1 to cease operations in the United Kingdom and move all production to China and Thailand. However, it took a year or so for CC1 to turn the situation in its favour and in 2005, after re-structuring, CC1 returned to profitability. CC1 now sells about five million pairs of shoes a year. Most of its products are made overseas; however, about 70,000 a year are still produced at its factory in the Midlands.

CC1 learned a lot in between 2000 and 2005 and has experienced constant growth since 2005. In 2011, again, CC1 launched a clothing line. CC1 does not own any garment factory; all the clothes are outsourced from various countries, including the UK, but mostly from the Far East. CC1 provides two main categories, men's and women's high quality cotton and wool clothing from classic to fashion. Now the company employs around 500 workers in the UK, of whom around 100 are directly linked to manufacturing.

CC1 sells to luxury brands but also markets its own branded products, which are distributed through its own UK and international retail outlets, online and through sales agents around the globe.

4.2.1 Defining Risk, Sustainability and Sustainability Risk

CC1 respondents defined risk differently, from the perspective of external influences and lack of control, unexpected things which can impact financial performance, trust involvement, uncertainty in decision making, brand reputation and something unknown.

For example, the sourcing manager defined risk as "*unexpected things which have potential to impact our financial position and brand*".

CC1 respondents defined sustainability in terms of business and supply chain viability, longevity and continuity. Only a few respondents also mentioned environmental and ethical dimensions. However, when asked to elaborate they maintained their initial stance of business and supply chain viability and continuity. For example, the supply chain manager defined sustainability by saying, "*I think 6 to 12 years ago maybe it would be more about how environment friendly we are but I think now it's more about how viable is the supply chain on a long term basis*".

In terms of sustainability risk, respondents maintained that sustainability and risk is one and the same thing and that in the near future it will be even more critical risk. For example, the design manager maintained, "*risk would be the price but also actually I think they go hand in hand, risk and sustainability, so it would be the price, it would be the amount that we can get, and it would be trained skills*"

Some of the reasons underpinning respondents' perception on sustainability and risk as one and the same thing are the same key risks and sustainability issues (Appendix Three). In all the case companies, a direct question was asked to all the respondents about what are the key risks and sustainability issues in their company and supply chain to generate tables in appendix three. Further, a careful examination of the table in Appendix Three demonstrates the similarity of respondents' arguments because most of the key risk and sustainability issues are the same. As, the logistics manager maintained, "*My answer is the same for key sustainability issues*".

4.2.2 Supply Chain Sustainability Risk Management Process

CC1 respondents perceive sustainability and risk as the same thing. Therefore, most of the strategies for risk identification, prioritisation and mitigation are the same. In the following section, this research will highlight the most important SCSRM strategies at CC1:

Supply chain sustainability risk identification strategies: CC1 has no specific formal strategy or plan to identify SCSR; doing so is largely embedded in the jobs and duties of

the above mentioned managers. Sourcing and technical teams along with a group of generalists help CC1 to highlight SCSR. CC1 has about 300 years of experience in its sourcing function and the managers in sourcing function are well connected with supply chain partners in the South East Asia which helps them to identify SCSR. CC1 also subscribed to a variety of formal and informal agencies, information bodies, companies on CSR, NGOs and industry groups to get pre-warnings as a mechanism to identify SCSR. CC1 has its own factory in the English Midlands which helps it to identify SCSR. CC1 also runs frequent product and process review sessions in order to learn and identify SCSR for the next products or processes.

CC1 strongly believes in constant communication and dialogue among the company's supply chain partners. This is actually a result of learning from re-structuring the company but used for SCSR identification. CC1 also seeks third party audits and does its own follow up when it feels it is necessary. The product design stage, basic materials or inputs and machines are considered as the most important stages to identify SCSR. CC1 specifically looks at where materials come from, what they are made of, whether they are dyed and what sort of chemicals have been used. Customer requirements and promised delivery date are also used for SCSR identification. From the promised delivery date, CC1 then looks at the workforce availability in the UK and Asia, capacity, lead times, logistics and transport issues and environmental considerations. Cost, price of the final product, quality and customer service are also looked at carefully. CC1 also uses checklists and hands a specification sheet to suppliers and supply chain partners to identify SCSR. CC1 also does sales analysis and shares information with design and commercial directors to identify SCSR. This is basically done to discontinue non-selling units, to avoid markdowns and to reduce cost and financial losses.

Supply chain sustainability risk prioritisation strategies: CC1 prioritises its SCSR based on availability and continuity of raw materials, required quality and workforce availability in South East Asia. Quality and customer service are also mentioned as the main prioritisation criteria at CC1. Cost, financial impact and anything that can help in company growth and positive impact on the brand image are also considered priorities. As a family business, relationships with certain customers are also considered as most important. However, recently profit margins and volume have also been considered as

main priorities. Further, ranking of the customers is also in practice, whereby the most important customers from margins, volume and relationship perspectives are ranked as important. Anything which has potential to impact delivery date is considered as most important to resolve first. Analysis of information gained through different platforms is also performed to prioritise different issues. Due to its very strong brand name, CC1 also evaluates and prioritises the element of trust in deciding its supply chain partners, products, processes and even customers. Ensuring the availability of technically skilled workforce in South East Asia, and raw materials at the right price and quality for the continuity of the business are the highest considerations.

Supply chain sustainability risk mitigation strategies: CC1 is very proactive in terms of managing its SCSR. In the last few years, CC1 has spread its SCSR and reduced dependency on its suppliers and supply chain partners. CC1 has hired a lawyer in the US to specifically guide CC1 in relation to restricted substances and provide guidance in the light of changing legislation, but she is not titled a SCSRM manager. CC1 has good relationships with its suppliers and constantly communicates and shares information with them as part of its sustainability risk management process. CC1 also nominates its suppliers for their best performance in terms of product quality, cost and customer service. To manage workforce problems in South East Asia, CC1 constantly trains its workforce and provides return on work incentives as a SCSRM strategy. In the UK, CC1 also constantly trains its workforce, has introduced new apprenticeships to fill the skills gap and invests quite heavily in skills development, machinery purchase and developing innovative products and processes. CC1 also carries out scenario and contingency planning to manage catastrophic or unpredictable SCSR. External validation on products and processes and collaboration with some UK universities for R&D were also mentioned as SCSRM strategies. Co-operation, information sharing and communication and building relationships within the company, supply chain and industry was cited as a SCSRM strategy and for this purpose; numerous bridging points have been established.

Large periodic review sessions are also helpful in managing SCSR. Event based learning and sharing information from such learning within the company and supply chain partners is also a SCSRM strategy. For sustainable manufacturing continuation, having more than one option in terms of supply chain partners and sub-contracting in case of

capacity problems is also in practice at CC1. CC1 also shares resources and seeks help from multiple sources even from competitors as a capacity management tool. In terms of quality, CC1 has set criteria by which it tests everything, to make sure it passes. CC1 has also learned from its history and member experiences to manage SCSR. Such learning is further reflected in a change of company culture and management style as a SCSRM strategy.

SCSR are also managed in collaboration with the design and senior management team, who look at cost, final product price and customer requirements. Cost management, changes in management style, order and customer book management are also used to manage SCSR. Working relationships even with competitors and other organisations in the industry were mentioned as part of SCSRM strategy. CC1 also makes surprise visits to factories, farms and other working facilities at the supply chain partners' premises. CC1 is trying to reduce all types of waste and planning to start a waste recycling process at a site which at the moment is being sold to some external processing companies.

4.2.3 Main Challenges in Managing SCSR

This section sheds light on important questions such as why the companies in the UK fashion industry are not managing their sustainability risk and how sustainability risk impacts the operational performance of the companies in the UK fashion industry.

The main challenges mentioned by the respondents at CC1 are the supplier market uncertainty and different costs such as labour, energy and operating in the UK. Although CC1 has gone through major re-structuring, of which changing the company culture was part, however still CC1 believes culture is a major barrier in managing SCSR. Respondents also believe that communication is not at the level that it should be; another aspect is that the people in the supply chain do not want to communicate from SCSR perspective. Spending a day in the factory and head office, the researcher also noticed that substantial improvements can be brought by increasing communication, information and more interaction between different departments. Lack of UK manufacturing, constantly changing and restrictive legislation, perceptions about textile manufacturing and industrial uncertainty is also major barriers in SCSRM. Outdated technology, manufacturing complexity, and lack of supply chain knowledge were also

mentioned as major challenges in managing SCSR. The researcher also observed some very outdated technology at the factory.

Another challenge is the lack of supply chain visibility and control, especially at the upstream level of the supply chain. Wrong or unrealistic expectations from customers also make it difficult to manage SCSR because they want very quick turnaround while allowing very little time. Further, retailers are becoming more interested in mixed production and constantly asking for price cuts and margins. Lack of skilled workforce, technical skills and capacity problems, were also mentioned as major challenges. Trends, seasonality and short product life-cycle also proved to be major barriers because they do not allow much time for planning and to evaluate things in detail. With regards to traditional sustainability (TBL), CC1 respondents believe that sustainable options are complicated, expensive, and difficult to find information about and to measure against. Another major challenge the CC1 respondents mentioned is that the '*consumer does not care*', and that a big cultural change is needed within the company, industry and society. Difficulty in predicting SCSR, company size, and not having resources were also mentioned as major challenges. Although CC1 is in collaboration with UK universities for R&D, innovation management is still a big challenge for CC1. Prediction, especially of high impact risks such as natural disasters, political unrests in supplier markets, weather conditions, earthquakes, tsunamis and wars, was mentioned as the biggest challenge.

In order to answer the research question on how the companies in the UK fashion industry can manage their supply chain sustainability risk and to design SCSRM typology, a question was asked from the respondents about what could be the best ways to manage supply chain sustainability risk in the UK fashion industry. The respondents proposed various strategies which are presented in Appendix Four. These suggestions also mean that CC1 might not be doing this at the moment but respondents perceive, based upon their experience while working in the company, that these could be the best ways to manage SCSR.

4.3 CASE COMPANY 2 (CC2)

CC2's history can be traced back to the 1780s and today as a textile manufacturer CC2 is known as the world's best designer knitwear and longest running factory manufacturer in England, UK. In the 1890s CC2 became a limited company and developed a production line capable of manufacturing fully fashioned underwear and outerwear.

Towards the end of the 19th century, CC2 extended its activities to include knitting and hosiery manufacture. The designer label CC2 is now very well known in boutiques, department stores and classic retailers around the globe. In the 2000, CC2 opened its flagship retail store in London. CC2 sells to over 30 countries. In international markets, agents and online sales are major sources of sale; however, the company is planning to open flagship stores in the world's fashion capital cities. More than 70% of its volume is for exports while the largest export market is Japan. There are concessions in some branches of Selfridges and Fenwick.

CC2 outsources all of its raw materials and some of the processes also take place in China and Italy. More or less all of manufacturing takes place in the UK factory. CC2 is at the forefront of sustainable initiatives and was recently awarded the *Royal Warrant*, which means CC2 supplies to the British royal family as well. Nearly all of its products are made of natural fibres, such as Merino wool, Cashmere and the world's top quality cotton.

Although CC2 still has four to five decades old technology and ways of work which they call British heritage, the current managing director has recently adopted the Japanese technique of *Kaizen* to bring small incremental efficiency gains in production lines. CC2 started exporting its products in the 1960s and found a very good market internationally due to its quality, history and British heritage.

4.3.1 Defining Risk, Sustainability and Sustainability Risk

CC2 respondents defined risk as anything which has potential to disrupt or discontinue processes for any length of time, threats, potential for something to go wrong, planning perspective, financial position of the company and the customer, losing orders and bad

customer service. For example, the production manager defined risk as "*anything that shuts down potentially the production process for any length of time*".

Most of the respondents defined sustainability from a long-term but broad perspective, ensuring supply continuity, long term planning, business and supply chain viability, longevity and continuity. For example, the purchasing manager defined sustainability as "*it is a long term responsibility for maintenance of supplies for the continuation of the business*".

In terms of sustainability risk, respondents maintained that sustainability and risk are one and the same thing and that the only way to survive in the volatile sector, fashion, is to manage SCSR. For example, the sourcing manager maintained that *"sustainability is already in risk in certain areas of our business in terms of raw materials"*. Appendix Three provides key risks and sustainability issues at CC2 which further demonstrates the similarity between key risks and sustainability issues and reflects that the respondents at CC2 also perceive risk and sustainability as one and the same thing. As described by the design manager, "*I think it's hard to differentiate between what are risks and what are sustainability issues, I would consider them the same and my answer is the same for sustainability issues*".

4.3.2 Supply Chain Sustainability Risk Management Process

For SCSRM, CC2 relies upon the technical manager or sourcing manager, the production manager (also managing director) and a member of the human resources (HR) department, mainly for planning purposes. However, SCSRM is largely embedded in the roles and responsibilities of managers. Overall, there is no specific team or department for SCSRM and it is largely done on a departmental basis. Further, the ultimate responsibility lies with the technical manager to guide the company from a SCSRM perspective. The following are the most important strategies for SCSRM at CC2:

Supply chain sustainability risk identification: Product and supply chain mapping is practised to identify unsustainable materials and practices. CC2 seeks guidance from multiple bodies including NGOs, working groups and universities for SCSRM. The technical manager visits different countries where most of its operations are carried out to audit and identify SCSR. CC2 also evaluates everything backwards from the delivery

date and further looks at legislation for social and environmental issues and the kinds of chemicals that can be used; for this, European law and legislation are used as guidelines (the researcher also looked at these documents). CC2 also has a meeting system which is captured on an IT system, to identify SCSR. The researcher was provided an opportunity to visit the meeting room and look at the meeting system. Company growth opportunities, capacity building and protecting brand image are also basis for SCSR identification; therefore cost, credit insurance, quality checks, credit covers, credit checks, suppliers and customer viability, insurance ratings and financial issues are also carefully looked at and assessed to identify SCSR.

CC2 strongly believes in partnership, information sharing and communication and identifies its SCSR in combination with its agents, distributors, licensees and people employed in different parts of the world in its supply chain. CC2 is almost a vertical manufacturer and uses its factory for SCSR identification. Recently, CC2 entered into multichannel retailing, which helps CC2 in identifying trends, popular and unpopular styles, as a mean to identify SCSR. Another unique way to identify SCSR is to generate a report every morning on different processes, especially production and manufacturing. Report generation sometimes runs twice a day; when a process or project is nearing the end it becomes more critical. Design is also considered as most important to identify SCSR, so senior management meets designers to discuss and identify SCSR. At its factory, a bar-code system is also applied to identify sustainability risk during manufacturing processes.

Supply chain sustainability risk prioritisation criteria: In order to determine priority and evaluate SCSR, cost, financial gains, final product price, capacity building, company growth and brand image are the main considerations. Maintaining the *Royal Warrant* is also considered as an important element for CC2. Impact on business is also used for prioritisation; high impact or high consequences issues get high priority. Credit cover, debt books and financial accounts are at the heart of the prioritisation criteria. CC2 has been in business for more than 200 years and has very loyal customers; therefore prioritisation criteria also include customer relationships and requirements. CC2 also considers customers' order volume, its own margins and customers who pay in full and on time. On-time-in-full (OTIF) delivery to customer or fulfilment of orders has the

highest priority to provide better customer services and to improve the company's image. Waste cost calculations induced CC2 to put all types of waste reduction on the top of its priority list. CC2 is in luxury fashion; therefore continuity of raw material supply is also a main priority for CC2.

Supply chain sustainability risk mitigation strategies: The sourcing team sets up long term contracts for supply continuity and to take advantage of average prices. Contracts are re-checked and re-negotiated in case of any discrepancies further buying in bulk, increasing work-in-progress inventory and using open market is also in practice. Currency hedging and using already available, certified and approved supply chain partners, agencies, forums, factories and materials are also used as SCSRM tools. CC2 uses bar-codes to increase visibility and manage SR by taking corrective action. CC2 has a Work Council, as a regular forum to deal with SR issues on daily basis. The researcher was also pointed to the Work Council area where a meeting was already in progress. CC2 developed an in-house maintenance department to manage machine and technology related issues. CC2 initiated major initiatives to reduce waste for cost savings and financial gains, copying the Toyota model. Conforming to legislation (EU laws and regulation) regarding chemicals, dye, working practices, environmental and social issues is strongly adhered to.

CC2 has reduced dependency and now has at least two partners, suppliers and people who can provide similar products, materials and processes. Branding, marketing, entering new and emerging markets, and multichannel retailing are considered as growth and SCSRM strategies at CC2. Agents in different markets were used mainly for the distribution purpose but now CC2 has decided to convert them into CC2's own partners or salespersons as capacity building measure. CC2 strongly believes in partnership and therefore has entered into partnerships with supply chain partners, NGOs, universities and industry groups and even collaborating with competitors in some business areas. CC2 also buys new technology to make manufacturing and other processes capital intensive, to save labour and be quick and responsive. However, the researcher observed that CC2 still owns three to four decade old machinery and the new purchases are for fast fashion lines.

Pro-active, pre-emptive, whole process, supply chain, right first time thinking and cultural initiatives are being introduced for SCSRM. A major project, a world class factory and process improvement is also being carried out to enhance efficiency. In order to overcome capacity problems and shortage of technically skilled work force, CC2 has introduced some apprenticeships and major initiatives to cross-train workforce. CC2 is also investigating alternatives and substitutes, new products and processes developments for restrictive and expensive substances, materials and processes in order to comply with laws and regulations and to save costs. Visiting and making audits and checks at suppliers is also in place; this is mostly done by the technical manager. CC2 is also working with its supply chain partners for green options where they are possible. Further, CC2 is also helping its suppliers and supply chain partners by providing guidance and information, as well as financially, to get accreditations and certifications. CC2 has also started long term planning, sharing supply chain knowledge and enhancing information sharing and relationships within the company and supply chain.

4.3.3 Main Challenges in Managing SCSR

The biggest challenge to CC2 is lack of resources, small size, and stagnant growth, lack of technically skilled workforces, dependency upon the existing but aging workforce and old dated technology. Therefore, CC2 cannot afford to recruit any SCSRM manager and relies upon its technical or sourcing manager. An unwanted move to fast fashion (mixed production) and increasing collections was also mentioned as a challenge and a major threat to the brand image as a luxury fashion manufacturer, and inability of the company to react to the fast fashion time scale. Raw material shortages and price fluctuations, lack of UK manufacturing were also mentioned as main challenges. Difficulty of prediction, especially of high impact risks such as natural disasters, political unrest in supplier markets, weather conditions, earthquakes, tsunamis and wars was mentioned as the biggest challenge. Consumer appetite for fast fashion, retailers' pressure for margins and price cuts and lack of information sharing and communication within the company and supply chain were also mentioned as main challenges. The researcher also observed broad interfaces between departments, but less integration and collaboration between workers and managers.

Lack of supply chain knowledge and a short term planning view were also mentioned as main barriers in SCSRM. Factory work perception, government backing and lack of UK manufacturing were also mentioned as major challenges for growth and for SCSRM. Legislation such as MFA and overly restrictive EU directives were seen as major challenges. A variety of costs such as labour, minimum living wages and operating costs were also mentioned as major challenges. Lack of supply chain visibility and control and complexity, especially on the supply side was seen as impeding SCSRM. From a traditional sustainability (TBL) perspective, complex, time consuming and difficult processes for sustainable initiatives or options and certification are main barriers. Further, lack of information, availability of sustainable materials and cost involved were also main challenges for the CC2 to opt for such alternatives or substitutes. Appendix Four presents suggestions from the respondents and from the data analysis about what could be the best ways to manage SCSR in the UK fashion industry.

4.4 CASE COMPANY 3 (CC3)

The original CC3 was a UK based manufacturer of fabric, clothing, artificial fibres and chemicals. CC3 was established in 1790s and became the world's leading manmade fibre production company before being broken up in the 1990s. Innovation, quality, technology development and R&D were a major focus at CC3 since its establishment. Due to the changing nature of the garment and fashion industry with the introduction of new fibres, technology and competition, CC3 started losing its market position. In the 1990s, CC3 demerged into two parts, CC3 plc the fibre manufacturers and chemicals business and CC3 Textile Ltd, the yarn and fabric manufacturer and clothing business.

In the 1990s, CC3 textile was the UK's largest producer of lingerie and underwear and 40% of its products were sold to a UK retailer. In the 1990s CC3's major UK customer started outsourcing to Far East Asian countries and in order to survive CC3 started offshoring its production sites in East Asia and entered into many joint ventures. However, cost pressure, increased competition and its inability to innovate forced it to sell CC3 to another owner in 2000. The current owner is a Malaysian businessman who also owns two factories in Turkey, one in China and one last remaining factory in the English Midlands, UK. Its products include bras, underwear, nightwear, swim and

beachwear, casual wear, formalwear, coats and jackets, baby wear and socks. CC3's previous major customer is still its major customer for its UK based factory products and the UK factory is also a customers' accredited factory.

The current UK factory still owns rights to five major brands which are associated with the original CC3. CC3 markets its products under leading global retailers' labels, through supermarkets and international fashion brands. Innovation, quality and service are its major focus as a manufacturer and wholesaler. CC3 has around 500 direct workforce in the UK, out of which around 400 are directly linked to manufacturing activities. In its management, CC3 has old but experienced members, some of whom have been with CC3 for more than two decades.

4.4.1 Defining Risk, Sustainability and Sustainability Risk

CC3 respondents defined risk from the perspective of not being able to operate efficiently, process continuation without any impact, bad customer service, something has gone wrong, interruptions, variance in plan and losing something. For example, the design manager defined risk as "*risk means potentially something that could end up losing us business*".

CC3 respondents' defined sustainability from the perspective of viable and survivable business, something that can be sustained for the long term, continuity and minimising cost. For example, the sourcing manager defined sustainability saying "*sustainability to me is the ability to continue to carry out the job that the company is doing, so it's looking where you are in the future, can you continue to do it?*"

Respondents further maintained that risk and sustainability are one and the same thing due to increased interruptions, catastrophic and unpredictable incidents jeopardising business and supply chain continuity. For example, the project manager maintained that "*if you haven't got a supply chain that's sustainable then you have got no business, so, definitely sustainability is a big risk issue for fashion supply chains*". The key risks and sustainability issues (Appendix Three) also demonstrates that CC3 respondents perceive sustainability and risk one and the same thing and according to the design manager: "*We don't have specific sustainability issues, they're similar to our risks, and I think you cannot ignore the risks to longevity*".

4.4.2 Supply Chain Sustainability Risk Management Process

CC3 has no formal plan, team, department or strategy for SCSRM. However, at complete discontinuation or at disaster level there is a formal disaster management plan which explains who will do what and explains points of contact. Overall, SCSRMP is largely embedded in job specifications and management roles.

Supply chain sustainability risk identification: CC3 mainly relies upon the sourcing manager, stock management and development team planning. These teams use a product and process critical path management approach to identify SCSR. Once a product is flagged as feasible and viable based upon final price, cost, margin and raw material availability, the above management teams start collecting information to design a critical path. CC3 also identifies SCSR in collaboration with suppliers and other factories in China and Turkey, where telephone and conference calls are used for communication. The development team also helps in SCSR identification by using vendors' briefings, meetings and communication. Retailers also provide inputs in this process. Finally, the production team and HR manager also discuss issues from a capacity, raw material and workforce availability perspective.

CC3 also uses its history, management experience and supply chain knowledge to identify SCSR. The design stage is the basic stage where CC3 identifies its SCSR; by involving suppliers for planning purposes. A factory set-up scenario is also used where financial viability, reliability, quality, capacity, financial impact on business, brand image, capability and working practices are audited to identify SCSR. The ethical compliance manager and sourcing manager also visit different countries for the same purpose. Product and process, especially manufacturing process reviews, are also conducted to identify SCSR. Suppliers' KPIs, viability and performance over time are also evaluated to identify SCSR. Suppliers' overall future strategy, especially pricing, innovation and proactive approaches are also looked at carefully to identify SCSR. CC3 also does market analysis to make judgments and conducts scenario planning. In order to manage risks of innovative products, processes, technology and materials, testing and legislation are also looked at for SCSR identification. Final product price, margins and impact on customer are also looked at to identify SCSR. CC3 also subscribes to a

number of CSR bodies, working groups and information sharing agencies for SCSR identification.

Supply chain sustainability risk prioritisation: CC3 evaluates and prioritises SCSR on the basis of final product price, financial gains, cost, margins, lead times, availability of workforce, manufacturing capacity and continuity of supply. SCSR are also prioritised based upon the availability of a number of options, alternatives and substitutes. Factory set-up scenario and suppliers' approaches to pro-activeness, innovation, viability, reliability, quality, loyalty and development process capabilities are also looked at to prioritise suppliers and supply chain partners. Critical path management and design are looked at to prioritise different issues. Financial impact on business and brand image are also used as a basis to prioritise SCSR. Retailers' pressure and high impact and long terms risks also determine priority level.

Supply chain sustainability risk mitigation Strategies: CC3 uses a recovery action plan which is part of its disaster management plan. Technical (sourcing) and development teams also review processes for learning and to replicate knowledge for the next product lines as a technique to manage sustainability risk. CC3 is trying to increase control, reduce complexity and increase flexibility by doing more at its factory in the UK. For continuity of supply and business, buying in bulk is also preferred. CC3 focuses heavily on branding and marketing to build up its brand and reputation. In case of disruptions and to manage capacity related SCSR, CC3 communicates, shares information and interchanges products and manufacturing processes among its factories in all three countries as well as with its competitors. Communication, collaboration and information sharing with suppliers and supply chain partners are also used as a SCSRM mechanism. The researcher also saw some documents which show information sharing and communication and data management with supply chain partners. Quality checks, changing culture and being pro-active are also major initiatives for SCSRM. Having numerous options, plans, alternatives and substitutes are also used for SCSRM. CC3 has three options/suppliers in major risk areas, and one in low risk areas. Innovation is at the heart of CC3's business strategy and most recently it has offered some interesting ideas, products and processes to retailers, which in essence are a business growth and SCSRM strategy.

Scenario planning, managing customer expectations and retailers/customer requirements and overall impact on business also used as SCSR mitigation strategies. CC3 is developing new products for new markets, deploying trained and experienced people at key jobs, continuously investing in training and introducing apprenticeships. The researcher also saw some trainee and apprentices on the factory floor. As CC3 operates in a high volume and low margin business, enhancing efficiency and cost management are a major focus at CC3 for SCSRM. Constant reviews, supplier and supply chain knowledge and maintaining highest customer service level are also mentioned as SCSRM strategies. Information sharing, communication, partnerships, capacity sharing within the supply chain and with competitors was also mentioned as SCSRM strategies. The researcher also observed and was told by respondents that recently, different functions have been brought and located close to each other to ease collaboration information sharing and integration as SCSRM strategy.

4.4.3 Main Challenges in Managing SCSR

At CC3, collaboration and integration within the company and supply chain is very limited. The researcher also observed that although different functions are brought close to each other to ease interaction and communication, still there is a lack of communication and information sharing; even sitting next to each other, employees look like strangers, for example, not communicating and sharing information with each other. Respondents believe that the management, especially the managing director, needs to change and adjust his working hours according to the supply chain partners. Although respondents believe that CC3 is focusing on flexibility, adaptability and innovation, culture is still believed to be stagnant, there is difficulty in change management and still there is huge resistance to change in the company. The financial position of the company, its small size and retailers' attitude, outdated technology and lack of raw material availability were also mentioned as major challenges in managing SCSR. Availability of information, lack of sustainable alternatives and substitutes, knowledge, difficulty in ensuring outcomes and high cost of sustainable things are also main barriers in managing SCSR. CC3 has gone through many disasters but the challenge commonly mentioned by respondents was the unpredictability of such

catastrophic disasters. A long, complex and invisible supply chain, with little control on certain operations, was also mentioned as main challenges.

Lack of a dedicated person, team or department who can specifically look at these issues was also mentioned as a major barrier. Short term performance measurement of each department and individuals was also mentioned as a major challenge. Suppliers' financial position and uncertainty in the suppliers' market also add difficulty in managing SCSR. Perceptions about manufacturing industry, lack of technically skilled workforce, lack of government backing and UK manufacturing, capacity constraints, retailers' pressure for margins, mixed production and fast changing regulations were also mentioned as major barriers to company growth and managing SR. Unpredictable demand and consumers' appetite for constant newness and CC3's inability to provide it were also mentioned as major challenges. Appendix Four presents suggestions from the respondents about what could be the best ways to manage SCSR in the UK fashion industry.

4.5 CASE COMPANY 4 (CC4)

CC4 is a Scottish manufacturer of Cashmere and woollen accessories. CC4 is a family business, owned and run by two families since its establishment in the 1790s. In the 1840s CC4 was involved in the origination of a range of designs, known as the Estate Tweeds. Originally the estate tweeds were woven in heavyweight cloths designed to withstand life on the hills and the Scottish weather. At the start of the 20th century, these designs were interpreted in lighter weight fabrics for more general use.

At the end of the 1960s CC4 invested in knitwear manufacturing, originally at its core location but then transferred to another place at the heart of the Scottish borders in the late 1970s. This division performed reasonably well and continued to flourish. The company expanded well in the last part of the twentieth century and now has one of the most sophisticated weaving and knitting plants in the world. The company's philosophy is to be at the top end of the quality market and this policy extends from purchasing the finest raw materials, through design to manufacture. The company is the UK's last remaining vertical woollen mill and the only one still to carry out all processes from raw material to finished garments.

The company sources raw material fibre from China, Mongolia, Australia and various other countries. Almost all production takes place in company-owned and operated manufacturing sites in the UK. It sells to luxury brands but also markets its own branded products, which are distributed through its own UK factory outlets, online and through sales agents around the globe. The combined workforce at both sites is around 700.

4.5.1 Defining Risk, Sustainability and Sustainability Risk

CC4 respondents defined risk in terms of potential threat to the ongoing sustainability of business, potential to get something wrong, characteristics of a new market, negative impacts or outcomes of a process, consequence, decision making aspects, lack of resources, disruptions, financial loss and negative impact on brand reputation. For example, the technical manager defined it as "*unseen threats in every single aspect to carry on a business activity*".

CC4 respondents' definition of sustainability is business continuity, constant supply of material and skills, carryon processes, keep the company going for many years to come, environmental aspects, to be able to maintain customer base, long terms view and cost management. For example, the supply chain manager defined sustainability as *"ongoing ability of a business to provide continuity of the business enterprise from now and for the future"*.

Like the previous companies, CC4 respondents maintained that sustainability and risk are one and the same thing, mainly due to the declined and shrunken manufacturing sector. However, respondents further elaborated their responses in favour of this argument while explaining key risks and sustainability issues in CC4's business and supply chain (appendix three). As the logistics manager put it, *"sustainability is a huge risk for the fashion companies in the UK because there are very few manufacturing textile companies in the UK now, and a very few skills, so that's always a risk"*. In terms of the same key risks and sustainability issues, the supply chain manager explained: *"My belief is that, if anything is there in more than risk that is adjacent to sustainability issues. I think there is not much difference between a risk and a sustainability issue, so, if we are addressing a sustainability issue we are actually*

reducing the risk involved in that particular area or if that risk is being addressed we are addressing a sustainability issue vice versa".

4.5.2 Supply Chain Sustainability Risk Management Process

CC4 has no specific strategy, manual, team or department for SCSRM; it is largely done in an entrepreneurial fashion by embedding it in the business strategy or by discussing it in board meetings. CC4 recently hired a supply chain expert from a university who highlighted SCSR but only in logistics and supply chain operations. CC4 hired another researcher from a UK university as a sustainability champion. Mainly this concern was raised by the finance department, who noticed heavy energy bills and costs, but also partly due to pressure from a major customer.

Supply chain sustainability risk identification: SCSR are identified by the finance director and energy costs and bills are main indicators. CC4 has been in business for more than 200 years and most of the directors and senior managers have vast luxury manufacturing experience which they use for SCSR identification. Company history and being a vertical manufacturing business is also helpful in SCSR identification. Internal manufacturing reviews, sales teams, delivery performance, cost, budgeting and available capacity are also used as SCSR identification criteria. CC4 also uses external agencies to identify SCSR by information sharing, seeking legal advice and for external credit checks. A newly hired supply chain expert has carried out some brainstorming sessions, scenario planning, ranking different issues in logistics and supply chain function based upon their likelihood and impact. Design, aesthetics of the finished product and final product price are also looked at to identify SCSR. CC4 also identifies its SCSR based upon commercial basis and the immediate short term commercial future of the company. Sales teams also play an important role by travelling to different countries and guiding CC4 about the current market situation. Conducting end review sessions learning from them and then communicating with the concerned departments and directors are also used for SCSR identification.

Supply chain sustainability risk prioritisation: At CC4, continuity of business, growth, current market conditions, cost savings and financial gains are the most important considerations. Retailers' pressure or customer requirements and relationships with

certain customers also determine priority. Things which impact CC4's ability to deliver on time, quality, lead time, brand image, final product price and order volume also get priority. Due to EU regulation on the use of certain chemicals and material use, CC4 has also started prioritising things from a legal perspective. The newly hired supply chain expert designed a matrix to determine likelihood of occurrence, significant impacts and CC4's level of control, to prioritise them. Experience, capacity, availability of skilled workforce, technology/machinery and raw materials are also taken into consideration to prioritise SCSR. The sustainability champion prioritises issues from CC4's cultural perspective and to radically change into a sustainable culture is one of the top priorities at CC4. The researcher has also seen some documents, wall charts and communication initiatives which the company was carrying on as a sustainable cultural campaign.

Supply chain sustainability risk mitigation Strategies: CC4 seeks government help in case of catastrophic events, and also has a crisis management committee, which is mainly responsible for planning but yet has no formal plan or strategy. Currency hedging is the most widely used tool for SCSRM. Cultural initiatives to save energy are also in practice and cultural improvements and internal communication were initiated recently as major tools to manage sustainability risk. The finance department is further co-operating in the areas of waste reduction, recycling and reclaiming for sustainability (cost reduction and financial gains). Data is recorded and information is disseminated to all departments regarding savings and improvements. The researcher also saw such documents in different departments, passed by the sustainability champion to different departments on their contribution to cost saving. To manage capacity and flexibility related SCSR, CC4 uses outside contractors, agents and open market.

Partnerships, close relationships and information sharing with certain customers and suppliers, even with competitors, are also used as a SCSRM tools. CC4 has also started developing capacity in-house by skills development, introducing apprenticeships, better quality recruitment and producing some of the raw materials. The researcher also saw some trainees on the factory floor. To reduce dependency and manage SCSR, CC4 has at least three different companies which can supply similar products or services. CC4 is exploring new markets but also planning to start branding and marketing its own brand on a massive scale. CC4 has also developed its own vendor manual to inform suppliers of its SCSRM requirements and guidelines. The researcher also saw those documents

but was not able to copy them or take a picture. The technical and sourcing teams also visit different countries to audit factories.

Managing customers by not offering them too much and trying to maintain core products, colours and yarn and just updating them in response to customer orders is cited as a major SCSRM strategy. Partnerships, information sharing and collaboration within the company, supply chain and with some customers also initiated recently as SCSRM strategy. For information sharing, communication and knowledge sharing different measures have taken such as communication campaign, meetings, bringing different departments closes and site next to each other. Some senior managers at CC4 also use checklists, risk registers, finding options and back-up plans, learning from events and other departments and personnel, confirmation and counter verifications as SCSRM strategies. Story telling is a unique strategy to manage SCSR, where a story is developed for any new product and then care taken to ensure consistency in the story. This story is mainly about cost, material, time span and number of processes involved to manufacture that particular product. There is a major focus on OTIF for performance measurement which is identified as the major element in customer satisfaction, attraction, retention and for the growth. Technology up-gradation is also in process but the researcher observed that most of the new buying is for fast fashion lines.

4.5.3 Main Challenges in Managing SCSR

Stagnant culture, aging workforces and two to three decades old working practices were mentioned as major challenges at CC4. Trade agreements such as the Multi-Fibre-Agreement and the introduction of fast fashion which opened the UK market to cheap garments and heavily impacted the luxury manufacturing sector were also points of concern at CC4. The global economic recession, declining household disposable income, lack UK manufacturing and perceptions about textile manufacturing, price points at market level and the weak pound were also mentioned as barriers in managing SCSR. The size of the company, stagnant growth, and consumer preferences for fast fashion, out dated technology and raw material shortages and price fluctuations were also mentioned as major challenges to managing SCSR.

Complicated manufacturing processes, a complex supply chain, cost, lack of visibility and control, lack of information sharing and communication, retailers' pressure for margins and mixed manufacturing, cooperation and collaboration with supply chain partners were also mentioned as main barriers to managing SCSR. Although radical changes in company culture were in progress, the researcher observed that still there was a lack of communication, information sharing, collaboration and integration within the company. It was apparent that different departments were working on isolated silos. Lack of awareness about risks within the company and supply chain and then difficulty in prediction and estimation were also cited as major challenge. New requirements, new customers, new chemicals and markets and not having knowledge and technology to fulfil them are also major barriers to managing SCSR. In its more than 200 year old history, CC4 has undergone many disasters, floods, adverse weather conditions and many other catastrophic events, which stopped CC4 operating, sometimes for months. However, contrary to what most of the respondents mentioned about learning from history and experience, CC4 still does not have any formal plan for SCSRM and mentioned this as a major challenge. Appendix Four presents suggestions from the respondents about what could be the best ways to manage SCSR in the UK fashion industry.

4.6 CASE COMPANY 5 (CC5)

Founded in 2003, CC5 is a wholesale business which specialises in a wide variety of high-quality jewellery, hair accessories, scarves, fast fashion garments, evening bags, gloves, handbags, hats, hosiery, ties, umbrellas and belts. The supply chain manager, who is also the owner of the company, had previously worked for another business for five years. During his work at the previous company, he decided with his agent colleagues in the Far East to start their own wholesale business and then in 2003 formally started CC5 as fashion accessories wholesale business. The agents in the Far East are family members and work with CC5 as a family business. Overall, CC5 has six agents in different countries in the Far East Asia.

CC5 sources all of its products from Far East Asia, enabling it to offer the best prices. However, recently CC5 also started sourcing from within the UK, but only for test

purposes or if something is on peak. CC5 is an online business but also has a warehouse in London, which CC6 also uses as its showroom. CC5's vision is to provide traders with the best value and an excellent customer experience.

The major focus of CC5 is to target sole proprietorship businesses in the UK and it currently supplies more than 100 sole proprietorships and small entrepreneurs. However, CC5 also contacts big retailers and businesses and offers them different products and services. Agents also help CC5 to introduce itself to different retailers or by suggesting different products and designs to CC5 to show to some retailers for orders. CC5 also uses third party service providers, carriers, couriers and agencies for various operations. CC5 currently employs 15 permanent employees, while agents in Far East Asia were also mentioned as business partners.

4.6.1 Defining Risk, Sustainability And Sustainability Risk

CC5 respondents defined risk in terms of financial loss, costs, fashion trends, failure and lack of resources. For example, the finance manager defined risk as *"losing money and not knowing the cost of something"*.

CC5 respondents defined sustainability in terms of sustaining business growth, customer retention, supply continuity and reliability and managing cash flow. For example, the design manager defined sustainability as *"finding trends continuously so that you always bring customers back to you"*.

Respondents maintained that sustainability and risk is one and the same thing but only for the retailer; CC5 is not directly dealing with consumers, therefore sustainability and risk only concern financial issues at CC5. For example, the supply chain manager maintained that *"sustainability is a risk for retailer but I am in the middle I can use that cushion to negate it because I don't deal with final consumer, I have only financial risk"*. Appendix Three further demonstrates CC5 respondents' subjective understanding of sustainability and risk as one and the same thing. For example, the sourcing manager mentioned that: *"Our business sustainability is really at risk, it really is, I mean, we aren't growing as fast as our competitors but I think it's because of our slow suppliers"*.

4.6.2 Supply Chain Sustainability Risk Management Process

SCSRMP at CC5 is very informal and mainly this responsibility lies with the supply chain manager in coordination with sourcing manager. The finance manager and design manager also have inputs into SCSRMP. As a wholesaler, CC5 has a major focus on risk issues as compared to sustainability and whatever sustainability initiatives have been taken are due to big orders or on retailers' demand.

Supply chain sustainability risk identification: The finance manager prepares a weekly sales analysis report for the supply chain manager, who then looks what went well and what did not, to identify SCSR. The design manager also prepares a biweekly report on her design analysis to suggest continuation or discontinuation of certain lines and also potential new designs. The supply chain manager also communicates and has very good relationships with agents in the Far East who help CC5 to identify its SCSR. The only focus of the supply chain manager is financial gains, reducing costs, business reputation and business growth and therefore these are the main drivers for the identification of SCSR. However, if a retailer comes up with a big order but also asks for "*certain boxes to be ticked*" in relation to ethical requirements and working practices, then the sourcing manager or supply chain manager travels to the Far East to conduct audit and check those factories but in most instances this is done by his agents. CC5 in collaboration with its agents also looks at the quality of products and the stability, capacity and reliability of its suppliers and manufacturers. For fast fashion lines, CC5 also sees the final product price when it arrives in its warehouse in the UK, to evaluate its margins. The supply chain manager also relies on experience and is in constant conversation with the company's direct customers to identify SCSR.

Supply chain sustainability risk prioritisations Criteria: Cost, financial gains, business reputation and business growth are the main priorities for CC5 for SCSR. CC5 also prioritises its suppliers based upon their capacity, stability and reliability and for fashion lines, how quick and reactive they are. Sales analysis reports, the design manager's reports and agents' inputs also help to prioritise certain issues over others. Stock control, reducing discounts, maintaining margins and getting big orders are also priorities at CC5. Big volumes are always prioritised over small volumes; however, for

the continuity of the business, relationships are always preferred with its small volume direct customers.

Supply chain sustainability risk mitigation Strategies: The major SCSR mitigation strategy is to keep minimum fast fashion lines, for example, 30% to 40% fast fashion and the remaining basic lines, however constantly freshening up basic lines with colours, outfit and minor changes in design. Capacity sharing, communication and very close relationships with agents in the Far East, with customers and in some areas with competitors were also described as a SCSR mitigation strategy. The supply chain and sourcing manager also visit small retailers to get their feedback on different product lines, to plan for the future. The sourcing manager also consults with some agencies and a variety of other platforms to find information on laws and regulations on codes of conduct, working practices and ethical requirements, so that if big retailers ask for such information, it should be readily available. Afterwards, the sourcing manager also passes such information to the supply chain manager, who in consultancy with company's agents does homework in order to satisfy big retailers. The researcher also saw some global code of conduct in garment industry, downloaded from online sources by sourcing manager. However, CC5 does not do this for its own product lines. CC5 also searches for already accredited and approved companies so that big orders can be satisfied with such information. Furthermore, if an order is big and the retailer is still insistent on a visit to re-check or re-audit factories or suppliers, the sourcing or supply chain manager also goes to those suppliers or factories.

The design manager also travels to different parts of the world as part of her job, to attend fashion events, fashion weeks and cat walks. She also consults with trend forecasting agencies, advertisement and sales channels and uses the internet to identify popular designs as means to manage SCSR. The researcher also saw her doing online search for the latest trends and watching celebrity shows.

In order to manage complexity, long lead times and product quality and testing failure issues, CC5 recently started sourcing products from the UK. Successful experience of sourcing from the UK has induced CC5 to increase its local sourcing proportion and now,

particularly for fast fashion lines, most of its sampling, testing and some of the production are taking place in the UK.

CC5 is also planning to expand its operations to cover the remaining European countries. Therefore, negotiates with carriers and freight forwarders, to help expand its operations in Europe. CC5 is increasing its options in terms of suppliers, manufacturers and quality inspection and testing agencies to reduce dependency, increase capacity and reduce supply chain costs and enhance efficiency.

4.6.3 Main Challenges in Managing SCSR

Fast changing fashion trends and lack of resources, skills and finance to predict them and then make them available quickly are the main problems at CC5. Further, lack of resources and weak financial position do not allow CC5 to have a formal SCSRMP or access to those platforms that can help CC5 to predict SCSR. Retailers' attitudes to reducing costs, demand for margins and discounts and cancellation of orders were also mentioned as big challenges for growth and further investment in the company. Suppliers going out of business or supplying poor quality and damaged products were also mentioned as a major challenge and a main reputational risk for CC5. Very high staff turnover and difficulties in attracting professional and skilled workforce were also mentioned as a major problem at CC5. Being an online business and relying upon third parties for most of its operations was also mentioned as major challenge to controlling and managing SCSR.

Newness, changing requirements for products, services, materials, fibres and speed required by its customers and inability of its suppliers and supply chain partners to fulfil those were also mentioned as major challenge. CC5 also mentioned consumer behaviour and attitude, asking for sustainability considerations and not taking care of in their purchase behaviour, a main challenge as well. Suppliers' inability to meet CC5's requirements is due to lack of resources, technology and their outdated ways of working which they are, unwilling to change. Lack of information sharing, collaboration and lack of supply chain knowledge, complexity, visibility and control were also mentioned as major issues at CC5. Appendix four presents suggestions from the respondents on the best ways to mitigate supply chain sustainability risk in the UK fashion industry.

4.7 CHAPTER CONCLUSION: MAIN THEMES

The following are the major themes that emerged from the data analysis in this chapter on case-by-case analysis.

- ❖ Respondents defined risk subjectively from different perspectives depending upon their functions, processes, organisational context and values.

- ❖ Respondents defined sustainability as a characteristic of a sustainable business such as business continuity and longevity, viability and sustained operations. However, respondents believe that sustainability and risk is the one and the same thing.

- ❖ In all the companies, there is consensus on economic sustainability but no consensus on social and eco-sustainability. As economic sustainability is key for the case companies, operational performance measures such as OTIF, reducing lead times, shortening production times, reducing cost, buying new technology, relationship management, capacity building, ensuring the highest level of customer services, supply chain cooperation, collaboration and information sharing have priority.

- ❖ On the one hand, all the five companies have similar strategies for risk and sustainability management. On the other, there is no specific SCSRM strategy which is dealt with by a team or department and it is largely embedded in job duties, responsibilities and corporate strategies. Most of the decisions and strategies regarding SCSRM are made at directors' level.

- ❖ It was found that the case companies use a mix of strategies for SCSRM which were mentioned and discussed in the literature review chapter. Further, the case companies believe that having a dedicated team, department or champion can be helpful in managing sustainability risk.

- ❖ Management structure is classic and department oriented. Overall though, there is a low level of integration, communication, cooperation and collaboration both within the companies and supply chain partners. However, all the case companies were found to be taking substantial initiatives to increase communication, information, integration, relationship building within the company, supply chain and even in certain business areas with competitors.

❖ Retailers' pressures for mixed production, margins, price cuts and lack of collaboration were also mentioned as major challenges in the case companies.

❖ Supply chain complexity, lack of visibility and control, lack of knowledge and lack of UK manufacturing were also mentioned as major challenges to the business and brand reputation and supply chain continuity.

❖ All companies have outdated technology, lack of technically skilled workforce, low focus on R&D and stagnant culture. Therefore, they have high labour costs, are unable to manage innovation, resistant to change, slow and overall inefficient and ineffective.

❖ The researcher found a big move to innovation from the perspective of product, process, technology, materials and ways of work, capacity building, cooperation and collaboration even with competitors.

❖ All the case companies have substantial cultural problems due to aging work force and no newness coming into garment manufacturing business.

❖ The case companies blamed consumers for not taking care of environmental and social issues in the fashion supply chains and for their greater appetite for fast fashion.

❖ The case companies were found to be concerned about raw material from the perspective of its basic nature which is rare and expansive commodity, shortage and high price fluctuations.

The literature review chapter (Chapter Two) highlighted some risks and sustainability issues in fashion supply chains. Chapter Two and Chapter Three (section 3.6) also highlighted some challenges to the UK fashion industry and the pilot study further explored some insights regarding supply chain sustainability risk in the context of the UK fashion industry. It was noted that extant literature described only a limited set of challenges and sustainability risk to the UK fashion industry. However, the pilot study provided a broader but not a holistic, picture of the UK fashion industry. In contrast, case-by-case analysis provided a holistic picture of the UK fashion industry and SCSR to the UK fashion industry (as summarised above). However, case-by-case analysis expanded substantially with various new types of SCSR. Furthermore, the literature and pilot study did not indicate some drivers which stimulated different companies in the UK fashion industry to manage their supply SCSR, such as capacity development and

capacity sharing, building relationships and partnerships, information sharing and communication, increasing SC visibility and safeguarding brand reputation. These explorations will further feed into cross-case analysis in the next chapter.

CHAPTER FIVE: CROSS-CASE ANALYSIS

5.1 INTRODUCTION

The within-case analysis (Chapter Four) feeds into this chapter to compare similarities and differences between the case companies by identifying patterns in the data. Although this chapter will follow the multiple-case study analysis framework suggested by Creswell (2007), some alterations were made in terms of structure, due to the nature of the study. Therefore, this chapter is divided into two parts. The first part describes the case settings, and the management structure within the case companies responsible for SCSRM. This is followed by a discussion on the sustainability risk management process at the case companies. The first part will end by highlighting different barriers/challenges in managing SCSR at case companies.

Chapter 4 and the first part of the cross-case analysis chapter will further feed into the second part of the cross-case analysis chapter, to highlight the major findings of this research. Further, the second part will also discuss in detail each major finding and its sub-themes.

5.2 CASE SETTINGS

Following Creswell's (2007) framework, a table (Table 15) is developed in this section to highlight the different settings of the case companies. The researcher shows the approximate age of the case companies to ensure confidentiality. Table 15 also highlights the nature of the business, nature of the product and sourcing countries which shows the length and complexity of the chain which introduces a high level of sustainability risk. The last feature is the size of the companies, because respondents argued that one of the major barriers in managing sustainability risk is the small size of their company and resource constraints which prevent companies from having dedicated teams or departments to look holistically at sustainability risk.

Table 15: Case Settings

Case companies	Differentiating Features				
	Established	Nature of Business	Nature of Products	Sourcing Countries	Size
CC1	1960s	Manufacturer and retailer	Footwear: Premium quality fashion Garments: fast fashion	Thailand, China, UK, other Asian North America and European countries.	Medium
CC2	1780s	Manufacturer Wholesaler Retailer	Premium quality fashion garments	New Zeeland, Egypt, UK, Peru, Turkey, China, other Asian, North America and European countries.	Medium
CC3	1790s	Manufacturer Wholesaler	Quality fast fashion garments	China, Turkey, UK, other Asian and European countries.	Medium
CC4	1790s	Manufacturer Wholesaler Retailer	Premium quality fashion garments	Pakistan, Iran, Mongolia, New Zealand, UK, Mongolia, China, Turkey and European countries.	Medium
CC5	2000s	Wholesaler Online retailer	Fashion and fast fashion garments	China, Korea, Turkey, other Asian and European countries.	Small

The above Table 15 shows that most of the case companies are long established businesses. This means that they have long a history of managing sustainability risk. However, the subsequent parts of this chapter will demonstrate that the case companies have not effectively learned SCSRM from their history. The table also shows that most of the case companies are vertically integrated and should have more control and visibility and less complexity in their operations in the supply chain, but data showed that being vertically integrated did not help companies to have greater visibility and control and less complexity, which will be discussed in the second part of this chapter. Moreover, Table 15 shows that the case companies operate in a mix of product categories, premium quality fashion and fast fashion. This will be a topic of discussion in the second part of this chapter under growth of fast fashion and a move towards mixed manufacturer or supplier.

In terms of sourcing countries, the case companies have some common sourcing markets, namely, China, the rest of Asia, Turkey and the UK. This, on the one hand shows the length and complexity of the supply chain, and on the other, developments in the suppliers' markets to fulfil the needs of the European retailers. This also shows the existence of textile clusters, sub-contractors and full package service providers in those supplier markets. The second part will demonstrate how this creates greater sustainability risk to the UK fashion industry. Further, most of the case companies are SMEs and most of the respondents mentioned that due to their company size and lack of resources they are unable to manage their supply chain sustainability risk effectively; this issue is further discussed in the subsequent sections.

5.3 SUPPLY CHAIN SUSTAINABILITY RISK MANAGEMENT PROCESSES

This section first highlights the management structure responsible for supply chain sustainability risk management within the case companies so that the key people and their roles can be identified. This is followed by SCSRM strategies. This comparison will help in identification and understanding of the most important case company strategies to manage SCSR. The next part will highlight the most important barriers in managing sustainability risk at the case companies which impacts the operational performance of these companies.

5.3.1 Management Structure for SCSRM

The following Table 16 highlights the general management structure at the case companies to manage their supply chain sustainability risk:

Table 16: Management Structure for SCSRM in the case companies

Case-Companies	Management Structure
CC1	Four managers were found to be specifically involved in risk management issues. Those are: logistics, design, purchasing, and quality control managers. Two managers, the supply chain and sourcing, looked at both, risk and sustainability issues. However, overall the management structure is comprised of sourcing, supply chain, generalists and some supply chain partners in South East Asia.
CC2	Most of the respondent managers at CC2 were involved in both risk and sustainability management. For example, production, sourcing, supply chain, human resource and site managers look at risk and sustainability issues. However, the purchasing and design managers were more involved in risk management. Mainly, sustainability risk management responsibilities lie with the sourcing, production and HR managers.
CC3	The supply chain, ethical compliance, project, supply chain and sourcing managers looked issues from risk and sustainability perspectives. On the other hand, the design and purchasing managers were responsible to look at risk issues. Overall, the product development, stock management and sourcing team are responsible to look at sustainability and risk issues.
CC4	For sustainability management, CC4 has a sustainability champion who specifically looks at sustainability issues in collaboration with the finance director. The supply chain, project, technical and sourcing managers were found to be involved in both sustainability and risk management responsibilities, whereas, the commercial director, warehouse, purchasing and design managers were found more concerned with risk management responsibilities. Overall, the project, sourcing, supply chain, technical managers and finance director were the sustainability risk management people at CC4.
CC5	The supply chain and sourcing managers were involved in both, risk and sustainability management. However, the finance and design managers were involved only in risk management responsibilities. Overall, the supply chain and sourcing managers along with partner agents in the Far East discuss issues relevant to risk and sustainability.

The above table shows that none of the case companies has any specific person who is directly responsible for supply chain sustainability risk management. Hence, the researcher did not find a single respondent titled as risk management or sustainability management or supply chain sustainability risk management manager in any case-company. However, some companies were more concerned than others; for example, CC1 hired a lawyer in the US to guide the company from legislation perspective. CC4 hired a PhD researcher as a sustainability champion who is pushing a communication and cultural campaign at CC4. Further, the supply chain manager at CC4 also carried out some sustainability risk management exercises on his own and only in supply chain and logistics functions.

Mainly, supply chain, sourcing and ethical compliance managers were found to be involved in both risk and sustainability management responsibilities. Two conclusions can be drawn from this. First, the case companies are passing sustainability risk management pressures to the upstream supply chain partners because supply chain, sourcing and ethical compliance managers directly deal with supply chain partners; as mentioned by the SC Manager at CC3, *"Actual retailers at the moment don't really care, I think they tend to leave that (SCSRM) more to the vendors"*. Second, having responsibilities for both risk and sustainability management vested with these individuals means case companies perceive sustainability as risk in reality; for example, ethical compliance managers are also responsible to manage risks.

In terms of risk management, purchasing and design managers were found more involved in this task, where it purely means reducing costs. Design managers are responsible to reduce paper, printing, fibre and many other types of costs in that particular department while purchasing managers are supposed to buy within a budget which indirectly means cost savings. The case is similar for logistics, warehouse and other managers, who try to manage risks by managing costs.

5.3.2 SCSR Identification Strategies

Sustainability risk identification strategies at case companies were provided in chapter 4 individually, on a company by company basis. However looking at similarities and

differences and by cross-case analysis of the sustainability risk identification strategies of the case companies, the following main strategies were found:

❖ Subscription to different formal and informal bodies, agencies, companies on CSR, universities, NGOs and industry groups.
❖ Having own factory and vertically integrated business.
❖ Constant product and process reviews.
❖ Constant communication within the company and outside with the supply chain partners.
❖ Visits, third party audits and its own follow ups.
❖ At product design, materials and machine base.
❖ Registration stage.
❖ Sourcing department experience.
❖ Partnership with supply chain partners.
❖ Customer requirements and delivery promise date.
❖ Availability of capacity.
❖ Cost and final product price.
❖ Check lists.
❖ Analysis of information.
❖ Looking at existing legislation and potential changes.
❖ Multichannel retailing also helps in identifying sustainability risks
❖ Gut feelings and scenario planning.
❖ Looking at the company history.
❖ By management experience.
❖ In collaboration with retailer.

However, it is also found that each company has one or two specific strategies to identify sustainability risk which were not found in other case companies. For example CC1 has a lawyer in the US to guide CC1 from a legislation perspective. CC1 also uses the sourcing department's experience and claims that this particular department has 300 years of experience. CC2 has unique ways of product and supply chain mapping, use of bar-codes and report generation every morning. CC3 has a critical path and disaster management plan and further uses a factory set-up scenario. CC3 also identifies sustainability risk in

collaboration with retailers. CC4 has a crisis management committee and recently carried out brainstorming in supply chain and logistics functions. CC5 gets help from its partner agents in the Far East.

5.3.3 SCSR Prioritisation Strategies

Cross-case analysis for SCSR prioritisation strategies found that most of the case companies have common criteria for supply chain sustainability risk prioritisation. For example, the following are the most common criteria for supply chain sustainability risk prioritisations at the case companies:

- ❖ Continuity of business and growth.
- ❖ Retailer's pressure.
- ❖ Family business relationships with some customers.
- ❖ Immediate commercial opportunities and current market
- ❖ Available capacity, technically skilled workforce, raw materials and machinery
- ❖ Ranking of customers based upon order volume, margins and who pay in full and on time.
- ❖ Safe guarding brand reputation.
- ❖ Level of control.
- ❖ OTIF (on-time-in-full) principle.
- ❖ Financial gains, cost minimization, increasing margins, reducing lead times and continuity of supply.
- ❖ Availability of alternatives, substitutes and number of options.
- ❖ Legislation also determines priority.
- ❖ High impact and long term sustainability risks.
- ❖ Looking at the financial viability of the supply chain partners and customers.
- ❖ Waste reduction.
- ❖ Delivery date.
- ❖ Issues with high impact and consequences.

However some case companies also have prioritisation criteria exclusive to them. For example, CC1 looks at available capacity and skilled workforce not only in the UK but at its partners and licensees in the Far East Asia. Keeping the Royal Warrant is the highest

priority in CC2's sustainability risk prioritisation criteria. Similarly, CC3 has the priority of remaining its customer's accredited factory and therefore designs its priorities in accordance with the customer. The supply chain manager at CC4 designed matrixes and did brainstorming to prioritise SR. Sole proprietorship businesses are the priority for CC5. Being family businesses, CC1, CC2 and CC4 also have more focus on customer relationships. Finally, CC2 and CC4 recently started prioritising issues on the OTIF principle.

5.3.4 SCSR Mitigation Strategies

Similar to the supply chain sustainability risk identification and prioritisation, most of the SCSR mitigation strategies are common in the case companies. Following are some of the most common strategies at the case companies for SCSR mitigation:

❖ Spreading risks into different geographic locations.

❖ Reducing dependencies by increasing number of options in terms of suppliers, manufacturers and material providers.

❖ Cross training workforce and introducing new apprenticeship.

❖ Purchasing new machinery and focusing on automation to reduce costs and lead times.

❖ Contingency planning.

❖ External validation on products and processes and collaboration with some UK universities for R&D.

❖ Highest level of co-operation and communication within the company and with the supply chain partners.

❖ Use of sub-contractors to manage capacity problems.

❖ Using management experience.

❖ Changing management styles according to the business and market situation.

❖ Focus on organizational culture change to make it sustainable and agile.

❖ Establishing working relationships with competitors and other companies in the industry.

❖ Making surprise visits at factories, farms and supply chain partners' premises.

❖ Cost management by reducing all types of wastes and planning to start waste recycling at site.

❖ Setting long term contracts and forward buying for supply continuity and to get advantage of average price.

❖ Buying in bulk and increasing work-in-progress inventory to manage raw material shortage and disruptions.

❖ Currency hedging.

❖ Using already approved, certified and accredited factories, supply chain partners and materials.

❖ Focus on marketing and branding and entering new markets with multichannel retailing to manage growth related sustainability risks.

❖ Use of companies on CSR, agencies, NGOs and industry forums to get information about restricted materials and changing legislation.

❖ Investigating new, green and sustainable alternatives and substitutes.

❖ Visiting and making checks and audits.

❖ Seeking credit cover, insurance and managing debt books

❖ Management development by professional training and deploying experienced and trained people at key positions.

❖ Replicating knowledge from different review sessions to manage sustainability risks for new products and processes.

❖ Increasing control by doing more on site, for example, recycling.

❖ Constant communication, information and capacity sharing and product exchange with supply chain partners and competitors.

❖ Focusing on innovative material, product and process development.

❖ Major initiatives to increase internal communication.

❖ Use of outside contractors and producing own raw materials.

❖ Managing customers by not offering too much and trying to maintain colours and yarn.

❖ Managing core products and designing new ones which do not require new materials.

❖ Use of checklists, risk registers, confirmations and counter confirmations and back-up plans.

- ❖ Event based learning, data recording and disseminating information to different departments.
- ❖ Ensuring highest customer service level with major focus on OTIF principle.
- ❖ Local (UK) and multiple sourcing, close to home such as Turkey (for sampling and testing) and far from home such as China for selling lines and bulk orders.
- ❖ Conforming legislation, ethical requirements and global standards, fashion industry working practices and global booklets, to fill by supply chain partners and designing supplier manuals, code of conduct and pamphlets.
- ❖ Hiring experienced and skilled people for key positions.
- ❖ Reviewing processes and products to replicate knowledge and learning for future processes or product lines.
- ❖ Focusing on innovation, new product and process development.

However, differences were also found in SCSR mitigation strategies at the case companies. For example, CC1 hired a lawyer in the US to guide CC1 on restricted substances and materials. CC1 also nominates suppliers and supply chain partners for their best practices. Although most of the case companies claimed that they constantly change management styles and culture, CC1 was found at the forefront of this claim.

CC2 uses bar-codes to manage sustainability risk and has a work council as a regular forum to manage day to day sustainability risk, and an in-house maintenance department to manage machine and technology related sustainability risk. CC2 also started a 'world class factory' project, following the Toyota model to reduce all types of waste. The process of report generation is also a SCSRM strategy at CC2. It has also started converting its agents into its own sales persons in different markets around the globe.

CC3 uses a recovery action plan which sounds more like a resilience plan and part of its disaster management plan. CC3 strictly uses a factory set-up scenario in order to manage its SCSR. CC3 further interchanges products and capacity between other factories in Turkey and China.

CC4 seeks Scottish government help to manage one of its major but most frequently occurring catastrophic events, flooding. CC4 has a sustainability champion who is

pushing a campaign to increase internal communication and cultural change. None of the other case-companies were found to have this sort of champion. CC4 has also started producing some of its own raw materials. The other thing which differentiates CC4 from other case companies is its process of 'story telling' to ensure operational consistency and manage supply chain sustainability risk. CC5 keeps a fixed proportion of product lines, 30% fast fashion and 70% basic to manage its sustainability risk.

5.3.5 Major Challenges in Managing SCSR

It was important to explore these challenges to case companies so that recommendations can be made to them on how they can counter these challenges, facilitating implementation of SCSRM strategies within their companies and supply chain. Similar to the SCSRMP, there are overlaps in case companies' challenges to managing SCSR. For example, the following are the most common challenges in the case companies which impact their operational performance:

- ❖ Organisational culture is mentioned as a major barrier in managing sustainability risk and some of the reasons are: aging workforce and lack of young generations' interest in factory work.
- ❖ Cheap imports and trade agreements such as MFA (Multi-Fibre-Agreement).
- ❖ Decline of the UK textile and garment industry and currently lack of UK manufacturing. Further, lack of the UK government interest in textile manufacturing and not providing a conducive external environment. Due to this, most of the companies have to outsource and off-shore hence greater sustainability risk.
- ❖ Organisational resources such as lack of technically skilled workforce, week financial position of the company, outdated technology and poor infrastructure. Operating costs such as wages and energy also mentioned as barriers.
- ❖ Consumer preferences for fast fashion and low price in the UK and least concern for environmental and social issues in the supply chains of fast fashion providers.
- ❖ Lack of information sharing, collaboration and knowledge on sustainability risk management, within the company and with supply chain partners.

❖ Lack of senior management cooperation, information sharing and communication is also mentioned as major barrier. The respondent managers were found often unaware of overall business strategy and future direction or what their company wants to achieve.

❖ Supply chain length and complexity, lack of visibility and control especially at the upstream level of the supply chain also mentioned as major challenge.

❖ New requirements from retailer regarding new fibres, new chemicals and markets and then not having resources, knowledge and technology also mentioned as major barriers.

❖ Not being unable to predict high impact sustainability risk and catastrophic events is also mentioned as major barrier in managing supply chain sustainability risk.

❖ Retailers' pressure for price cuts, margins and discounts also mentioned as major barrier in managing sustainability risk. Also non-cooperative behaviour from retailers, where retailer allow very little time for manufacturing, share little information on different issues and issue last minute order changes or cancellation.

However, some challenges were specific to particular companies. For example, CC1 has a very small factory in the English Midlands and mostly relies upon its partners and licensees in Far East Asia. Therefore, the availability of technically skilled workforce in those premises impacts CC1 in terms of quality, capacity, cost, lead times and disruptions. CC1's core business is shoe manufacturing, which mostly relies upon leather. Leather business involves more chemicals than garment manufacturing, so existing and changing legislation is stricter in this particular area of business, creating more challenges/barriers in managing supply chain sustainability risk.

CC2 and CC4 are premium quality and high price garment manufacturers, whereas UK consumers are becoming more fast fashion oriented and willing to pay less for their garments. Furthermore, retailers are passing such pressure to CC2 and CC4, making it challenging for them to manage such issues. CC2 and CC4 also mentioned challenges such as small size and weak financial position of the company, supply chain complexity,

visibility and control, supply shortages, lack of communication, information sharing and integration within the company and with supply chain partners.

CC3 is in fast fashion and most of the fashion manufacturers are in Asia and Turkey due to cheap labour, materials and operating costs, but CC3 faces consistent pressure for the same margins, price and discounts, which is becoming difficult for CC3 to provide due to high operating costs in the UK.

CC5 is an online retailer and wholesaler and finds it difficult to get customer feedback. This reduces opportunities for improvement to provide better customer service. However, CC5 have increased customer and consumer interaction and engagement on its web-site for greater feedback and for improvements.

Based upon the above discussion, the following major themes (Table 17) are induced from cross-case analysis of SCSRMP of the case companies. Against each element of SCSRMP, a comparison is provided against what literature suggested and how case companies are doing those activities. Based upon the comparison, certain constructs are designed which will feed into a SCSRM typology (Chapter Six).

Table 17: Major themes emerging from the cross-case analysis on the SCSRM

SCSRM factors	Similarities and Differences		Conclusion/constructs
	Views form literature (Chapter Two)	Case companies	
Management Structure	❖ Sourcing and purchasing department's task. ❖ Risk management teams. ❖ Risk and sustainability managers' responsibility. ❖ Organizational responsibility.	❖ No one was found specifically responsible for SRM. ❖ Embedded into corporate strategies and managers' jobs and responsibilities ❖ Board of directors look at issues from SRM perspective	❖ Passing multiple stakeholders' pressures for SCSRM on to upstream supply chain levels. ❖ Limited understanding about SCSRM has not yet convinced firms' investment in this area and therefore recruiting someone or having dedicated team or department is still considered as costly.
Key Risks and Sustainability Issues	❖ In any firm or supply chain there are different kinds of risks and sustainability issues and they accordingly need different strategies for their effective management. ❖ Same strategy cannot be applied to all the key risks and sustainability issues otherwise it can lead to many other types of risks and sustainability issues. ❖ They change along with changes in industry, market and product.	❖ Case companies have large numbers of sustainability risks ❖ Respondents did not differentiate between risk and sustainability issues therefore risk and sustainability are the same. ❖ Respondents included many things into sustainability risks which they understand or not. ❖ Most of the respondents are unaware of current and future sustainability risks.	❖ Sustainability and risk are one and the same thing. ❖ Risk management has become an overarching context in the case companies where respondents included everything into risk, sustainability issues or any other issues. ❖ Lack of awareness what constitutes a risk. ❖ Lack of long term perspective and major concern on the immediate commercial goals. ❖ Most of the Key risks and sustainability issues are relevant to costs, financial gains and business growth.

SCSRM factors	Similarities and Differences		Conclusion/constructs
	Views form literature (Chapter Two)	Case companies	
Sustainability Risk Identification	❖ Look at sources and drivers ❖ Look at firm's internal and external environment ❖ Use multi-methods such as scenario and contingency planning, information analysis, use history, warning systems, experience, supply chain partners etc.	❖ No formal procedure was found. ❖ Mostly done by gut feeling, experience and company's history and using factory. ❖ Recently started communication information sharing and analysis, collaboration, integration, using relationships and review sessions.	❖ Cost, impact on financial performance. ❖ Impact on brand image which has potential to bring down sales. ❖ From business growth perspective.
Sustainability Risk Prioritisation	❖ Look at low, medium and long term risks. ❖ Look at impact and consequences. ❖ Look at what can impact business continuity.	❖ No formal procedure was found. ❖ Financial gains and business growth. ❖ Reducing costs. ❖ Based upon financial impact and costly consequences. ❖ Retailers' pressure.	❖ Financial gains, reducing costs and business continuity ❖ Ranking customers based upon their order volume and financial importance. ❖ Family owned business (CC1, CC2 and CC4) also considering relationships with certain customers. ❖ Big retailer or customer (according to volume) also gets priority.

SCSRM factors	Similarities and Differences		Conclusion/constructs
	Views form the literature review (Chapter Two)	Case companies	
Sustainability Risk Mitigation	❖ Use of quantitative, qualitative and mixed approaches. ❖ Within each method (quantitative and qualitative), further use of different approaches. ❖ Adopt a holistic approach to SCSRM by integrating multiple stakeholders, cooperate, and share information and communication, increase supply chain integration. ❖ SCSR mitigation is a dynamic process, any new risk or sustainability issue will require new mitigation strategies.	❖ No formal mitigation strategy was found. ❖ Case companies were found using a mix of quantitative (cost benefit analysis, return on investment etc.) and qualitative strategies. ❖ Minimising cost and enhancing financial gains. ❖ Recently started information sharing, integration, collaboration, capacity building, resources sharing, and partnerships within the company, supply chain and in certain circumstances with competitors. ❖ New product and process development, technology up-gradation, changing company culture, increasing supply chain visibility and safeguarding brand reputation were also mentioned new strategies. ❖ Building supply chain knowledge and focusing on core product. ❖ Started hiring new experts and developing SCSRM strategies	❖ Increased risks, disruption and uncertainties realised companies to have some procedures in place for the continuity of their businesses. ❖ Yet still reducing costs, improving financial performance and short term orientation prevails. ❖ New mitigation strategies and radical transformation in companies' structures and processes are still based upon enlightened interest of improving economic bottom line. ❖ With new risks and sustainability issues, case companies have not changed mitigation strategies accordingly.

SCSRM factors	Similarities and Differences		Conclusion/constructs
	Views form the literature review (Chapter Two)	Case companies	
Challenges/Impact on operational performance.	❖ Look at barriers and constraints of SCSRM and overcome them. ❖ Look at the characteristics of industry, market and product. ❖ Organizational size, resources, geographic area, culture, structure and strategy. ❖ Look at alternatives and substitutes. ❖ Build knowledge, skilled professionals and enhance organisational learning. ❖ Have major focus on R&D and develop innovative products and processes. Utilise technological advances. ❖ Integration, collaboration, sharing information, relationship building, capacity building, and partnerships with supply chain partners and using already existing resources and platforms will help in managing challenges and minimising negative impact on the operational performance.	❖ Lack of technical skilled workforce, UK manufacturing, out dated technology, stagnant culture, weak financial position and small size. ❖ Lack of supply chain visibility and control and increasing complexity. ❖ Lack of information sharing, communication, integration and knowledge within the company and supply chain. ❖ Capacity constraints. ❖ Retailer's pressure. ❖ Consumers' preferences for fast fashion and not taking care of environmental and social issues. Further, differences between consumer attitude and behaviour.	❖ Lack of knowledge and understanding on supply chain sustainability risk management. ❖ Cost reduction and financial gains are still dominant and overriding objectives. ❖ Exiting organisational design and management processes cannot support SCSRM and need radical changes in structure and processes.

5.4 MAJOR FINDINGS

Following the conclusion and major themes that emerged from Chapter Four (within case analysis), the discussion of SCSRMP in case companies in the previous section especially major challenges to the case companies and based upon the above table 17, the following Table 18 lists the major findings and their sub-themes from the data analysis (within case and cross case analysis). In the subsequent sections the researcher will shed a detailed light on the major findings and their sub-themes.

Table 18: Major findings and their sub-themes

Major findings	Sub-themes
Organisational Resources	❖ Shortage of technically skilled workforce: UK and Overseas ❖ Nature of basic raw material: Basic commodity subject to alternative uses instead of fashion garments. ❖ Small size and weak financial position. ❖ Outdated technology.
Growth of Fast Fashion	❖ Disappearance of clusters: Due to decline of the UK textile and garment manufacturing. ❖ Increased supply chain complexity. ❖ Consumer behaviour: Preference for fast fashion and price without sustainability consideration. ❖ Increased pressure from retailer for margins, short lead times and mixed production.
Organisational Culture	❖ Resistance to change due to stagnant culture. ❖ Lack of communication and information sharing.
Management Structure	❖ Disintegration and control orientation. ❖ Lack of knowledge.
Safeguarding Brand Reputation	❖ Lack of supply chain visibility and control. ❖ Move to mixed manufacturer/supplier: Classic and fast fashion.
Stimulator of Innovation	❖ Capacity development. ❖ New product and process development. ❖ Partnerships.
Co-Opetition	❖ Capacity sharing. ❖ Information sharing and building relationships.

5.4.1 Organisational Resources

Lack of organisational resources was found to be a sustainability risk as well as a major challenge to the case companies in managing SCSR. Literature review mentioned various types of organisational resources which can restrict organisations to implement SCSRM processes. However, within-case, Appendix Three (key risks and sustainability issues) and cross-case analysis found four particular types of resources as barriers to implement SCSRMP in the case companies. Those are, shortage of technically skilled workforce, nature of basic raw material, small size and weak financial position of case companies and outdated technology. The following is the description of four sub-themes:

Technically Skilled workforce: Almost all the case companies mentioned that shortage of technically skilled workforce is one of the major problems brought by the decline of the UK fashion industry. A move to outsourcing and offshoring of manufacturing by large UK retailers, such as Marks and Spencer, led them to abandon UK manufacturers, suppliers and workers. Further, constantly increased outsourcing, cost pressures and lack of cooperation from UK retailers caused shutdown of many remaining manufacturers and suppliers. During this decline, universities and educational establishments reset their priorities and stopped providing technical training courses to the garment industry. Under such circumstances, factory work started to be perceived as non-progressive, which deterred the young generation from considering careers in the textile and garment industry and led them to focus more on the retail and service sector. Consequently, no newness came in and the remaining industry became more dependent upon its existing workforce. As a response to this, the industry started training people itself, which increased cost and prevented management from spending more time on strategic issues.

It is also found that the UK fashion industry is not immune to the problem of skills shortage in its supply chains, as most of the companies in the fashion industry are sourcing from China, where the market is going through major transformation. Due to prosperity and changing life-styles in the Chinese market, general workers in China now do not want to work in dirty and non-conditioned factories and therefore the return to work ratio is declining substantially, ultimately imposing cost pressures. Overall,

Chinese manufacturers and suppliers also face skills shortage problem similar to the UK manufacturers and suppliers causing capacity, cost and delays/disruptions for the UK fashion industry, leading to increased sustainability risk.

CC1, CC2, CC3 and CC4 respondents mentioned that one the biggest areas in terms of lack of capacity is the shortage of technically skilled workforce in the UK as well as at their partners' premises in Far East Asia: *"The biggest pressure we have at the moment in our SC from a sustainability risk perspective is the availability of labour within China"* (CC1 Sourcing Manager). Therefore, their companies are introducing apprenticeships in the UK and working in partnerships with manufacturers and suppliers in Asia to improve sustainability in this area. CC1, CC2, CC3 and CC4 respondents also mentioned lack of interest and shortage of workforce in the UK and at their suppliers' and manufacturers' premises in Asia, particularly in China: *"Factory work is not perceived be in vogue job opportunity for a youngster, workforce is getting older with no newness coming in"* (CC2 HR Manager). CC2, CC3 and CC4 respondents mentioned that lack of technically skilled workforce, high turnover and training costs and interest of young generation has made their companies dependent upon the existing workforce. Respondents further complained of the lack of availability of technical courses related to the fashion industry in the UK. CC2, CC3 and CC4 respondents mentioned that their companies face many problems in terms of order fulfilment, dependencies, lead times and customer service just because of the shortage of technically skilled workforce in the UK fashion industry.

CC1, CC2 and CC4 respondents were also concerned about the Chinese market transformation, where improved living standards caused lack of interest of the young generation in fashion garment manufacturing and increased sourcing costs for their companies: *"Nobody thought, about twenty to thirty years ago, that you could not get what you want from China, now China has exactly same problems we had, around labour shortage, skills problems, high turnovers"* (CC1 Sourcing Manager).

CC5 respondents maintained that their company was not much influenced by shortage of technically skilled workforce. However, supply chain partners' good capacity in terms of technically skilled workforce can help them to provide a better customer service, and

to reduce lead times and costs. Respondents also mentioned that the UK suppliers and manufacturers do not have resources and workforce capacity to provide what is required in a suitable time scale and within costs: *"You will hear from other companies, if you're going to talk to them, skills shortage is an industry problem impacting our ability to provide customer service on time and more efficiently"* (CC5 Supply Chain Manager).

Nature of basic raw materials*:* Most of the remaining companies in the UK fashion industry are operating in premium quality garments. Their raw materials are luxury, expensive commodities such as cashmere, merino wool and long staple premium quality cotton. Now there is increasing evidence suggesting that farmers in supplier markets are earning more money by selling meat rather than fibre, which is causing a raw material shortage and increasing costs. Catastrophic events such as floods, tsunamis, quotas and escalating political tensions in supplier markets further created supply shortage. Chinese suppliers and manufacturers who actually manufacture fast fashion lines started buying these luxury commodities just to fill their factories ultimately causing shortage in the supply chain and increasing sustainability risk.

Fast fashion retailers, wholesalers, manufacturers and suppliers (CC1, CC3 and CC5) are also not immune to the problems of raw material. Most of the fibres used in the fast fashion lines are manmade, such as nylon and polymer, which are made of oil and plastic. Shortage and surplus of oil in the international market cause huge fluctuations in oil price and ultimately in raw material price and increasing sourcing costs. In the case of plastic, premium quality plastics is a big target for the car and airline industry and only the crude or lowest quality is available for the fashion garment industry, which increases processing and sourcing costs.

CC1 and CC4 respondents mentioned problems related to leather (CC1) and cotton. The demand for leather is increasing for bags, garments, transport and household products whereas cotton is in short supply due to bad crops and weather conditions in suppliers' markets resulting in increased fluctuations in price, increasing sourcing costs and making the final product expensive. CC1, CC2, CC3 and CC4 respondents also highlighted the changing priorities of basic raw material growers and their impact in the form of high sourcing costs, high prices, shortages and high fluctuations, for materials

such as cashmere, wool, leather and cotton: *"In China just now, what they are doing is, the goats are not only source of income through fibres, they're also now becoming a sources of income through meat to sell, so that's our biggest sustainability risk"* (CC4 sourcing manager). CC2 and CC4 respondents mentioned similar problems for sourcing cashmere, particular type of cotton quality and merino wool. CC2 and CC4 respondents also mentioned the demand volatility which originates from the nature of raw materials. For example, a sudden increase in demand for cashmere scarves and jerseys will increase demand for cashmere, but there is only a limited quantity available in the world market: *"So if you have a bad clip, a drought in New Zealand or rain, that's it, there is no wool"* (CC2 Purchasing Manager).

CC3 and CC5 respondents were concerned about fluctuations in oil prices, use of plastics and nylon in other industries, causing shortages for the fashion industry. Respondents also mentioned that manmade fibre producers are also decreasing in the fashion industry, which is increasing raw material sourcing costs, price fluctuations, lead times and quality issues and impact on customer service: *"In our case, we extrude very fine nylon and actually you are better just putting it into plastic bottles or things that go into cars then, that's probably the main sustainability risk actually the very basic raw material"* (CC3 purchasing manager). However, CC5 respondents mentioned that there are serious issues in terms of raw material shortages and price fluctuations but maintained that as their company is not looking for a particular type of raw material or fibre, it would always be able to meet its needs, as there is still a plentiful supply in the market at the required quality, price and cost: *"UK manufacturers and suppliers deal with particular fibres, but us, we always meet our need at the quality, price and cost because we deal in cotton, polyester and manmade fibres mostly that are easy to source because they are in plentiful quantity in Asia"* (CC5 Sourcing Manager). CC1, CC3 and CC5 respondents mentioned the problem of severe competition for natural fibres and the consequent fluctuations in price, which result in high material and sourcing costs and a high final product price: *"If we all of sudden had a season which was all about wool coats and actually our supplier all of sudden let us know they can't give us wool coats that we needed because they had issues in getting raw wool in a quantity that we needed"* (CC5 Design Manager).

Size: Case company respondents also mentioned that the small size and weak financial position of their companies are major constraints in managing SCSR. Further, their weak financial position, stagnant growth and the world economic situation do not allow them to hire someone or to deploy resources to look specifically at issues from a SCSRM perspective. Therefore, most of the SCSRM strategies are embedded into managers' jobs and responsibilities. Overall, two perspectives were found from a company size and SCSRM perspective. First, size in terms of weak financial position does not permit them to spare resources for SCSRM. Second '*managements' perception*', because most of the respondent managers and directors believe that a company of their size does not need any formal SCSRMP, which is only suitable for large fashion retailers.

CC1 and CC3 respondents believe that lack of resources, especially the weak financial position of the company, cost issues and slow growth do not allow their companies to have a dedicated person, department and processes to look holistically at SCSRM. However, respondents believe that SCSRM should be a common strategy of the departments and should be integrated into business strategy: *"I think we're smaller, our volumes are smaller if our volumes were as big as those of global corporate businesses the Burberry, Luis Vuitton or our retailer M&S then things would have different, definitely"* (CC1 Quality Control Manager). CC1 and CC2 respondents mentioned that they would love to have certifications, dedicated teams and formal structures and procedures for SCSRM, if their financial position was strong and they could afford it: *"I would love to have ISO 14001 as part of the things that I could show to the world about CC2 but that requires a lot of money, resources and effort and in the state that we are now, that would be a big, big ask really"* (CC2 Production Manager). CC4 and CC5 respondents also mentioned that due to their smaller size it is difficult to get credit from banks, have dedicated teams and to look at SCSR holistically*: "Bigger companies have got maybe a team to look at it, the smaller ones, they don't have resources to have a team set-up, they more process towards getting things sorted they want"* (CC4 Sourcing Manager).

However, the respondents from case companies CC2, CC4 and CC5 also maintained that a company of their size does not need any formal strategy or framework to manage sustainability risk: *"If you're a boutique owner in Bermondsey, do you need to have a*

great corporate strategy looking at sustainability risk analysis?" (CC4 Supply Chain Manager).

CC2, CC4 and CC5 respondents also mentioned size as a main barrier in managing SCSR from supply chain partners' perspective. CC5 places small orders with small manufacturers and suppliers but over time, small suppliers and manufacturers either cease to exist or they are unable to manage capacity, which is causing supply chain sustainability risk for CC5: *"The problem is, the real problem, some of our suppliers could not manage capacity over the time that we needed"* (CC5 Sourcing Manager).

Technology: There are many technological innovations in the fashion industry but the case companies were not found to be at the forefront of such innovations. Several companies (CC1, CC2 and CC4) are still operating with three to four decades' old machinery. In terms of technology, respondent managers expressed two points of view. First, it is a huge capital expenditure which could only be made provided UK retailers showed interest in sourcing more from them. Second, respondents believe that existing machinery best suits their needs and is best at what it does, therefore they feel no urgent need to up-grade it. Both of these views were found as barriers in managing SCSR because the first view leads to inferior customer service, long lead times and greater costs, while the second has the same implications because existing machinery is labour intensive, slow and overall more costly. However, respondents agreed that their companies should up-grade technology and improve efficiency as a pull strategy rather than first seeking retailers' interest.

Respondents from CC1, CC2, CC3 and CC4 mentioned that their companies are constantly upgrading technology in the UK but still need to see a commitment from retailers for any big capital expenditure. CC1, CC3 and CC5 respondents mentioned that technological up gradation needs are fulfilled by their supply chain partners in Asia more efficiently and effectively. However, respondents also mentioned that because of lack of advanced technology, their companies are not able to serve new markets efficiently and develop new products and sometimes not able to provide better customer services: *"I believe our partners in South East Asia have far more advanced technology than us, we need to see a reasonable commitment from our retailer before we take any*

step for advancement" (CC1 Sourcing Manager). CC3 respondents further mentioned that outdated technology is a competitive threat if other factories change their preference about providing products to the UK factory or if the suppliers went into receivership.

CC2 and CC4 respondents also hold the second perspective, that the existing machinery is doing what it is supposed to perfectly well and there is no urgent need to up-grade it, ignoring that it is labour intensive, slow and overall inefficient: *"We have got some very old machinery, we have got some machinery going back to the 60s, very old machinery, the machinery we have got does a good job, so why should you spend your money"* (CC2 Site Manager). The researcher observed that CC2 and CC4 have bought some new technology but interestingly, for some fast fashion lines.

CC3 and CC5 respondents believe that most of the time bad customer service, long lead times and disruptions are mainly due to suppliers and manufacturers who do not have appropriate technology to perform different operations. CC5 respondents further mentioned that one of the major sustainability risk prioritisation criteria is reliability, and reliability is judged based upon available technology at suppliers' and manufacturers' factories: *"if a supplier has skilled workforce, better technology and knows what is in demand I will ask my sourcing manager to consider that supplier"* (CC5 Supply Chain Manager). All the respondents believe that that it is imperative to have more advanced technology to meet the fashion requirements of cost, price, lead times and responsiveness. CC5 respondents mentioned that if a supplier or manufacturer proved unable to upgrade technology and manage capacity, their company would go for its least favoured option which is de-listing.

5.4.2 Growth of Fast Fashion

Literature review chapter mentioned that the phenomenal growth of fast fashion has also introduced a large number of SCSR. However, Appendix Three, within-case and cross-case analysis, shows four types of challenges which fast fashion brought for the case companies to manage their SCSR. Those are, disappearance of garment clusters in UK, increased SC complexity, consumer appetite for fast fashion and inconsiderate for

sustainability issues in fast fashion supply chains and increased pressures from retailer. This section addresses sub-themes related to growth of fast fashion as SCSR.

Disappearance of clusters: Garment manufacturing is a complex business; it comprises a large number of operations in small and medium sized manufacturing plants which could be referred to as textile clusters, such as ginning, waving spinning, knitting, sewing and finishing. Of similar importance are button providers, dyers, and packaging and hand finishing operations. For a viable textile and garment industry it is very important to have these operations in one country or geographic location. For example, case companies' respondents mentioned that, in the UK, the Scottish borders were famous for knitwear and finishing, Yorkshire for spinning, carding and weaving, Lancashire for cotton, Worcestershire for carpets, Leicestershire for hosiery. With UK retailers' strategic move to outsource and offshore manufacturing, these UK textile clusters could not survive. However, a severe shock to some of the remaining textile clusters was the abolition of the MFA (Multi-Fibre-Agreement) which caused almost complete disappearance of these clusters. It was partly due to the cheap imports, operating costs in the UK and lack of interest by the large UK retailers and ultimately UK textile clusters could not compete and survive against cheap textile clusters in Asia. Now the UK suppliers, manufacturers and retailers have to order and import everything from overseas, even the most basic items such as garment tags and buttons. The disappearance of textile clusters increased supply chain sustainability risk by increasing supply chain costs, uncertainties, dependencies, long lead times and quality problems, to mention a few.

CC1, CC2 and CC4 respondents criticised the UK society and government; society for welcoming fast fashion and not thinking of the consequences of cheap fast fashion garments and the government for not intervening by introducing legislation against cheap garments imports. Respondents further mentioned that they have to go off-shore even for the smallest items such as buttons and tags, whereas those were previously available in the English midlands: *"We used to have in the Midlands those material and service providers but government thought we don't need it slowly, gradually, the external environment became hostile so they didn't survive"* (CC1 Quality Control

Manager); *"We used to have button suppliers, dyers, finishers even packaging companies in Yorkshire, it's a shame it's all gone"* (CC2 Site Manager).

CC2 and CC4 respondents saw the decline and disappearance of clusters as a real challenge to the revival of the UK fashion industry. Respondents from CC1, CC2 and CC4 maintained that the UK government can help small and medium businesses by providing finance, by tax reductions and buying machinery to build textile clusters in order to develop a viable fashion industry.

CC3 and CC5 respondents went so far as to assert that there is no fashion industry in the UK and maintained that there are only a few plants, which are expensive and of low capacity. Respondents from those companies also mentioned problems such as long lead times, increased supply chain costs, quality problems, transportation costs, environmental issues and dependencies. Consequently, impacting the UK fashion industry to provide better services in terms of capacity, lead times and margins as reasons for not having service providers (textile clusters) in the UK. *"I have tried to do some here in the UK but no yarn supplier no industry and if I go further down the line it will increase cost"* (CC3 Purchasing Manager); *"I wouldn't call it the UK fashion industry, there are only a few plants; most of them are not capable to provide what we want, at price we want, the margin we want"* (CC3 Ethical Compliance Manager). CC1, CC3 and CC5 respondents also mentioned that not having a proper fashion industry in the UK is a big sustainability risk in terms of getting capacity, cost benefits, margins and lead times, especially at peak season or for mid-season buying: *"We don't have those relationships, that capacity and that level of service in the UK, as it was when I joined the industry; there is a lot of talk about its revival but no actual facts and figures"* (CC1 Supply Chain Manager).

Increased supply chain complexity: The phenomenon of fast fashion has also increased the supply chain complexity of the fashion companies in the UK fashion industry by adding a large number of suppliers and manufacturers in their supply chain from different localities. Further, fast fashion requirements for different colours, fibres and styles also made the UK fashion industry explore new supplier and manufacturer markets, adding more operations, to remain flexible. As fast fashion requirements

change from trend to trend, fashion retailers are in a constant process of seeking new suppliers and manufacturers who can provide what is on trend. Along with extended supply chains, some other issues which are adding complexity are supply chain partners' culture, language, time zone, political stability, management structure within their organisations, country trading agreements, quotas and customs and currency valuation or devaluation issues.

CC1, CC3 and CC5 respondents mentioned that their companies were mostly sourcing from Far East but most recently added suppliers and manufacturers from Europe, North America and Africa, leading to a more complex structure. Respondents further mentioned the complexity in terms of increasing operations and number of countries their companies are adding, political tensions and legislation which are introducing new sustainability risk that their companies had never thought of: *"For the consumer its CC1's pair of shoes but for us its 60 different materials 70 operations and in our supply chain we have just one material and one operation in just one country; you can imagine the complexity of our supply chain that is being introduced to us"* (CC1 Supply Chain Manager). Respondents also mentioned greater complexity due to new geographical areas and their impact on reduced margins, complex manufacturing processes, cultural issues and preferences from different retailers and markets: *"Now the Japanese want heritage, Americans want quality, then you have different laws, languages, Indians have their own way of work, sort of bureaucracy, bribery, so every new country we're entering introduces a whole lot of complexity which is not easy to manage"* (CC3 Ethical Compliance Manager).

CC2 and CC4 respondents also mentioned the problems of an extended and constantly changing supply chain structure, consumer demand volatility, managing new operations and providing training, dispersed industry, cultural issues, adding new markets and the difficulty of properly understanding supply chain costs: *"We recently embarked on some business in Brazil, a new market for us, it's a very bureaucratic system; your goods may well be subject to not finding their way intact to the desired recipient unless you have a key partner on the ground"* (CC4 Commercial Director). CC3 and CC5 respondents also mentioned complexity in terms of transportation modes, cultural issues, ambiguous chain of distribution, complex supply chain, cost issues due to its

length, testing failures when a product arrives in the UK and complexity in relationships due to the large number of suppliers.

Consumer behaviour: The growth of fast fashion has heavily impacted consumer behaviour and made the UK overall a throwaway society. The insatiable appetite to replenish clothing on the one hand presented an opportunity for businesses but on the other increased sustainability risk to both fashion and fast fashion retailers. Further, increased use of the social media such as Twitter, Facebook, Instagram and other platforms fuelled fast fashion trends. Now consumers have greater opportunity than ever before, to shop for what they like, when they like and at the price they want to pay. Overall, consumers are becoming more demanding for trendy products and at the same time not willing to pay more and inconsiderate for sustainability issues in fashion supply chains. Further, declining disposable income and the world's economic situation have also impacted consumer confidence and there is more focus on savings and less spending on garments than there was a couple of decades ago.

CC1, CC2 and CC4 respondents mentioned that UK consumers do not care about quality and only look at price. Respondents further mentioned that suppliers or manufacturers to UK retailers are producing high quality garments and selling at high prices which, in most cases, are not affordable for most of the UK consumers. Respondents also mentioned that fast fashion has got a particular price point which the general customer is willing to pay: *"The fashion industry is not bothered, they will go on at the speed they're going for money, because that's what the customer is demanding"* (CC1 Sourcing Manager). Respondents further mentioned that the companies had tried to introduce some product lines made of organic fibres but they did not sell well, suggesting consumers really do not care about social and environmental issues: *"We have tried to introduce an organic green product which didn't go very well, at the end of the day, obviously you have got to be driven by what the consumer want"* (CC2 Purchasing Manager).

CC3 and CC5 respondents believe that the ability of their organisations and others' in fast fashion to provide what customers want helps in managing sustainability risk. However, they further maintained that customers are constantly looking for new ideas

and low prices and are not willing to pay extra. Respondents further mentioned that since consumers do not care, therefore retailers do not care either, but pass some requirements down to vendors. Respondents mentioned that consumers think they are getting good deals, bargains and fashion but they do not pay attention to how something could be so cheap or available so quickly: *"The consumer wants new ideas and has got used to paying the same on a regular basis and has got used to paying a certain level of price for them"* (CC3 Project Manager); *"I don't think consumers give the slightest consideration in their purchase decision, look at Primark, still in profit"* (CC5 Design Manager). Respondents further believe that there is less consumer loyalty than ever before because of the options available to the consumer. They further believe that today's consumer is keener than ever to bring down organisations if they are to found doing something unacceptable and at the same time consumers are not willing to stop buying from those retailers, such as Primark: *"They are providing what customer wants so if the customer does not care, why should they? I think customer still prefer price and fashion content instead of ethics or environmental issues"* (CC3 Design Manager).

Therefore, CC2 and CC4 respondents mentioned that most of their products are for export rather than the UK market. However, currency fluctuations and the cheap pound causing competitive threats to these UK exporters. CC1, CC2 and CC4 respondents also mentioned that in order to attract consumers, certain efforts were made under the theme of Made-in-UK and sustainable products but these efforts had not paid off: *"There have been some efforts to bring customers along, for example Made-in-UK, green products, fairly sourced; all useless, consumers didn't give them the slightest thought"* (CC4 Sourcing Manager).

Increased pressure from retailers*:* The advent of fast fashion phenomenon, plentiful supply, the emergence of new supplier markets and development of existing markets enabled and shifted power to retailers. Consequently, retailers have become more demanding in terms of passing cost, price, margins, discounts, capital expenditures, certifications, product development and distribution cost pressures on to upstream supply chain partners.

Respondents from all the case companies mentioned that most retailers are manufacturing in third world countries where sustainability has not been implemented in its true sense and when such a retailer comes to the UK suppliers, it expects the same price, quality and service level. Respondents further mentioned that if their company were to speak to the retailer about its own sustainability risk, the retailer would not respond to that and would go elsewhere because there is always someone to supply from overseas; *"I think that's the nature of the business they're in, they are there to make money, if you will talk about your own risks or sustainability issues or cost or growth you will never hear back from them, they're gone to someone else"* (CC1 sourcing manager); *"They crush the price at manufacturer level before you have even got to the wholesale price; the pressure was phenomenal even in this country, so I can only imagine what's happening out in, sort of, Bangladesh"* (CC2 Sourcing Manager).

CC2, CC3 and CC4 respondents mentioned that retailers do not want to discuss product or service specifications and most of the time their companies have to decide themselves. Consequently, very often retailers ask for changes or cancel orders close to delivery. They further mentioned unreasonable demands from retailers to produce something in an unreasonable time and claimed that their behaviour is very autocratic. Further, retailer perceives them as a sweatshop and thinks that whatever they demand of them is right: *"I think it's, you know, what they want but they don't really know what the rest of the companies can do for them and rather than asking them, 'what can you do for us?', sometimes, it's 'we want this, this, and this"* (CC4 Technical Manager).

CC3 and CC5 respondents mentioned retailer pressures for short lead times, cancellation of orders close to delivery, quality problems, margins and discounts and no repeat orders. Respondents further mentioned that only a few retailers will ask about ethics, standards and certifications, whereas most of them are only concerned about margins and lead times: *"They just say no, simply because they want discount, they know the product has arrived, it's in our warehouse, it's perfectly fine but they say no because they still want a discount"* (CC5 Supply Chain Manager).

The evidence from CC5 highlights some of the issues mentioned by respondents regarding retailers' pressures and increased power. CC5 respondents mentioned that

their company will delist or not provide a repeat order if a supplier or manufacturer is not able to provide capacity, the required lead times, margins, fast samples and product development. One of the reasons presented by CC5 respondents for price pressures are consumers, as retailers are simply demanding what they are asked for by the final consumer, price cuts: *"Actually the people who can't afford higher price products and these retailers provide the service, that's the way"* (CC5 Design Manager). Respondents also mentioned that consumers also want newness and want it all the time, which is the main reason for change in design, orders or cancellation of previous orders. However, respondents also mentioned that sometimes it is somewhat tactical to cooperate or consider supply chain sustainability risk, most of the time the intention is to get a product here and now.

5.4.3 Organisational Culture

Organisational culture was found as the major barrier to manage SCSR for FSCs and for the UK fashion industry (chapter two and three). However, Appendix Three, within-case and cross-case analysis, found two particular reasons, resistance to change and lack of communication and information sharing, why organisational culture has become as major SCSR for the companies in the UK fashion industry. This section addresses sub-themes related to organisational culture as SCSR.

Resistance to change: the decline of the UK fashion industry and then the abolition of the MFA impacted negatively the companies in the UK fashion industry. Factory work started to be perceived as boring and non-progressive; therefore no newness came into the garment industry and ultimately the industry became dependent upon its existing workforce. Now, in most of the case companies the average workforce is aged in the late 40s or early 50s. This has impacted organisational culture substantially, making it stagnant and inducing huge resistance to change. Most of the working practices are more than two decades old and still perceived as the best ways to progress. Resistance to change is greatly impacting customer service, cost, less quick response and greater sustainability risk.

CC1, CC2, CC3 and CC4 respondents mentioned that there is an overall attitude that if something is not broken then why tries to fix it and it is very difficult to get all the

people in the company to believe that change is needed and take it on board. Respondents further mentioned that people in their companies do not understand and have knowledge about where the fashion industry is and how dramatically it has changed over the last few years. Customers want new designs, new colours and fibres all the time, while people still want to stick with old ways of doing things: *"In our company and the whole fashion industry in the UK, there is probably an attitude of just take it for granted that the product will always be there and I think it's something that needs to be looked into more heavily"* (CC1 Supply Chain Manager).

CC2, CC3 and CC4 respondents mentioned it is even more difficult when people have worked for 35 years in the same way. Respondents further held that most people believe that they are already working on the most important things and most of the time people resist change. Further, when management or directors try to introduce something important, most of the workforce argues that it is an outside model and it will adversely impact their way of work. CC2 and CC4 respondents mentioned that their companies' priority is to bring new people in to change the culture and to bring competition: *"Getting people on board is the most difficult, especially when people have been here for 35 years, we have always done it this way, it's something you hate to hear, we have always done it this way, that doesn't make it the best way, it just makes it the way we have always done it"* (CC2 Sourcing Manager).

CC2 and CC4 respondents mentioned difficulties in getting everyone aligned with the standards and to believe that the market has changed and their ways of work are not appropriate anymore. As mentioned by the technical manager at CC4, *"They accept it in their social life; all the developments and improved ways of work and life, people accept at home and in their social life, but at work they are happy to keep what they were doing in the past"*. Further, people think that their individual effort will not contribute and they have become used to doing things in certain ways. CC1, CC2, CC4 and CC5 respondents also mentioned the UK fashion industry culture of being slow and maintaining decades old working practices as a major threat to survival and believe that if the industry does not change its culture, especially from a customer service point of view, then it will not survive.

CC5 respondents believe that the company culture is reasonably good. However, there are certain instances where it is difficult to convince the finance people that certain areas in the business need investment. Respondents also mentioned that management does not want to try, does not want to change and most of the time complains about the recession and world economic situation as reasons for slow growth and declining demand: *"I think everyone here thinks kind of, we're fine, it's just the market, it's just the world economic thing sort of recession, but I think they themselves do not want to try"* (CC5 Design Manager). CC2, CC3 and CC4 respondents also mentioned supply chain cultural issues of bribery, bureaucracy, corruption and language problems: *"If I'm going to India, there is a very Indian way of doing things which is not about English language, rather culture, bribery, and corruption sort of issues"* (CC3 Ethical Compliance Manager).

Lack of communication and information sharing: Traditional ways of work have promoted a self-confined psychology within the companies and departments. There is a lack of communication and information sharing which leads to increased sustainability risk. Every person is working in isolation and feels responsible for his/her own job and responsibilities. There is also a lack of inter-connectedness which creates bottle-necks in operations and processes. People have very little understanding of how their area of work or job impacts others' and how they get impacted by others. Lack of a sense of responsibility, team and organisation is further reducing the already low level of communication and information sharing. The case companies also mentioned many instances where lack of communication and information sharing caused huge disruptions, increased costs and bad customer service.

Respondents from all the case companies mentioned that people are not involved and communicated with at the basic stages and it is done at the last minute, which costs money, time and resources. Further, there are a large number of reviews and study groups, yet information and learning from such initiatives are not properly communicated within the company. CC2, CC3 and CC4 respondents perceive that certain individuals in the company have information about some specific products, processes and operations but as work in different departments they do not communicate how things work. Surprisingly, respondents still perceive it as legitimate to not have

communication and information sharing with others in the company because the nature of their work or job is different from others in the company. However, all the respondents in all companies mentioned that there are initiatives to promote internal communication so that people should know how their work is impacting others and how they are impacted and ultimately make better and informed decisions and planning. Respondents from CC3 and CC4 further believe that information sharing and communication, in reality it is a matter of ticking boxes and then whoever does a job first will walk away instead of communicating and sharing information on the process and outcome and guiding others for improvement. Respondents further mentioned that it is imperative to communicate with people on why they are being asked to do things differently: *"I think the key is the communication and sharing information with people about why we're doing this because if you don't do it now and get it through fast, you're not gonna go and sell"* (CC4 Technical Manager).

CC3, CC4 and CC5 respondents mentioned huge disruptions, costs, bad customer service and sustainability risk caused by lack of communications and information sharing. For example, at CC4, a retailer changed a design after the first confirmation but the design department did not communicate with manufacturing. For these reasons, CC4 recently started a massive campaign to increase internal communication and information sharing. CC3 and CC5 respondents mentioned communication and information sharing problems, especially regarding finance, sourcing and supply chain functions. Most of the respondents mentioned that managers in these functions took isolated decisions that are not very well communicated with the rest of the workforce. Respondents further mentioned that internal communication and information sharing had impacted the company several times, particularly in the customer service area: *"Now, I don't know why the finance manager didn't approve funds, I don't know why the sourcing manager didn't place an order, I know nothing; all I did, I designed and passed but never saw that product physically arriving here"* (CC5 Design Manager).

CC1 respondents mentioned that the level of information sharing and communication has improved after restructuring and there are multiple bridging points for this purpose. However, respondents still believe that within the company: "*people are hesitant to communicate from sustainability or risk management perspective, they think it's*

something new so they lacks confidence they would still prefer to talk about cost, price and quality and other usual things" (CC1 Logistics Manager). Similarly, CC2, CC3 and CC4 respondents believe that the level of information sharing and communication within the functional areas is fairly effective; however across the functions, nobody knows their directions.

5.4.4 Management Structure

Management structure was found another major barrier to manage SCSR in FSCs (Chapter Two). However, Appendix Three, within-case and cross-case analysis, found two particular reasons why management structure has become as major SCSR for the companies in the UK fashion industry. Those are, disintegration and control orientation and lack of knowledge about SCSRM. This section addresses sub-themes related to organisational culture as a SCSR.

Disintegration and control orientation: Evidence shows that most of the case companies have a very strict, rigid, classic and bureaucratic management style. Most of the case companies have department and control orientation where strategic and operational issues are controlled and managed on a departmental level. Most of the managers are executers rather than planners or decision makers, whereas strategic and operational planning and decision making is done by managing directors in their departments. At some points managers also have their inputs but the final decision rests solely with the managing director. Further, the interfaces between departments are very broad with little collaboration. Consequently, there is a high level of disintegration and overall control orientation.

Each department has its own priorities. For example, for finance managing cash flow, debt books and reducing costs are the main priorities; for sourcing, to get raw materials, etc. Evidence also suggests that only the managing director knows what the company strategies are and what the company wants to achieve in the future. On the other hand, the utmost priority for the managing directors is financial gains, reducing costs and driving efficiencies. Most of the managing directors are hired due to their experience and networking within the garment industry and they are expected to bring more business into the company by using their relationships. However, performance

measurement within the departments is very short term, which is the main reason why these top officials are driving efficiencies. From the smallest decision, for example, hiring a new member of staff, to strategic decisions, for example, entering into a new market, are all decided by these managing directors, but surprisingly there is also a high turnover of these managing directors as they have better offers from large retailers in the UK.

CC1, CC3, CC4 and CC5 respondents mentioned that the senior management lacks a global vision, do not look at whole process and issue instructions without understanding business model. They mentioned that every department has its own sustainability risk, which are managed by directors independently from other departments. Respondents emphasised the need for a close integration between design, technical and manufacturing departments, which are disintegrated at the moment. They also mentioned the power of directors to drop or bring in a new project whenever they want and that managers must comply with their instructions, regardless if they are already working on something important: *"You set your time and your heart on doing one issue or an assignment, you have really got your heart on it and the day after something might come up that in directors' eyes are more important than yours and all of sudden you have to drop it, yeah, it's on the back burner"* (CC1 Logistics Manager).

CC2, CC3, CC4 and CC5 respondents maintained that they do not have any input into operational and strategic decisions or corporate strategy formulation: *"I personally don't decide or plan that, I buy from where I'm told to buy from and send it down the specific routes"* (CC2 Purchasing Manager). CC2, CC3 and CC4 respondents further believe that there should be team-based management rather than senior managers have all the planning and decision making power. They claimed that they are given job tasks to perform to certain timescales and the senior management only tell them at the last minute to cancel it or a managing director from another department will come and cancel a task because suddenly he/she has realised it is not viable: *"Unfortunately I have no orders, I have no idea of the forward demand and yet I still have to come up with enormous minimum lots and things because this is on my timescale"* (CC2 Purchasing Manager).

CC2, CC3 and CC4 respondents mentioned some of the reasons why they are department and control-oriented, such as the short performance measurement period, buying at the lowest price, driving efficiencies etc.: *"It's a short term world, the performance is based, the way the individuals are measured, your performance is based on the last three months; the next three months, anytime above that, the reality is, it's just smoke and mirrors"* (CC3 Project Manager). CC3 and CC4 respondents further criticised managing directors for taking decisions without knowing how manufacturing works. They do not assess risks properly at the beginning and they all have different views on corporate strategy. Further, top management takes most decisions from a cost perspective: *"To employ a specific person that only manages sustainability risk would be quite hard to justify; at the top level, my boss, he would say 'prove to me how we could in effect cover the cost of that individual' and he would push it back and say everybody in their own jobs should manage sustainability or risk assessment themselves"* (CC3 Design Manager).

CC4 and CC5 respondents mentioned that these directors are the most influential people and without their consent managers cannot improve certain areas of the business, even though experience tells that a slight change in management can help the company to grow and manage CSSR. Respondents mentioned that department managing directors take decisions in isolation which have an influence in terms of increasing work, using people and adding operations to another department, which need to be planned and decided in collaboration with that other department. Respondents further mentioned that there is very little integration and collaboration between management and departments. CC2, CC3 and CC4 respondents also mentioned that interfaces between sales, commercial and design are not close, high level meetings are held but managers, supervisors and shop floor people are not involved: *"Our interface between our sales, commercial and production planning hasn't always been so close until recently, our design department tries to make decisions without being collaborative across our commercial and production teams; decisions are made without full knowledge and agreement by the planning team"* (CC4 Commercial Director).

CC3, CC4 and CC5 respondents further highlighted the need for directors to step back from routine work and think strategically at the bigger and whole picture about risk and sustainability issues and how they can manage them effectively.

Lack of knowledge*:* Respondents in the case companies were found not to have knowledge on sustainability risk management and to have very limited knowledge within their own functional areas as well as about other departmental functions and processes. Sourcing managers know nothing about design and design knows nothing about manufacturing, sourcing and the supply chain. Most of the managers also mentioned that managing sustainability risk is not part of their job, while others mentioned that directors have some sort of strategies but they do not know about them. Surprisingly, some respondents mentioned that their company does not have risk and sustainability issues. Some respondents were also found not to have complete knowledge about their supply chain, in terms of supply chain partners, sourcing markets, target markets and the major corporate strategy of their company. Respondent managers, however, maintained that having multifunctional knowledge does help in managing sustainability risk and is a key element in the success of their business.

Most of the respondents in the case companies, especially CC2, CC3, CC4 and CC5 mentioned that it was not part of their job and/or they did not know the answer. Further, they were not sure what are the key risks and sustainability issues in their company. Respondents mentioned that they did not know how the company managed sustainability risk, however, they did not do it. Some respondents also mentioned that their job role is not relevant to sustainability risk and they did not have anything to do with it: *"I'm not sure what are our key risks and sustainability issues"* (CC1 Logistics Manager). Respondents also insisted that they could not answer the question on sustainability risk because they did not know about it: *"To be honest, I don't know, in reality I don't"* (CC3 Project Manager). At CC1, CC2, CC3, CC4 and CC5 respondents also referred the researcher to other managers to answer sustainability risk related questions, but the researcher could not get answers. Most of the managers replied that they could not answer because they did not deal with it, they had not thought about it before, they were not sure how company managed it, and they had no idea at all; *"It's difficult for me to answer that one, to be fair"* (CC4 Technical Manager); *"I think the*

sustainability champion will be the best to talk to because he deals with it every single day" (CC4 Warehouse Manager); *"To be honest I don't have a clue about it, I don't have a reasonable background about it, all I know is energy related issues"* (Sustainability Champion).

Respondents at CC2 and CC5 mentioned that they did what they were told and did not know how the company manages sustainability risk and what strategies are in place. However, respondents also highlighted a need for sharing knowledge rather than being dependent upon one key person and running sustainability risk if that key individual falls sick or leaves the company and takes his/her knowledge with him/her. Most of the respondents suggested the sourcing manager could answer, some said the purchasing, others said the supply chain manager could answer the question because it is relevant to their job; *"Me personally, it's not part of my specific job, that's not really relevant to my position"* (CC2 Site Manager).

CC3 and CC4 respondents mentioned that sometimes even management does not understand what they are looking for, because they do not have complete knowledge about their departments, functions and processes. Lack of a clear strategy and focus was also mentioned as a main issue with senior management at CC3 and at CC4, it was mentioned that there is a need to involve knowledgeable and skilled individuals to design a SCSRM strategy. Surprisingly, CC4 respondents also tried to defend their lack of knowledge about sustainability risk management and mentioned that they did not think they had to manage sustainability risk. For example, the design manager perceived that her role is very creative and risk management is more relevant to manufacturing, sourcing or machinery buying people.

CC3, CC4 and CC5 respondents also mentioned that they passed some customer requirements on SCSR to supply chain partners, particularly suppliers and manufacturers, but they really did not know how supply chain partners are managing them: *"How do we do this? Well our sourcing manager does it on our customers' request, I will ask him to explain it for you"* (CC5 Supply Chain Manager); *"I simply pass (sustainability risk requirements) to our partners in Asia and they provide us this information but I don't know procedures or strategies"* (CC5 Sourcing Manager). CC1

respondents were found to be relatively more knowledgeable, not surprisingly. However, in terms of the supply chain, CC1 respondents were not different from those in other case companies, as most of the respondents referred to other individuals who were working on specific projects.

5.4.5 Safeguarding Brand Reputation

The literature review chapter (Chapter Two) mentioned that safeguarding brand reputation is imperative for fashion supply chains to survive and compete. Further, it was mentioned that many organisations take SCSRM initiative to safeguard their brand reputation. However, Appendix Three, within-case and cross-case analysis, found two particular reasons to why the supple chains of the UK fashion retailer are concerned about their brand image those of; lack of supply chain visibility and control and move to a mixed manufacturer or supplier. Therefore, safeguarding brand reputation has become a driving force for the case companies to manage their SCSR. This section addresses sub-themes related to Safeguarding brand reputation as a SCSRM strategy.

SC visibility and control: A longer and extended supply chain has compromised supply chain visibility and control in both fashion and fast fashion supply chains. The unpredictable nature of the fashion industry placed different types of pressures on the supply chains, for example, short lead times, cost, quick response and fashion content. For example, if demand exceeds expectations for a particular raw material then the manufacturer or retailer has to either ask their supplier for more raw materials or buy from the open market to fulfil capacity problems. The supplier will see this as a business opportunity and in order to fulfil demand will source from outside contractors which are not vetted or known to the manufacturer and retailer. Similar problems exist in buying from the open market because it is much easier for the open market supplier to provide documentation about the transparency and traceability of those materials, but in reality it is difficult to believe information on paper. This entire situation leads to problems like Rana Plaza in Bangladesh, ultimately causing brand and business reputation, more costs, quality and legal issues.

Contrary to the above commentary, however, case companies also mentioned that greed for cheap labour, raw material and cost efficiencies are underlying reasons why most of

the companies in the UK industry do not think about supply chain visibility and it impacts their brand image. They argued that with due diligence, experience and better planning, most supply chain visibility and control problems can be overcome. Further, respondents believe that these measures are very important because a brand has more bias and expectations towards sustainability risk and therefore demands equal attention from organisations to satisfy wider expectations towards it.

CC1, CC2, CC3 and CC4 respondents believe that their brand is their most important and valuable asset which has a big name, background and history; therefore SCSRM is different and more important. Respondents also mentioned that most of the time they carry out scenario planning, audits and checks, believe in partnerships and close relationships to protect the company's brand image. They also mentioned visiting supply chain partners, ensuring due diligence, following strict rules and guidelines and nominating suppliers and partners to protect their brand image so that *'Primark things'* might not happen at any tier in their supply chain: *"We have probably a higher risk than maybe some other manufacturers because of our history, background, brand image and quality of our product, our sustainability risk management strategies would be a completely different kettle of fish than any other business that might look similar to ours"* (CC1 Logistics Manager).

CC2 and CC4 respondents mentioned that over the years, pressures are building from different sources to explain where their materials come from; to what quality and ethical standards they are sourced and what environmentally friendly initiatives have been taken. CC2, CC4 and CC5 respondents showed their concern about the intermediate processes which are taking place in different countries that have the potential to impact business and brand image due to lack of control and visibility: *"Any company of any size can face such issues; just look at the horse meat stuff going on now, they claim they didn't knew it was going on and that's probably true; things like that can happen; if somebody is doing your work that you are not aware of, you don't have a chance to look at them, go visit their factory and talk to their management"* (CC5 Supply Chain Manager). Respondents at CC2 and CC4 also mentioned visits, looking deeply at different processes, having a long term view, high working standards, using third parties for audits and certifications to protect their brand reputation.

CC2, CC3 and CC4 respondents also mentioned that for the continuity of their business it is very important to safeguard their brand reputation as a manufacturer but a threat to that is that sometimes retailers ask them to do things that do not go through their normal supply chain operations and routes, creating control and visibility concerns. Therefore, they have certain extra responsibilities to fulfil, especially on fashion, lead times, ethics, quality, innovation and customer service. Further, CC3 and CC4 also have their own code of conduct to protect their brand and business reputation. In their view, brand has a greater bias towards risk and sustainability issues and so things need to be done properly and with due diligence: *"I think brand would have stronger bias towards sustainability and risk issues and that's where you differentiate by making things properly and with due diligence to the best of your capacity"* (CC4 Sourcing Manager). CC2, CC4, CC4 and CC5 respondents mentioned that their company sources from around the globe, but in reality sometimes they do not have complete visibility at the second, third and fourth tier of their supply chain, which could cause major damage to their brand: *"but just look at what happens when a big company gets notification in their supply chain that's the second or third or fourth supply tier back, where you really don't have that much visibility and control, I guess there is always a risk that somebody is gonna find something bad that's well beyond your immediate control"* (CC4 Supply Chain Manager).

CC2 and CC4 respondents also feared that they might be associated with a customer or supplier who does not have same brand value as CC2 and CC4, which could be a major reputational issue for the company. However, respondents also mentioned positive aspects of being a brand, for example, getting preferential treatment from suppliers, government and customers, which indirectly builds pressure to ensure that their brand is clean in all respects.

CC1, CC2 and CC4 respondents worried about low visibility and control in the supply chain due to the large number of suppliers and manufacturers and the use of sub-contractors. CC1, CC2 and CC4 respondents further mentioned that as a successful business and having their own branded products, their companies are under scrutiny from customers, environmental, social and many other interest groups from ethical, environmental and legal perspectives. Therefore, the respondents mentioned the need

for due diligence, visits and checks, using experienced people for contracts and trying to ensure as much visibility as possible to safeguard business and brand reputation.

Move to mixed manufacturer/supplier*:* Fashion consumers' preference for fast fashion has stimulated fashion retailers to place orders for such lines even with luxury fashion suppliers and manufacturers. On the other hand, consumers are asking for more fashion content in basic lines and ultimately retailers are passing these requirements on to the suppliers and manufacturers. Further, fast fashion suppliers and manufacturers are also receiving requests from fashion retailers for natural, organic and sustainable materials, fibres and products. Case company respondents mentioned that this move introduced a big sustainability risk for their business but particularly for their brand image. Their argument is based upon two facts: first, from a target market perspective, for example, luxury fashion customers who are only buying for quality, history and heritage, but with the move towards fast fashion lines, there is a danger that the target market will perceive them as Primark. Second, their business model is built and suitable for luxury fashion lines and putting fast fashion lines into the operation, processes and supply chain will increase complexity, bottle-necks, costs and disruptions.

Further, the case companies do not have adequate fast fashion knowledge, sources and experience, leading to more sustainability risk. Fast fashion suppliers and manufacturers also expressed their concern about retailers' move towards organic and natural products. Retailers' requirements for natural and organic fibre and products require manufacturers to find new suppliers and manufacturers but also this will push costs and prices high. Furthermore, these natural and organic materials and fibres have to go through the same routes, processes and machines that were developed for non-natural manmade materials, fibres and products, hence leading to greater sustainability risk.

CC1 and CC5 respondents mentioned that the company is already operating in life-style garments; however, there are new requirements for top quality cotton, Merino wool and cashmere etc. On the other hand, shoes which are CC1's main business and known for their quality, authenticity and durability also raise concerns due to some retailers' requests for life-style shoes with more fashion content: *"Customers want newness and*

want it all the time, they want new colours, they want new fibres, they want new styles and those are the areas where we have most of our quality problems" (CC1 Quality Control Manager).

CC2 and CC4 respondents mentioned this move as one of their biggest sustainability risk because CC2 and CC4 have been known for more than 200 years as luxury fashion manufacturers, but the move to mixed manufacturing is not perceived as desirable from the perspective of the target market, which are luxury fashion buyers. Further, this move also increases costs, customer service issues and operational disruptions due to lack of knowledge, skills and resources to manufacture such lines. Respondents also highlighted the failure of their business model to react as quickly as fast fashion requires. Therefore, respondents at both companies were found to be advising management to refuse these requests: *"I would suggest people at the tope to stay with classic, we cannot respond with the lead times, we cannot respond fast enough for the fashion and our customer will not admire that either"* (CC2 Purchasing Manager).

CC3 and CC5 respondents mentioned that their customers asked for organic cotton products but their companies had never dealt with such fibre and therefore had no knowledge, experience and availability of raw material, nor were its supply chain partners in a position to help. CC3 respondents mentioned that customers were unhappy with CC3, creating a bad reputation as a fast fashion supplier that claims to be at the forefront of quality, innovation and service: *"Our major customer wants organic cotton socks for their Christmas launch, so we have to seek a new organic supplier and almost the whole order is on hold, the customer is shouting at us, there is nothing we can do about it; loss of business, loss of retail, loss of revenues, loss of goodwill, loss of faith and loss of reputation"* (CC3 Design Manager).

CC5, being a mixed wholesaler, sees this as a SCSRM strategy. Respondents mentioned that having a greater proportion of basic and classic lines and fewer fast fashion lines actually helps to reduce stock costs, discounts and margins. They further believe that keeping fast fashion lines is more risky due to their short life-cycle and the inability to predict fashion trends. Respondents' response is a strong message for the luxury fashion manufacturers that they should either strongly stick with what they do or better prepare

themselves for such a move: *"I manage risks by keeping fast fashion lines minimum, because they are risky, they change quickly, so I keep a 30-70 proportion, 30% fast fashion and 70% basic, so by this way I manage my stock, discounts and margins"* (CC5 Supply Chain Manager).

CC5 respondents mentioned something which supports the previous company respondents, that when CC5 places orders for basic or classic lines they also ask for some fast fashion lines with quick response and have them flown to CC5 rather than transported by sea or road: *"Actually a supplier that gets those big volumes (basic or classic) we may also ask for a few favours where they have to be faster, quicker and react to some small fast fashion volumes and fly them and get them kind of quicker"* (CC5 Design Manager): *"We prefer our partners to do multiple things, for example if someone is able to do basic, cool basic and fast fashion"* (CC5 Sourcing Manager). Respondents maintained that some suppliers and manufacturers show them samples, technology and processes to convince CC5 that mixed production is possible, but when it comes to bulk production, suppliers and manufacturers fail most of the time, which affects the company's image as a fast fashion and affordable online retailer. However, this argument brings us back to the previous company respondents (CC1, CC2, CC3 and CC4) who highlighted that their company does not have the knowledge, machinery and resources to manufacture fast fashion lines.

5.4.6 Stimulator of Innovation

The literature review chapter (Chapter Two) discussed various innovative mechanisms adapted by FSCs to manage their SCSR. Similarly, pilot interviews, Appendix Three, within-case and cross-case analysis, found three particular types of innovations which are stimulated out of the desire of the case companies in the UK fashion industry to manage their SCSR. Those are capacity development, new product and process development and building partnerships. Therefore, SCSRM has become a stimulator of innovation for the case companies. The following are sub-themes and their discussion.

Capacity development: There is a major move from the case companies to develop capacity in the whole supply chain from different perspectives. Some of the areas of

capacity development are raw materials, workforce, developing knowledge and hiring professionals and experts for different key positions.

CC1, CC2, CC3 and CC4 respondents mentioned that they are constantly training new workforce, cross-training their existing workforce and introducing new apprenticeships. CC1, CC2, and CC4 respondents mentioned that their companies had decided to produce their own raw materials, therefore, in negotiation with some farmers and livestock businesses. CC4 has bought some land in the border area of Scotland to grow a particular type of raw material and set up a small plant for a particular skill development, darning. Respondents from CC1, CC2, CC3 and CC4 mentioned that their companies are in negotiation with some UK colleges and universities to provide training and also sending managers to various workshops, seminars and formal events to build more knowledge, as well as hiring skilled professionals with global supply chain knowledge and expertise for key positions. Respondents further mentioned the use of techniques such as developing products over a range of machinery so that they can be interchanged and using different kinds of needles: *"We're also trying to manage capacity by fine needles, thick needles and then you have water cooling needles so that you can work longer hours on one machine and it will not over-heat"* (CC1 Quality Control Manager); *"Within our product category we're investigating the use of the same fabric on multiple products, one kind of colour, one kind of yarn, one kind of machine for different products, again, it will increase our capacity and give us economies of scale"* (CC2 Project Manager).

CC2 respondents also mentioned the development of an in-house training school. However, a major focus at CC2 is '*train the trainer'* initiatives, where managers are sent to a training school to get professional training so that they can train their workforce better in the company. CC2 and CC5 also building capacity through multichannel retailing, for example, CC2 converting its international agents into salespersons and CC5 is in negotiation with a large pharmacist to keep its concessions: *"We're in negotiation with the country's biggest pharmacist to keep our concessions and hopefully in a year you will see our stands on their shop floor"* (CC5 Supply Chain Manager). In terms of knowledge building, CC1, CC2, CC3 and CC4 respondents

mentioned that recently there has been a move to record data on various issues and to disseminate information among different departments.

CC2, CC3 and CC4 respondents further mentioned reclaiming nylon chips, cashmere, wool and cotton which are wasted in the manufacturing process: *"We have looked at the idea of recycling nylon; when nylon is extruded into lots of chips there is a lot of waste off the chips, and those could be picked up and recycled to put it back into production"* (CC3 Purchasing Manager); *"We're now reclaiming cashmere and wool; we have machinery that reclaims and puts it back into the system"* (CC4 Sourcing Manager).

New product and process development*:* SCSRM also stimulated innovations in new product and process development. Case companies highlighted some innovative advances in this area and outcomes in terms of cost savings, reducing lead time, managing quality problems, energy, legal and natural resources. Innovations in this area are use of natural materials, integration and knowledge sharing, shortening production times and automation.

CC1, CC2, CC3 and CC4 respondents mentioned a greater focus on recycling processes and product characteristics such as flammability, choke hazard, and toxicology considerations in future product lines. CC1, CC2, and CC4 respondents also mentioned the use of computer models to specifically look at colours, chemicals, yarn and materials which were used in the past but led to sustainability risk. CC1, CC2 and CC4 have recently developed different bridging points at different interfaces of their companies' processes and supply chain operations for effective and efficient information and knowledge sharing and integration: *"We have developed different bridging points where design talks to production, purchasing talk to sourcing, supply chain talks to production and operations and then generalists are involved in this process so that nobody overlooks any issue"* (CC1 Sourcing Manager).

CC1, CC2 and CC4 respondents mentioned that with the help of their suppliers, the product development and production time had been reduced substantially. CC2 and CC4 has also managed to reduce its energy costs by recycling energy by putting machines closer to each other and minimising gaps. CC2 respondents further mentioned the use of gel in dying instead of bleach to reduce water and energy costs. They also

highlighted an ongoing project, '*world class factory*' implementing the Toyota model, to reduce all types of waste in the factory as well as in the supply chain. The report generation process and the use of bar codes in manufacturing operations were also mentioned as an innovative process in order to spot bottle-necks in different operations and processes at CC2; *"I generate a report every morning for our production manager so he can look how this work has progressed the system"* (CC2 Site Manager). CC1, CC2, CC3 and CC4 respondents also mentioned the use of the OTIF principle for performance measurement at the factory.

CC3 respondents mentioned the use of grapefruit pulp as an anti-bacterial material instead of using silver, which is a non-sustainable chemical: *"We're trying to influence our retailer by offering interesting concepts and ideas, we looked at grapefruit and grapefruit pips that can be crushed and used as an antibacterial instead of silver, which is perceived as a non-sustainable substance"* (CC3 Design Manager). CC1, CC2, CC3 and CC4 respondents also mentioned on site packaging, reclaiming and recycling in the near future for more control and cost savings. CC3 and CC4 respondents further mentioned a better communication process with their suppliers and supply chain partners, making it simpler, numerical and counter verification oriented. CC2 respondents further mentioned innovations such as the use of multiple colour knitting machines, digitally transferable pattern cutters, through broadband, at its premises in the UK and laser cutters: *"We are also focusing on developments in processes; downstairs now we have a pattern cutter that can be translated digitally and sent through broadband over to China so they have the exact pattern that can be laser cut, so the whole idea is to accelerate the sampling process"* (CC2 Sourcing Manager). This enhanced automation helped CC2 to shorten production and lead times, accelerate processes and reduce costs.

CC1 and CC4 respondents mentioned increased communication, especially between commercial, design and production planning. CC4 respondents also reported change management process where people are encouraged and involved in improvements: *"We have established a communication stream to bring our interfaces between different functions much closer and we work collaboratively across our commercial, production and design groups"* (CC4 Project Manager). They further mentioned a unique process of

storytelling, discussed previously, as a way to ensure process consistency which reduces variances in planning and cost and hence enhances efficiencies.

CC5 respondents mentioned initiating greater customer involvement and engagement through their web-site. CC5 has accordingly made some changes at its web-site; *"so what we have found from the experience of other on line retailers is the interaction, customer engagement so he's (the owner) happy to add some more features on our web-site and has given me the responsibility to find the best ones"* (CC5 Design Manager). CC5 is further in negotiation with some testing agencies to increase supply chain visibility and manage quality issues at suppliers' factories.

Partnerships*:* The drive for SCSRM also promoted partnerships within garment supply chains. Although case companies were working with a large number of suppliers and manufacturers, however, every company has a specific number of suppliers as partners. Case company respondents agreed that it is essential in today's highly competitive and over concentrated market place to have partners to ensure business continuity by managing SCSR.

CC1 respondents mentioned that one of the major lessons from its survival and re-structuring was the need to have partnerships in place. Respondents from all the case companies asserted that partnerships are even more important for a brand, to sustain its image, quality and continuous supply. Respondents also believed that partnerships further help in overcoming problems of shortage of raw materials, skills, technology and costs. In their view, partnerships would enable the company to be pre-emptive and proactive; increasing its ability to control and manage sustainability risk. Respondents also mentioned the companies' initiatives for partnerships with Universities, R&D groups and industry working groups to manage sustainability risk. They believed that it is essential to have differentiation in order to compete and survive and one way to create differentiation is partnerships: *"It's very important to sustain brand, quality and service level and here partnerships come into place, and if we were not a brand then there was no need for having partnerships"* (CC1 Sourcing Manager).

CC1 and CC2 respondents mentioned that the improvements in reducing product development and supply chain lead times were due to building strong partnerships.

Respondents further highlighted partnership building initiatives such as helping suppliers, even financially, to get certifications, information technology development and providing information on different products and processes: *"The company has a partnership with a garment industry technology provider and the benefit of this partnership is that when they develop a new technology they pass it to CC2 for testing and on the other hand, if CC2 has an idea then that technology provider works on the idea to develop the relevant sort of machine or technology"* (CC2 Site Manager). CC1, CC2, CC3 and CC4 respondents also mentioned partnerships with technical skills provider colleges, chemical testing universities and suppliers R&D facilities. However, a negative side of having very strong partnerships was that on certain occasions, CC2's partners failed to meet expectations when CC2 was relying heavily upon them; this was especially the case with raw material providers.

CC3 and CC4 respondents mentioned that most of their certifications are based upon partnership concepts. CC3 respondents mentioned that, although the other two factories in China and Turkey are separate businesses, however, CC3 has a partnership with them which enables it to interchange and source products from them, ultimately helping CC3 to provide better customer service, to reduce lead times and costs: *"The process of interchanging products between factories is purely based upon partnerships; if we didn't have that common understanding and business sense of having partnerships, it wouldn't be possible, not at all"* (CC3 Sourcing Manager).

CC1 and CC2 respondents mentioned that partnerships at different supply chain operational levels differentiate their companies from other companies of their kind. CC2, CC3 and CC4 respondents further mentioned partnerships with some of their customers (retailers) which are helping them in terms of building a common vocabulary, retailer contacting suppliers and informing them to make purchases, as well as providing manuals and books for information sharing; *"I think some retailers also realised the benefits of partnerships so for example to build a common vocabulary some retailers give us a big book now, the big manual, I have seen them more and more come out now and that's reducing their risks and ours"* (CC4 Purchasing Manager).

CC1 and CC5 respondents mentioned partnering relationships with their supply chain partners in Asia who help CC1 and CC5 in relation to trends, sample production, sourcing and purchasing and distribution. CC5 respondents mentioned that they are very flexible with their partner customers in terms of payments and giving discounts on slow selling fashion lines; *"We're very flexible with our partners, our sole proprietorship partners, we offer them discounts, and we do accept their payment terms and accept their non-selling lines"* (CC5 Finance Manager).

5.4.7 Coopetition

The literature review chapter asserted the need for coopetition in order to survive and compete in a demand driven and volatile market place. It was noted that due to increased uncertainties, disruptions and SCSR, the case companies have embraced coopetition strategy as a mechanism to manage their SCSR. Therefore, coopetition has emerged as a driver which stimulated organisation to share capacity, information and build relationships whit multiple stakeholders even if they are competitors. Therefore, the changing characteristics of the fashion market have promoted coopetition within the companies of the UK fashion industry. The following are sub-themes and their discussion.

Capacity sharing*:* Time based competition, demand volatility, increased disruptions and retailer's pressures are some of the reasons that stimulated fashion companies and supply chains to share capacity. However, the case companies also believed high supply chain cost led fashion supply chains to benefit from each other's resources and leave competition for the shop floor or better customer service.

CC1 respondents mentioned that at a particular time they had to replace their plasticisers and during this replacement process CC1 used its competitors' plasticisers and hides. CC1, CC2 and CC4 respondents mentioned that their companies also get help from their competitors in the international market to source skilled labour force in case of full capacity. They further mentioned the use of machines, sharing raw materials, technology, warehouse, containers, testing facilities and other facilities at competitors' plants in different countries: *"We can't do everything on our own, especially on a global basis, so we talk to our colleagues and if they have those facilities we will ask*

their help; we will pay less and they will get what they have invested for" (CC1 Supply Chain Manager).

CC1, CC2, CC3 and CC4 respondents further mentioned that departments which were formerly perceived as competing each other are now sharing workforce according to demand. Respondents also suggested that problems of quotas, price fluctuations, raw material shortages, customs and distribution could be overcome by sharing materials and capacity with competitors: *"If China goes over their export quotas we could be left with fibres stuck in China indefinitely until the quotas have re-balanced so in the interim it's managed by sharing materials with competitors here in the UK or in our suppliers' markets"* (CC2 Sourcing Manager). CC2 and CC4 respondents also mentioned how in the past their companies managed to retain a cluster by offering people a business space in their premises: *"She decided to close her business but our owner offered her help (financial, machinery and skills), so she came here and then we did work for her so she set up her business now"* (CC4 Supply Chain Manager). CC4 also offers apprenticeships to other manufacturers and suppliers, reflecting the company's belief that the industry needs to pool resources.

CC3 and CC5 respondents mentioned that sometimes their companies derives benefits of economies of scale in terms of raw materials and some sub-processes by sharing capacity with competitors: *"We buy in bulk to get economies of scale, sometimes just to make sure we don't run out of supply but there are quite a lot of businesses in our product category so we always have someone to share to get rid of dead money"* (CC3 Sourcing Manager). CC3 and CC5 respondents also mentioned that their companies also use supply chain partners' facilities such as quality checks, storing products at their sites and arranging capacity for CC3 and CC5.

Information sharing and building relationships*:* Increasing sustainability risk and motives for costs savings, resource development, to avoid legal penalties, to be pro-active and to develop supply chain knowledge drove the case companies to information sharing, building relationships even with competitors and with organisations outside the industry. Case companies shared many practices and processes where they

demonstrated an increased move to sharing information and relationship building with competitors.

Respondents from CC1, CC2, CC3 and CC4 mentioned their companies have established close relationships and constantly share information with companies that were perceived as biased towards the industry or competitors in the past, such as NGOs, companies on CSR, external companies for testing and auditing, working groups in the industry and material and service providers. Respondents mentioned that this has helped them to manage issues such as legislation, working standards, ethics, national and international regulations, country laws and law on chemical use, testing and auditing, to develop supply chain knowledge, to identify sustainability risk and to design their mitigation strategies. Respondents further mentioned that, over the years, their companies have increased information sharing and relationship building with competitors who helped the company with market analysis and to re-shape its business strategies: *"I think information sharing with some of those forces, where it was once perceived as a threat is now considered essential, you will manage most of your risks beforehand"* (CC2 Project Manager).

CC3 and CC5 respondents maintained that fashion in general and fast fashion in particular requires having as many sources of information as possible, as this will help businesses to increase the number of options. This will further help their companies to explore alternatives and substitutes, ultimately minimising risks such as dependency and improving customer service: *"You need to talk to your partners, talk to your competitors, talk to those who have the slightest relevance to what you do; you need to be open minded; this will increase your options and then you can say yes, I can sustain, I can continue"* (CC3 Ethical Compliance Manager).

CC2 and CC4 respondents mentioned building relationships with some European premium quality manufacturers who were perceived as competitors in the past. Respondents mentioned that their companies are also trying to build strong relationships with small and medium companies of their type in the UK so that a common strategy can be developed for the government to help revive the UK textile and garment industry: *"As an industry we're joining together, whether we are joining*

together with our competitors or what could be perceived to be a competitor or not, it doesn't really matter, the fact is we are joining together to pool our resources in terms of trying to attract new people into the industry and get some help from the government" (CC4 supply chain manager). However, CC5 respondents expressed concern about sharing trends or design related information to some competitors of its size but admitted that CC5 also gets help from its competitors: *"He (supply chain manager) will pick up the phone and let them know which trend is in demand, which colour customers like; in the beginning I found it unusual but then I saw some of them coming to us and asking for some units to try"* (CC5 Design Manager).

This chapter provided cross-case analysis on supply chain sustainability risk management processes within the case companies. Further, major findings and their sub-themes were discussed. Each major finding and sub-theme was described along with the main arguments from the case company respondents. In order to ensure transparency and traceability, the researcher also provided verbatim interview extracts to ensure transparency, reliability and validity of the arguments and findings. In the next chapter, these findings will be compared and discussed in relation to existing literature to make generalisations or assertions (Creswell, 2007).

CHAPTER SIX: DISCUSSION OF FINDINGS

6.1 INTRODUCTION

This chapter highlights novel insights by linking findings from empirical data to the existing literature. The key assumptions that emerged through the empirical evidence in the previous chapter (cross-case analysis) will be compared to the literature review to examine relationships between the empirical research and theory, in order to further explore innovative ideas on the phenomenon of SCSRM in the context of the UK fashion industry. It is immensely important to mention that the empirical evidence has been generated from five case companies operating in the UK fashion industry. Therefore, emerging concepts will only be applicable to the case companies of the UK fashion industry.

SCSRM strategies described in the extant literature will be compared with the empirical evidence to explore whether the case companies are following any of the SCSRM strategies described in the extant literature or the companies have their own strategies. The next section examines and compares relationships between analytical generalisations, derived from the empirical data, and the existing literature to find out whether the major findings corroborate extant literature or contradict and possibly why. Based upon the discussion in this chapter, in the last section of this chapter, this research will design a typology for SCSRM for the participant case companies.

6.2 SUPPLY CHAIN SUSTAINABILITY RISK MANAGEMENT PROCESS

The literature review (Chapter Two) reviewed extant literature on the supply chain risk management process, revealing that different researchers suggested different stages and types of supply chain risk management processes. Similarly, Chapter Two also highlighted different kinds of sustainable supply chain management frameworks. Chapter Two further described different strategies and processes to integrate and manage supply chain sustainability. However, the empirical evidence from the five case companies indicated that none of the case companies had a manager or person specifically looking at supply chain sustainability risk management. The only exception was CC4, which had a sustainability champion and CC1, which had a lawyer for guidance

purposes. SCSRM responsibilities were embedded into the jobs and responsibilities of the managers and mainly lay with the board of directors. The empirical evidence partly supports Christopher et al. (2011), who found that risk management responsibility is mainly vested with the procurement, sourcing and supply chain functions. However, the empirical evidence revealed that purchasing is more in tune with risk management, while sourcing, ethical compliance, supply chain functions are involved in both sustainability and risk management.

Similarly, the empirical evidence demonstrated that none of the case companies had a formal SCSRMP. However, almost all the case companies had ad hoc plans, should anything go wrong, which mainly explained points of contact. This empirical evidence calls into question the existence of the large number of sustainability management and risk management frameworks in the literature. It also raises a question about the intention of the case companies; why do they lag behind or ignore such survival threatening issues and not have a sound SCSRMP? This research also explored answers to these questions, which are discussed in subsequent sections of major findings.

Probing into the phenomenon of SCSRM through multiple case study, it was found that although the case companies had limited and narrow SCSRM embedded into corporate strategy and in the jobs and responsibilities of managers. Most of the managers and directors relied on experience, gut feelings, watching and listening to others in order to make supply chain sustainability risk management related judgements, decisions or for contingency planning. However, managing costs and avoiding financial losses are major priority for SCSRM. This supports literature that a mix of quantitative and qualitative strategies can be used for SCSRM and further within qualitative a mix of qualitative approaches to SCSRM can be used (Simon et al. 1997; White, 1995; Tang and Musa, 2011, Liu et al. 2011; Manuj and Mentzer, 2008). Hence the empirical evidence supports the literature discussed in Chapter Two, which claims that risk is a subjective construct (Peck, 2006) and depending upon the nature of risk a suitable strategy can be used to mitigate it (quantitative, qualitative or mix). Empirical evidence further showed that the case companies were making substantial progress and improvements in SCSRM by implementing new strategies. However, the final decisions were still made much more subjectively and based upon judgments and gut feelings.

A plethora of literature was reviewed in Chapter Two which discussed risk management and sustainability management strategies. It supports empirical evidence that SCSRM is dynamic process which needs constant changes, adjustments and modifications, depending upon the nature of the market, industry, geographic area, organisational structure, size, strategy, culture or the internal or external environment in which the organisation has to manage its supply chain sustainability risk (Harland et al. 2003; Smallman, 1996; Christopher and Holweg, 2011; Gaudenzi and Borghesi, 2006; Zsidisin et al. 2000).

Despite all the studies on risk and sustainability management in Chapter Two, the existing accounts did not investigate the phenomenon of sustainability risk in the context of the UK fashion industry, which is shrunken in size, geographically spread, complex and invisible and hence more prone to supply chain sustainability risk. Therefore, this research provided novel insights in this regard by exploring the phenomenon of sustainability risk and SCSRM in the UK fashion industry.

The next sections will compare empirical evidence of major findings with the extant literature to examine relationships.

6.3 ORGANISATIONAL RESOURCES

Four types of organisational resources were found as sustainability risks and barriers to managing SCSR in the case companies: technically skilled workforce, nature of basic raw material, organisational size and outdated technology. The following is a comparison of these organisational resources with existing literature.

Technological aspects have been discussed in fashion supply chain literature from two perspectives. First, ongoing technological innovations in the garment and textile industry in different operational areas such as CAD (computer-aided-design), laser cutting, flexible manufacturing, virtual design and sampling, SKU level scanning, use of EDI, JAN barcodes and PLM (product life-cycle management) (Taplin, 2006; Fernie and Azuma, 2004; Şen, 2008; Forza and Vinelli, 1997). Second, retailers' pressure on supply chain partners to upgrade technology (Masson et al. 2007; Tokatli et al. 2008), such as provide reduced volumes and greater variety, be responsive and agile and ship

garments with pre-retailing elements, ready to the shop floor. This second aspect also has a substantial impact on small and medium sized manufacturers' efficiency due to lack of technology, and availability of trained staff.

Retailers' pressure is more stringent for small suppliers and manufacturers because of the lack of resources and retailers' commitment, due to availability of sub-contractors, intermediate and integrated service providers, because it is much easier for them to achieve economies of scale and pool their resources to attract large EU and US retailers (Masson et al. 2007). Further, Masson et al. (2007) highlighted that the availability of skilled, trained, and knowledgeable workers, huge capital investment and R&D laboratories, enables integrated and full service providers to fulfil retailers' requirements at short notice, provide cost and price benefits, and be responsive at the same time. However, for SME suppliers and manufacturers it is not possible to do all that, simply due to lack of resources, trained and skilled workforce and technology.

Further, in Chapter Two it was mentioned that technological innovations, trained and knowledgeable workforce and resources are enablers of getting big and repeat orders, providing better customer service, creating differentiation, responsiveness, effective and efficient communication and information sharing, reducing lead times, increasing visibility and control, prerequisite for foreign market expansion and a means to survive in a highly competitive and volatile market (Tokatli et al. 2008; Lu et al. 2011; Taplin, 2006; Barnes and Lea-Greenwood, 2006; Moore and Burt, 2007). Researchers (Taplin, 2006; Bruscas et al. 1998; Sels and Huys, 1999) have also reported that after the decline of the UK textile and garment industry the remaining companies, especially large firms, specifically focused on technological innovations, cross-functional teams and multiskilling their workforce to enhance productivity, increase quality and survive (Taplin, 2006; Jones and Hayes, 2004). However, UK retailers' continued interest in outsourcing and off-shore manufacturing left UK manufacturers and suppliers with less incentive to invest in technology and to continuously provide worker training (Taplin, 2006). Therefore, a focus on technological innovations, technical textile production and the use of high quality resources such as wool or fine animal hair proved the main strategies to counter import penetration and survival challenges (Taplin, 2006; Jones and Hayes, 2004).

The importance of skills is also highlighted in terms of alliances and Wigley and Provelengiou (2011) argued that complementary skills are essential for a successful alliance because complementary skills can create synergetic benefits for the parties in an alliance. Similarly, Roza et al. (2011) explored offshoring drives of large, medium and small firms from three perspectives, cost, resources and governance, and reported that cost drivers are most important for small and large firms, while resource drivers are most important for medium and large firms. Further, entrepreneurial motives are important for medium sized firms along with a preference for near-shoring. On the other hand, small firms mostly offshore competence-exploring activities, while large firms relocate competence-exploiting activities.

Chapter Two also highlighted the role of skills, technology, raw materials and size in terms of supply chain risk management. For example, Vilko and Hallikas (2011) categorised lack of skills as an operational risk and argued that lack of skills, motivation among workforce and information sharing and communication lead to supply chain operational risks. On the other hand, Zsidisin and Ellram (2003) maintained that suppliers' inability to adapt to technological or product design changes could have detrimental effects on cost and competitiveness of the customer. Gibb and Buchanan (2006) argued the need for an appropriately trained and skilled staff for business continuity management. Miller (1992) advocated a flexible workforce and skills to manage uncertainty and enhance organisational flexibility. Rao and Goldsby (2009) emphasised that decision makers' knowledge and skills to understand the totality of the risk framework and issues involved are critically important for SCSRM. Further, Tang and Musa (2011) and Handfield et al. (1999) proposed a production capacity risk category, which includes technological, skills and quality capacities. In SCRM literature technology and skilled workforce risks are also highlighted by Peck (2006), Christopher and Lee (2001) and Trkman and McCormack (2009).

Similar to FSCs and risk management, sustainable supply chain management literature also described the impact of technology, firm size, availability of skilled workforce and raw materials on supply chain performance. The main technological advancements mentioned in sustainability literature for their positive impact on sustainability and eventually on firm performance are recycling, closed-loop and green production systems,

waste management technologies, green or eco-design technologies, emission reduction transportation systems, resource and energy conservation technologies, refurbishing, repair and remanufacturing, and process-and-product-integrated environmental technology development instead of end-of-pipe technologies, (Grant et al. 2015; Winkler, 2011). Further, it is also noted that companies have increased their technological investments substantially over the last few years, partly due to legislation (Ho and Choi, 2012). Firm size is also an interesting topic of discussion among many sustainability researchers. For example, Spence and Bourlakis (2009) maintained that smaller firms are unable to make substantial sustainability investments due to lack of resources and are subject to discrimination in supplier selection criteria from larger buyers or retailers, despite the fact that smaller firms are more likely to offer more innovative and sustainable product and services.

The empirical evidence demonstrated that the case companies were experiencing sustainability risk due to lack of organisational resources (section 5.4.1). Therefore, the findings of this research strongly support the extant literature which maintained that organisational resources are major barriers to managing risks and sustainability of fashion supply chains. On the other hand, this research provided interesting insights by exploring four critical resources, necessary to manage SCSR of the UK fashion industry.

However, the most interesting and novel insight provided by this research is regarding the nature of basic raw material. According to the researcher's knowledge, no previous reference was found in the literature in relation to describing the dynamics of the nature of basic raw materials and how it could be a sustainability risk for fashion supply chains, particularly for the UK fashion industry. Researchers such as Carter and Rogers (2008), Svensson (2007) and Ellram and Cooper (1990) provided a partial account of commodity-like products in sustainability and risk management perspectives in isolation. Furthermore, this finding also supports the theory of Dynamic Capabilities to sustain competitive advantage in a highly volatile and unpredictable market place by developing dynamic capabilities of skills and the use of advanced technology, access to scarce resource and exploit opportunities for growth (Teece et al. 1992; Teece et al. 1997; Wang and Ahmed, 2007 and Eisenhardt and Martin, 2000). As described in Chapter Two, the DC view integrates market dynamisms of market speed and unpredictable

changes affecting business ability to compete in the marketplace. In today's dynamic and volatile market place, competitive and sustainable advantage lies in a firm's ability to quickly configure and relocate resources according to the evolving market conditions and at this interface DC enables firms to do so by integrating distinctive competence elements of organisational routines, architectural knowledge, core competencies and capability, rigidity and combinative capability, to enable firms in dynamic markets to create and sustain competitive advantage (Wang and Ahmed, 2007).

6.4 GROWTH OF FAST FASHION

Growth of fast fashion was found as a sustainability risk and a barrier to managing SCSR in the case companies. Four major concerns were found with regard to growth of fast fashion: disappearance of clusters, increased supply chain complexity, consumer behaviour and increased pressure from retailer. The following is a comparison of these barriers with existing literature.

Disappearance of clusters: The phenomenon of fast fashion and its different aspects has been discussed in the literature review, Chapter Two. However, no strong reference was found in the literature regarding its impact on the disappearance of clusters and ultimately increasing sustainability risk to the UK fashion industry. This finding of this research (section 5.3.2) partially corroborates the ideas of Tokatli, et al. (2008), Masson et al. (2007), Jones and Heyes (2004) and Taplin (2006), which were the subject of discussion in Chapter Two. However, the major limitation of the earlier studies was their limited focus. For example, Tokatli et al. (2008) and Masson et al. (2007) focused deeply on the emergence of new markets, development of the existing ones in the Far East and the role of intermediaries and service providers.

In contrast, Jones and Heyes (2004) and Taplin (2006) focused on the decline of the UK textile and garment industry and attributed this to trends such as globalisation, outsourcing and trade agreements. Jones and Heyes (2004) limited the *textile cluster* concept by neatly eliminating geographical concentration of the textile industry, which is a prominent element of the cluster concept proposed by Porter (1985) and mentioned by the case company respondents (section 5.3.2). Taplin (2006) also highlighted the emergence of new textile clusters in the UK (service providers), after the industry

declined, and their importance in managing functional interdependencies in the clothing supply chains. Therefore, the findings of this research are consistent with Porter (2000) from a conceptual point of view. However, this study makes further contribution by arguing that if the companies in the UK fashion industry are to manage their SCSR or the Government wishes to revive or re-build a viable textile and garment industry, which is a matter of interest currently as mentioned in chapter three (section 3.6), then an immediate focus on cluster development could be quite helpful. Although the findings contradict with Jones and Hayes (2004) and Taplin (2006) from a conceptual point of view, however they corroborate them a great deal in terms of the importance of textile and garment clusters. Therefore, having those small clusters that perform intermediate operations such as washing, dyeing, spinning, packaging and finishing etc. could significantly reduce lead times, and costs, improve quality and overall reduce SCSR.

Increased supply chain complexity: Chapter Two reviewed extensive literature on supply chain complexity and highlighted its different drivers. For example, long and extended supply chains, short life-cycle products, large number of suppliers, increasing number of operations, cultural, structural and regulatory issues, to mention a few. The empirical evidence in this study (section 5.4.2) revealed similar issues of supply chain complexity to those mentioned in chapter two, reported by earlier researchers (Christopher et al. 2004; Masson et al. 2007 and Harland et al. 2003). Hence, the findings are consistent with previous studies on supply chain complexity in general and fashion or clothing supply chain complexity (Christopher et al. 2004; Masson et al. 2007) in particular.

However, the findings of this research do not support the previous research suggesting that retailers without factories (Tokatil, 2008) are key drivers of global sourcing, outsourcing manufacturing operations and globalisation and hence are main sources of SC complexity. One possible explanation could be that the previous researchers such as Masson et al (2007) and Tokatil (2008) only focused on UK retailers and their off-shore service providers, instead of exploring such issues from the UK fashion industry context. Therefore, this research made a valuable contribution by providing novel insights on fashion supply chain complexity in the UK fashion industry context and highlighting

that complexity prevails regardless a retailer is a manufacturer or vertically integrated or not, as long as it is involved in international operations for whatever purpose and that complexity is a supply chain sustainability risk as well as a barrier to managing it.

Consumer behaviour: The literature review (Chapter Two) highlighted different aspects of consumer behaviour regarding their preferences for sustainability issues but with a huge difference in their attitude and behaviour. Consumers are demanding sustainability considerations in garment supply chains but their demand is not translated into their own purchase behaviour and they are still preferring fashion content, style and price (Gam, 2011). The extant literature further highlighted two opinions, the first view holds that today's consumer is more aware, knowledgeable, ethical, willing to pay more for green or organic products and wishes to see companies behaving according to high standards of environment (Bhardwaj and Fairhurst, 2010; Anderson and Anderson, 2009). From such a viewpoint, ignoring environmental and social issues would only lead to greater risks for the companies (Bhardwaj and Fairhurst, 2010). Further, technological advancements, greater power of interest groups, greater visibility and knowledge and awareness have enabled consumers to exert more pressure for green options and consequently increased risks for those businesses that ignore such issues (Anderson and Anderson, 2009; De Berito et al. 2008).

The second argument maintains that consumers do not care about ethics, the environment and ecological issues, despite having knowledge about the working practices of clothing manufacturers and retailers (Tokatli et al. 2008; Jones and Hayes, 2002; Hines, 2001; Joergens, 2006; Gam, 2011). There is a large body of literature (Tokatli et al. 2008; Jones and Hayes, 2002; Hines, 2001; Joergens, 2006; Gam, 2011; Bray et al. 2011) documenting that for fashion, consumers will consider price and style before ethics and environmental issues. Therefore, findings corroborate with extant literature that consumer pressure is more on price, trends or style and availability rather than ecological or organic aspects of the products. Further, empirical evidence support extant literature that sustainability has strategic implication; it must deliver clear value to the business (e.g. cost reduction) as well as to society otherwise companies restrain engaging sustainability initiatives (Grant et al. 2013). Companies do many of the green

options (CC2) as they see direct cost benefits e.g. increased efficiency, compliance with legislation, avoiding risk of fines, reduction in waste etc. (Grant et al. 2013).

Increased Pressure from Retailers: The literature review chapter highlighted power dynamics in the fashion supply chains. The review of literature also highlighted how the emergence of the phenomenon of fast fashion stimulated power balance expectations from retailers to a more balanced supply chain. However, researchers such as Tokatli et al. (2008) and Crewe and Davenport (1992) highlighted that soon these expectations faded and retailers managed to maintain power and to shift and transfer more pressures upstream in the supply chain, especially on manufacturers and vendors. Such a trend and the most important pressure areas identified in literature are regarding technology up-gradations, certifications, price cuts, reduce costs, preference for margins, sudden change in orders, non-cooperative behaviour, no repeat orders, contribution in design and product development and constant sampling, shipping with pre-retailing, smaller quantities of more varied lines (Bruscas et al. 1998; Bruce and Daly, 2006; Gereffi, 1996; Fernie, 2009; Tokatli et al. 2008; and Taplin, 2006).

The empirical evidence (section 5.4.2) is consistent and support previous research on this topic. It is somewhat surprising to see that retailers have the same attitude and exert the same pressures with their home (UK) manufacturers and suppliers as they do with their supply chain partners around the globe. No differences were found between existing literature on this topic in a global context (Tokatli et al. 2008; Crewe and Davenport, 1992; Masson et al. 2008) and the research findings. This finding also supports literature suggesting that retailers are ignoring their own continuity by ignoring the continuity of their supply chain partners (Tokatli et al. 2008; Grant et al. 2013). As Tokatli et al (2008) reported that one of Hugo Boss's suppliers went into administration and caused substantial problems for the retailer. Hence, this research provided novel insights on how retailers exert pressure and pose sustainability risk to their home based supply chain partners, thereby creating sustainability risk for themselves as well as for the supply chain partners. Although all the above mentioned researchers and the literature review chapter have documented such issues of retailer power many miles away from the home market, this research has filled a gap by providing insights from five fashion companies of the UK fashion industry.

6.5 ORGANISATIONAL CULTURE

Organisational culture was found as a sustainability risk and a barrier to managing SCSR in the case companies. In organisational culture, two barriers were found as major sustainability risk for the case companies (section 5.4.3): resistance to change and lack of communication and information sharing. The following is the comparison of these barriers with existing literature.

Resistance to Change: Organisational culture is a long debated and well established concept in business management. Similarly, the discussion of organisational culture in supply chain management is also not a new phenomenon. Further, the research community has highlighted the importance of organisational culture in fashion supply chains (Chapter Two). Examples include M&S's difficulty in changing its supply chain culture and ways of work from ready-to-wear to more fashion content (Tokatli et al. 2008), organisational culture as a core competency (Bruce and Daly, 2006), its importance in terms of market orientation (Mazaira et al. 2003), its impact on supply chain complexity (Masson et al. 2007), as a barrier or driver in implementation and success of a new system or supply chain structure and resistance to change (Christopher and Towill, 2011, Kotzab, 2000; Lu et al. 2011; Moore et al. 2004; Brucas et al. 1998) and causing strategic drift (Johnson et al. 2008). Overall, supply chain researchers agree on the importance of organisational culture in managing risk and sustainability, and maintaining an agile and responsive fashion supply chain.

The findings of this research (section 5.4.3) are consistent with those who specifically highlighted resistance to change (Christopher and Towill, 2011, Kotzab, 2000; Lu et al. 2011; Moore and Fernie, 2004; Brucas et al. 1998) and global supply chain cultural problems of time zone, language and structures (Christopher et al. 2011; Liu et al. 2008; Trent and Monczka, 2005; and Manuj and Mentzer, 2008). Contrary to expectations, no correspondence was found between the empirical findings and the extant literature on organisational culture that explored the decline of an industry such as the UK fashion industry and its subsequent impact on the organisational culture becoming as SCSR for the UK fashion industry. Although researchers shed light on the decline of UK garment industry (Taplin, 2006, Johns and Hay, 2004), however, existing accounts overlooked

organisational culture and left it unexplored. Therefore, this research provided valuable insights on how organisational culture can be a major barrier as well as a major sustainability risk for the UK fashion industry, which has shrunk in size and is overly dependent upon its existing workforce. The value of this contribution is further enhanced due to the fact that this research has explored organisational culture and its implications for the UK fashion industry as a unified concept, instead of looking at organisational culture from the isolated lenses of risk and sustainability.

Lack of communication and Information Sharing: The literature review, Chapter Two, also highlighted the importance of communication and information sharing, for example, in fashion supply chains for quick response, trend identification, agility and responsiveness, for visibility and control, supplier management and as characteristics of fashion supply chains which are network based and virtually integrated (Christopher et al. 2007; Masson et al. 2007; Barnes and Lea-Greenwood, 2006 and 2010). In risk management, communication and information sharing facilitates proactivity, as a risk mitigation strategy. Communication and information sharing with multiple stakeholders offer a broader approach to design a product, process and SCSRM strategies. SCRM literature also emphasised that the increased level of communication and information sharing needed for supplier related risks, especially supplier responsiveness, innovation and flexibility (Choi and Krause, 2006; Treleven and Schweikhart, 1988; Larson and Kulchitsky, 1998; Handfield and Bechtel, 2002). Overall, SCRM literature (Tummala and Schoenherr, 2011; Christopher et al.2011; Christopher and Lee, 2004) favours communication, information sharing and close relationships for proactive risk management, to manage chaos risk, enhance responsiveness, reduce the bullwhip effect, promote flexibility and respond to market signals more swiftly.

Similarly, with regard to sustainability drivers and barriers, information sharing and communication can facilitate integration sustainability initiatives, whereas lack of it can prove a major barrier. Sustainability literature also emphases information sharing and communication with consumers to promote and educate consumers regarding different non-sustainable practices within the fashion supply chains. Sustainability literature also highlights the importance of inclusion and information sharing and communication

with varied stakeholders for reputation purposes, should any catastrophic event happen knowingly or un-knowingly (Gam, 2011; Belleau et al. 2001; Grant et al. 2015; Walker and Jones, 2012; Bonn and Fisher, 2011; Carter and Rogers, 2008; Anderson and Anderson, 2009; Seuring and Muller, 2008; Jones et al. 2011).

A general trend can be noticed in the literature, which is to enhance communication and information sharing between supply chain partners for quick response, integration and efficiency reasons. However, the supply chain researchers overlooked the internal environment of a firm from a communication and information sharing perspective and its link to the organisational culture, although it emphasised issues from internal integration and technology implementation. Hence, empirical evidence (section 5.4.3) supports the literature and the above researchers who argue that lack of communication and information can increase risks, and can impede sustainability integration and to design and maintain a responsive and agile fashion supply chain.

6.6 MANAGEMENT STRUCTURE

Management structure was found as a sustainability risk and a barrier to managing SCSR in the case companies. In management structure, two barriers were found as major sustainability risk for the case companies (section 5.4.4): disintegration and control orientation and lack of knowledge about SCSRM. The following is the comparison of these barriers with existing literature.

Disintegration and Control Orientation: The literature review chapter two provided a comprehensive commentary on supply chain integration and it was reported that internal integration is necessary and leads to external integration. A notable study in this area is that of Bruce and Daly (2006), who argued that internal relationships are equally important as external and further reported findings from three case studies that the fashion companies had integrated internal processes whereby buying, merchandising and design interfaces were closely linked, enabling fast decision making about collections. Only the merchandising function was working separately, but found to be closely interlinked. Christopher and Towill's (2001) notion of virtual organisations, which are linked and integrated thorough information sharing and communication for greater agility, was also discussed. They maintained that managers should change the

status quo and act as internal and external change agents for virtual and agile supply chains. Further in the literature review, prominent arguments regarding integration and control were discussed, notably those of Reve (1990) and Richardson (1996). Reve (1990) maintained that the key issue in vertical integration is control rather than ownership, because a firm needs a higher level of control over assets and capabilities in the value chain to coordinate its activities and to achieve its goals efficiently and effectively. However, Reve (1990) maintained that ownership is just one aspect or form of control which is more risky in an unpredictable and volatile environment such as fashion. Tying resources and capital investment can lead to risks of losing value due to obsolescence and management risks when technology and the market change. Therefore, Reve (1990) suggested that the benefits of vertical integration can be obtained more efficiently through vertical agreements and forming or withdrawing from alliances, than actual ownership.

Richardson (1996) disagreed with Reve and favoured vertical integration and ownership in the fashion industry, arguing that it's volatile nature and the need for control to introduce new technology and coordination mechanisms necessary for rapid response in fashion, makes vertical integration more attractive. However, Richardson (1996) agrees with Reve (1990) in terms of major drawbacks of vertical integration from the perspective of management difficulties and reduced performance incentives. Therefore, Richardson (1996) proposed a higher degree of coordination among supply chain partners, investment in information technology at each stage and integrated planning and decision making, which will also help in effective and efficient implementation of quick response within the fashion supply chain. Dutta (2003) described Zara's success, attributed to its ability to coordinate internal and external activities all along the supply chain, enabling Zara to be innovative, flexible and responsive and have competitive advantage. Dutta (2003) maintained that many companies do not yet have close interaction and collaboration and different functions are not in touch, despite sitting or being located very close to each other. Overall, supply chain researchers (Barnes and Lea-Greenwood, 2006; Brun and Castelli, 2010; Christopher et al. 2004; Fernie and Azuma, 2004; Dutta, 2003) emphasised the need for internal and external coordination

and integration and reported that there is increasing management commitment to supply chain integration.

Similarly, SCRM literature also focused on the internal integration and control orientation from a management perspective. For example, it was mentioned in chapter two that the reason most companies do not invest in SCRM programmes is due to leadership, because management gets no reward or credit for fixing problems that never happened (Tang, 2006). Herbane et al. (2004) proposed management attributes to get the most out of a business continuity programme. Peck (2006: 139) argued that *"managers by definition manage what is within their own sphere of responsibility and locus of control"*. She goes on to state that no one firm, manager or person manages the whole supply chain end-to-end; instead they manage parts or aspects of it. Although managers are operational specialists or CEOs having responsibility for shareholder value and corporate governance, each will perceive supply chain risk subjectively through the lens of their own goals and performance measures. On the other hand, Wong and Boon-itt (2008) also asserted the need for close interaction between functions such as procurement, production, logistics, marketing, sales and distribution for internal integration.

Looking at the empirical evidence in the light of the above mentioned literature, the empirical evidence did not yield any support for Bruce and Daly's (2006) study, because no close integration or coordination were found in different departments. Christopher and Towill's (2001) notions of virtual organisation for agility and managers as change agents were also not found. The empirical findings strongly support Reve's (1990) idea that the key issue in vertical integration is control rather than ownership and that ownership is just one aspect or form of control, which is more risky in a volatile and unpredictable environment, because most of the case companies are vertically integrated and faced greater management risks. No support was found for Richardson's (1996) claim that vertical integration can enable companies to meet fashion requirements of change management, responsiveness and overall more control. The findings from the case studies provide strong support for Dutta's (2003) view that, although internal integration and coordination is essential for greater responsiveness, flexibility and innovation, many companies do not have close interaction and

collaboration and different functions are not in touch, even when in close proximity. No support was found for the suggestions made by Herbane et al. (2004) and Wong and Boon-itt (2008) in terms of internal integration and coordination for process integration, close interaction, supply chain continuity and risk management because, within the case companies, processes were disintegrated and working in isolated silos. However, strong support was found for Peck's (2006: 139) argument on the subjective nature of risk that managers' focus on what is within their own sphere of responsibility and locus of control and each manages only parts or aspects of the supply chain. On the other hand, findings strongly support Christopher and Lee (2004) and Christopher and Holweg (2011) who mentioned that control measure often results in rigidity and suitable for repetitive activities and suggested the use of structural flexibility instead of control.

Therefore, the empirical findings provided novel insights on the internal environment of the case companies and maintain that internal disintegration and control orientation will become a sustainability risk. Hence, it is imperative to bridge gaps, bring different functions closer and make it easy for everyone to interact and collaborate for effective SCSRM.

Lack of Knowledge: Knowledge is increasingly mentioned as an organisational capability having its roots in the resource based view and more recently the dynamic capability view. The importance of knowledge is also mentioned in fashion supply chains literature. For example, Moore and Burt (2007) proposed that skills and managerial knowledge are specific assets unique to a fashion retailer and key requirements for international market expansion. Masson et al. (2007) highlighted challenges to global fashion manufacturers such as poor communication, poor management education and little management knowledge of how the clothing industry operates beyond their own business. They further maintained that these challenges are even more survival-threatening for small garment manufactures due to the lack of knowledge, skills and capabilities which are possessed by powerful retailers, intermediaries and integrated service providers.

In terms of sustainability Carter and Rogers (2008) specifically shed light on knowledge management and maintained that knowledge is a well-known and widely accepted

resource, which implies the ability of firms to effectively learn and implement changes based upon what they have learned. They posit that organisational learning occurs when knowledge is accumulated over time and learned by organisational members. Furthermore, knowledge is stored in organisational procedures and rules but also informally in norms and social and communication patterns, making it a dynamic capability and resource (Teece et al. 1997). Carter and Rogers (2008) described that knowledge and human capital resources consist of training, experience, social relationships and insights of managers and workers in an organisation. Carter (2005) extended the resource based view to supply chain resources and maintained that as supply chains are external to a firm, they are in many ways less transparent and extremely difficult to imitate. Integrating the sustainability debate, Carter (2005) further argued that learning occurs between buyers and suppliers around environmental and social activities. This in turn has a strong positive influence on supplier performance and reduces operating costs in supply chain relationships, leading to economic sustainability.

Similar arguments were found in the SCRM literature. For example, Rao and Goldsby (2009) reported that the overall risk profile of an organisation consists of a number of factors, for example, managers' detailed knowledge, experience, skills, information seeking behaviour, bounded rationality and institutional rules and procedures. This is why Vilko and Hallikas (2011) argued that in order to deal with complexity and disintegration and to design a SCRM strategy; managers should first understand the supply chain and sources of uncertainty, to have a network-wide approach to assess supply chain vulnerabilities.

Examining the degree of consistency between literature and the empirical evidence, it is found that the case-study companies have not yet learned much from a knowledge management perspective and therefore are not able to obtain all the benefits mentioned in the literature (Carter and Rogers, 2008; Carter, 2005; Moore and Burt, 2007). Further, the empirical evidence strongly supports Masson et al.'s (2007) view that major challenges such as poor communication, poor management education and knowledge, and management's limited perspective on how the clothing industry operates can seriously threaten supply chain continuity. The observation of a large number of risk

factors in the case companies also supports Rao and Goldsby's (2009) arguments that an organisation's overall risk profile is comprised of a number of factors, particularly management characteristics.

Thus, the empirical evidence provides novel insights by exploring that, on the one hand, knowledge is a dynamic capability and on the other, it is sustainability risk, due to lack of it. Therefore, it is argued that information sharing, learning, developing knowledge and sharing it between different operations/departments and ultimately with supply chain partners can help the case companies to manage SCSR pro-actively, effectively and efficiently.

6.7 SAFEGUARDING BRAND REPUTATION

Two areas of concern were found as motivational factors for the case companies to safeguard their brand reputation, lack of supply chain visibility and control and move to a mixed manufacturer or supplier (section 5.4.5). The following is a comparison of these motivational factors with existing literature.

***Supply Chain Visibility and Control*:** There is extensive discussion in the literature on brand reputation and its importance for fashion supply chains (Brun and Castelli, 2008; Bridson and Evans, 2004; Bruce et al. 2004). It is reported that brand image enables companies to get competitive advantage by charging premium prices, expresses value by linking emotional and intangible characteristics of a product and can be a tool for foreign market expansion (Brun and Castelli, 2008; Bridson and Evans, 2004; Bruce et al. 2004). However, there are serious threats to brand reputation due to lack of supply chain visibility and control, which is partly due to the globalisation of fashion supply chains, outsourcing and off-shore manufacturing, fashion supply chain practices of using sub-contractors and service providers and the use of the open market for raw material and processes (Masson et al. 2007; Christopher et al. 2004; Lee, 2004). Further, authors have mentioned the use of technological advancements and techniques to enhance supply chain visibility and control such as RFID, VMI, and CPFR etc. (chapter two). Similarly, literature also mentioned the use of information sharing and communication, integration, coordination, being vigilant, audit, visits and surprise checks to ensure ethical practices within the supply chain. In particular, Masson et al.

(2007) mentioned the use of intermediaries and sub-contractors for capacity, short lead times and cost savings. However, they found in their study that in most cases, retailers had no knowledge of who manufactured the garments, increasing retailers' vulnerability to scandals and sustainability risk. Tokatli (2008) and Tokatli et al. (2008) also reported the use of sub-contractors by the manufacturer or supplier to manage capacity but without retailers' knowledge and consequent impact on brand reputation.

Chapter Two also reviewed extant literature on supply chain visibility and control leading to SCSR and making SCRM a challenging task. Most of the SCRM literature focuses on the issues of visibility and control, highlighting the reasons for this and making suggestions to enhance visibility and control. For example, long and complex supply chains decrease visibility and make risk identification difficult (Vilko and Hallikas, 2011), most companies have only internal operational visibility and risk identification and are prone to disruptions due to lack of external visibility (Tang, 2006; Harland et al. 2003), outsourcing and off-shore manufacturing lead to reduced visibility and control at different supply chain tiers and subsequently pose supply chain continuity and reputation risks (Zisidisin et al. 2005; Krause and Choi, 2006; Tummala and Schoenherr, 2011), and lack of confidence, and buffers, inventory costs and increasing risks due to lack of visibility and control (Christopher and Lee, 2004). Chapter Two also highlighted various mechanisms for enhancing control (Christopher and Lee, 2004) and visibility (Peck, 2006; Christopher and Holweg, 2011, Tang, 2006). However, what was missing in the SCRM was the need for exploring how visibility and control correlate with brand reputation, as it was noticed that in SCRM literature, discussion is confined to the reputation risk. In contrast, the multiple case studies in this research explored the correlation between supply chain visibility and control and its ultimate impact on brand image.

The sustainability literature also highlighted the importance of brand and its vulnerability, due to the lack of visibility and control over supply chain operations. For example, Ellram (2012) maintained that sustainability presents an opportunity to build goodwill among environmentally conscious consumers and to enhance brand reputation. Further, Ho and Choi (2012) reported a survey conducted by Ernst & Young which shows that 71 percent of the companies questioned believed that reputation and brand is

the area where green efforts will have the highest impact from perspectives, opportunities and challenges. The role of technology is also described in enhancing the visibility of supply chain operations to consumers, ultimately building pressure on the supply chain to manage sustainability issues from end-to-end (Anderson and Anderson, 2009; Grant et al. 2015). Advancements in information, communication and media technology have increased the visibility of supply chain operations and now consumers are more demanding about information visibility and transparency regarding the sustainability impact of supply chain operations (Carter and Rogers, 2008; Ho and Choi, 2012; Grant et al. 2015).

It is widely stated in the sustainability literature that a retailer is only as good as its suppliers and supply chain partners (Grant et al. 2013; Spence and Bourlakis, 2009). There is also a greater realisation in the supply chains that the unsustainable activities of the supply chain partners could lead to real risks to the reputation of the organisation (Grant et al. 2013). A large stream of sustainability literature has reported catastrophic events caused due to lack of visibility and control such as the cases of Nike and recently Rana Plaza in Bangladesh, leading to reputation and brand risks (Perry et al. 2015). Many sustainability researchers also made suggestions to integrate sustainability into supply chain strategy and operations, with the ultimate objective of safeguarding brand reputation. For example, Taticchi et al. (2013) and Carter and Rogers (2008) asserted that sustainability should be incorporated into the corporate agenda and a failure to engage with sustainability can lead to financial loss, tarnished brand equity and serious reputational damage, which they referred to as sustainability risk. They further argued that the success of any sustainability programme lies in the visibility of SCSR throughout the supply chain. This therefore necessitates the development of ways to assess, compare, benchmark, correlate practices for effective measurement and monitoring and to maintain a trajectory towards improvements.

The empirical evidence (section 5.4.5) suggest that the case companies are still facing supply chain visibility and control issues and therefore vulnerable to the type of incidents experienced in the 1990s by Nike and that they have not progressed reasonably well on this agenda. Empirical evidence further supports research by Masson et al. (2007); Tokatli et al. (2008) and Tokatli, (2008) highlighting the practice of the

use of sub-contractors and intermediaries for capacity reasons but without knowledge of the retailer, leading to a sustainability risk to brand reputation, which is regarded as a valuable asset of companies. Such issues of visibility and control in the supply chain were highlighted in isolation, either focusing on sustainability and fashion (De Brito et al. 2008) or risk and the garment industry (Masson et al. 2007). However, this research provided valuable insights by exploring the phenomenon of sustainability risk in the contemporary context of five companies in the UK fashion industry, showing they have not yet managed to address visibility and control issues, nor have they designed a robust strategy to mitigate SCSR.

Move to a Mixed Manufacturer/Supplier: The echoes of mixed manufacturers or suppliers resonate in the fashion supply chain literature and the most prominent issues discussed in this regard were retailers' last minute changes, new product requirements, and shipping in small and varied quantities of mixed (fashion and basic) products (Masson et al. 2007). Base demand (basic garments) was suggested to be treated differently from surge demand (fashion garments) for cost, responsiveness, lead times and as a sourcing strategy (Christopher and Towill, 2001). The importance of keeping a good mix of fashion and basic garments in a fashion retail store was highlighted and in particular Zara's example was cited repeatedly in the fashion literature (Lopez and Fan, 2009). Similar issues and challenges to manufacturers or suppliers were also highlighted by Tokatli (2008). However, an interesting account which illustrates the sustainability risk of moving to mixed manufacturers or suppliers was mentioned by Tokatli et al. (2008). They reported M&S's struggle to change its image from ready-to-wear, classic, heavy, old and traditional to more fashion oriented and placing demands for variety, fashion-ability and quick response from its UK based suppliers. However, UK based manufacturers and suppliers failed to meet the strict and demanding requirements of M&S. The most prominent reasons mentioned in the literature were cost pressures, low customer service level, slowness, inefficiency, high cost, inflexibility and lack of responsiveness (Tokatli et al. 2008; Taplin, 2006). Literature also mentioned that the requirements for reduced volumes heavily impacted manufacturers' efficiency, as changing over from one product to another caused non-productive time

due to machine set-up time and staff training (Masson et al. 2007; Barnes and Lea-Greenwood, 2006 and 2010).

Similarly, SCRM literature shed light on managing sourcing risks or strategies for responsiveness, agility and quick response and suggested the use of multiple sourcing, close to home for fashion and from the Far East for basic garments, for cost and efficiency reasons. On the other hand, sustainability management literature highlighted sustainability issues or initiatives in manufacturing operations and particularly mentioned the considerations and practices of re-use, re-manufacturing, refurbishment, recycling, repair, etc. (Grant et al. 2015). Further it was found that in sustainability management literature most of the interest lies in efficiency improvements, waste reduction, and the development of re-manufacturing capabilities to integrate reusable or re-manufactured components as opposed to the issues of mixed manufacturers or suppliers.

From the literature review and the above discussion, it appears that in all three areas researchers have overlooked the implications of being a mixed manufacturer or supplier, its impact on the brand image and how it could be a sustainability risk to the brand and business reputation. Such risks also threaten the continuity of manufacturer or supplier, as perhaps happened with M&S's suppliers and manufacturers. Therefore, this research provided an exciting insight by exploring the phenomenon of SCSR from a mixed manufacturer or supplier's perspective and its subsequent impact on the business and brand reputation, leading to SCSR. This research also provided insights that being a mixed manufacturer will not only lead to SR from a target market image perspective but also increase supply chain sustainability risk due to lack of knowledge and passage of new materials or products through manufacturing and production lines and processes which essentially were not created for fast fashion.

6.8 STIMULATOR OF INNOVATION

The case companies found engaged into three types of innovations (section 5.4.6) in order to manage their SCSR: capacity development, new product and process development and building partnerships. The following is the comparison of these drivers with existing literature.

Capacity Development: Many researchers have highlighted innovative initiatives of capacity development in order to meet fashion customer requirements. For example, Tokatli et al. (2008), Masson et al. (2007) and Tokatli (2008) highlighted initiatives of technology and machinery investment, certification and accreditation, ability to produce shorter production runs, training and skills development and developing design and product development capabilities. Similarly, technological developments and retail format changes such as multi-channel retailing are further adding capacity and growth opportunities especially for SMEs were also described by Ashworth et al. (2006). Masson et al.'s (2007) study also reported on how fashion supply chain partners, especially manufacturers and suppliers, are building their capacity in terms of reducing costs, skills development and access to developed textile industries for UK retailers, while a long time before, such initiatives of providing training and team working were also mentioned by Bruscas et al. (1998) as drivers of change in the UK clothing industry. Similarly, Christopher and Towill (2001) reported the role of cross-functional teams for organisational agility and rapid replenishment, characteristics of an agile supply chain and a move towards enhancing organisational capacity.

Capacity development in SCRM is a reasonably established topic of discussion. For example, Tang's (2006) proposal of nine robust strategies to mitigate supply chain disruptions broadly fits in the capacity development sphere to ensure business continuity should any disruption occur. Tang's (2006) suggestions include, having strategic stock at different locations, providing economic incentives for supplier development, flexible transporting such as multi-model and multi-carrier transportation and the use of multiple routes. Skills development, cross-training workforce, education and communication (Manuj and Mentzer, 2008; Gibb and Buchanan (2006) are widely cited areas of capacity development in supply chain continuity and risk management literature. Sustainability management literature also highlighted capacity development initiatives. However, it mainly focused on the supply side, such as supplier development by financial help to help suppliers' environmental programmes, helping suppliers to build their own programmes, educating, training and providing written material for supplier guidance to develop and implement sustainability initiatives (Grant et al. 2013; Miemczyk et al. 2012). Capacity development initiatives are also reflected in the

sustainability accounts of Grant et al. (2013), Delai and Takahashi (2011) and Carter and Rogers (2008), who highlighted the need for workforce education, training and development and a specific focus on research and development. Further, Smith and Sharicz (2011) highlighted the role of leaders in building capacity and asserted that leaders must build capacity in their system by education, communication, rewards and performance, along with a broad and deep stakeholder engagement and building internal and external partnerships. Similarly, Foerstl et al. (2010) argued that sustainable supplier development has a positive effect on operational performance and is a source of competitive advantage.

By examining the relationship between literature and the empirical evidence (section 5.4.6), a positive correlation is found regarding capacity development innovations in the case companies. Moreover, the empirical evidence further supports the type of capacity development innovation mentioned in the literature as practised by the case companies in the UK fashion industry. Hence, the findings strongly support the above researchers' accounts of capacity development in garments and fashion supply chains.

New Product and Process Development: The literature review chapter highlighted different aspects of new product and process development as a means to mitigate risks as well as a source of risks. For example, when M&S took over control of design from suppliers and made it an in-house activity, the retailer was able to exert a tighter control over the product development process. Additional benefits were effective communication, increased internal integration, increased flexibility and quicker response, supply chain collaboration and relationships, direct sourcing, compressed time-to-market and overall an agile supply chain (Khan et al. 2008). Similarly, new products and processes were also discussed in terms of flexibility and managing demand risks by flexible design, manufacturing postponement and modularity (Tang and Tomlin, 2008). Zara's example was cited in the context of product and process development that facilitated tighter process control and internal integration, which enabled the retailer to constantly introduce new products and responsive design, new product development and production processes (Tang and Tomlin, 2008; Christopher et al. 2004). The importance of supplier innovation was also highlighted by Choi and Krause (2006) as an important area of managerial focus in terms of managing the supply base to tap into

suppliers' creativity for product and process improvements. However, another spectrum of new product and process development was also highlighted in the SCRM literature where several researchers (Christopher and Holweg, 2011; Rao and Goldsby, 2009) cautioned that innovation can pose competitive threat and increase uncertainty and consequently lead to higher supply chain risks. They further elaborated that innovations in a product market can affect an industry's production processes or products, posing a threat to the entire supply chain because innovations can potentially change established patterns of competition and coordination among firms.

Literature on fashion supply chains is also full of examples related to ongoing innovation in fashion supply chains. One of the most important concepts discussed in the literature review chapter was shared situation awareness, which is enabled by the highest level of information sharing, communication, internal and external integration and the use of modern technology, enabling organisations to be responsive and agile, constantly introduce new products and ensure maximum product availability (Sull and Turconi, 2008). Barnes and Lea-Greenwood (2006 and 2010) and Masson et al. (2007) also highlighted innovations in logistics, especially shipping techniques, use of modern technology and fashion retailers' changing priorities regarding speed and profit. The UK's case was also highlighted by Taplin (2006), who described remaining textile manufacturers' response to decline of the industry and their efforts to secure the continuity of their businesses by focusing on the use of innovative production systems to maximise effectiveness, technological changes, use of just-in-time and quick response techniques, and the use of computer techniques in design, cutting and finishing. Automation was also reported as a major trend in the textile and garment industry where companies, especially manufacturers are substituting capital for labour for cost savings, reducing lead times, enhancing agility and responsiveness (Ghemawat and Nueno, 2006; Taplin, 2006).

The sustainability literature also shed light on the concepts of new product and process development from a SSCM perspective, for example, the storytelling strategy to use sustainability for competitive advantage (Flint and Golicic, 2009), sustainability for competitive advantage (Carter and Rogers, 2008), certification and accreditation, use of green, organic and natural materials, environmentally friendly product design and the

use of recycled packaging (Grant et al. 2015; Caniato et al. 2011). Kotzab et al. (2011) also highlighted process developments such as M&S's development of *Plan A* and similar marketing campaigns such as *look behind the label*. Researchers also mentioned the increased use of recycling, remanufacturing and refurbishment for waste reduction and resource conservation. Sustainability researchers, however, cautioned that such efforts will increase supply chain complexity, costs and operational issues (Grant et al. 2015; Linton et al. 2007).

The findings of this research (section 5.4.6) support to a great extent the existing literature and the above discussion on innovations in the area of new product and process development. Further, the empirical evidence also exhibited a positive correlation between the kinds of innovations in new products and process development such as storytelling (Flint and Golicic, 2009), automation, communication and information sharing, recycling and waste reduction, use of sustainable materials, alternatives and substitutes, for differentiation, reducing lead and product development times, greater control, flexibility and risk management (Grant et al. 2015; Mollenkopf, 2006; Carter and Rogers, 2008; Khan et al. 2008; Tang and Tomlin, 2008; Sull and Turconi, 2008; Taplin, 2006; Barnes and Lea-Greenwood, 2006, Ghemawat and Nueno, 2006).

Despite the fact that literature is full of examples of innovation in the areas of product and process development, the empirical evidence (section 5.4.6) suggests that the case-study companies have only recently begun to focus more on such innovations. Consequently, this leads the researcher to recall the cautious notes from Christopher and Holweg (2011), Rao and Goldsby (2009) and Grant et al. (2015) that innovations can cause competitive threat, increase complexity and lead to risks. This means companies should be careful not to focus blindly on innovative new products and processes and be unduly impressed by early improvement, as they may be caught later by what is suggested above.

Hence the empirical findings provided new insights on innovation in new products and processes as a driver of SCSRM in an industry which has declined and shrunk in size but is finding its way to combat this trend by embracing innovations. Thus, the consistency

between literature and the empirical findings suggests that innovation in new product and process development on the one hand enables companies to manage SCSR but on the other could be a sustainability risk itself, should it not be managed properly, or if there is no focus on innovation at all.

Partnerships: As mentioned in the literature review, business partnerships are gaining increased interest from supply chain researchers and companies are seeking to build collaborative relationships with supply chain partners to co-create world class products, attract the most valuable customers, and attain extraordinary profits (Ploetner and Ehret, 2006; Mlaker Kač et al. 2015; Ramanathan and Gunasekaran, 2014; Christopher, 2010). Chapter Two also highlighted some benefits of partnerships, such as responsiveness, reducing time-to-market, increased performance, efficiency enhancement and being proactive (Ploetner and Ehret, 2006; Christopher et al. 2004). However, it was also noted that building partnership is a long and complex process which depends on trust, constant communication and information sharing and yet has competitive as well as collaborative elements, which induces parties to collaborate for mutual benefits and opportunistic behaviours for a greater share of the pie (Kim et al. 2013). Further, it places a greater demand on the internal restructuring of benefits and reward system as well as deployment of resources, which can help coordinate and collaborate with supply chain partners (Brouthers et al. 1995; Ploetner and Ehret, 2006).

Barnes and Lea-Greenwood (2006) also draw our attention to partner-led relationships in fast fashion supply chains but maintain that partnering relationships with a limited number of suppliers are preferable for greater responsiveness. In a similar context, Fernie and Azuma (2004) emphasised the value of partnering relationships for successful implementation of quick response but maintained that long term partnering relationships with a limited number of suppliers have potential to compromise a firm's market orientation capabilities along with flexibility and responsiveness, which are necessary for a diverse and fast-moving fashion market. Similarly, Christopher et al. (2004) argued that organisational performance relies upon a series of alliances and relationships with other companies as an effective way to compete in a constantly changing market conditions. Birtwistle et al. (2003) maintained that varying objectives in supply chain partners can only be resolved by partnerships which also help in supply

chain integration; however, it is imperative to ensure that partner members are assessed on the profitability of their contribution to the entire supply chain.

SCRM literature also places a great emphasis on partnerships for proactively managing supply chain risks. However, it also highlights a negative side of partnerships arising from being too dependent upon partners and being victim of a locked-in effect (Smeltzer and Siferd, 1998; Lonsdale, 1999; Pilling and Zhang, 1992). Risk management literature further places emphasis on partnerships with multiple stakeholders such as regulatory bodies, ports and shipping agencies, early warning and alert systems for proactive risk management and business continuity (Anderson and Anderson, 2009; Herban et al. 2004; Peck, 2006).

Sustainability literature also highlights the importance of partnerships for a number of reasons, such as joint product development, to share R&D costs, to restore corporate image, to increase environmental responsiveness of suppliers, to reduce costs, to reduce supply chain waste and to develop sustainable materials, alternatives or substitutes (Grant et al. 2013; Xia and Tang, 2011; Zsidisin and Siferd, 2001). Seuring and Muller (2008) asserted that for a SSCM it is imperative to have partnerships and close integration, which will help in sustainable and new product introductions. De Brito et al (2008) stressed that the internal organisation of a company and external organisation of the whole supply chain is necessary for enhanced supply chain performance. They maintained that the best performing companies are those that effectively manage internal and external relationships between functions and organisations through improved coordination. De Brito et al (2008) highlighted the need for highly skilled people for continuous innovations and technological developments especially for local or national brands. Critical skills such as creativity and versatility are necessary, which can be cultivated by cross-functional and multidisciplinary teams. Thus, close integration and organisation of internal functions are critical factors for sustainable production and innovation.

Overall, the literature review chapter and the above discussion of literature suggest that partnership is a long and well established topic within SCM literature. The prime conditions for partnerships mentioned in the literature include internal integration,

common understanding on goals and common targets, similar management philosophies, internal restructuring for reward and benefits, trust development, use of technology and culture, time dependent and complex management tasks (Fernie and Azuma, 2004; Christopher et al. 2004; Birtwistle et al. 2003; Ploetner and Ehret, 2006; Brouthers et al. 1995).

The empirical evidence (section 5.4.6) strongly corroborates extant literature, in that the case companies are entering into partnerships as an innovative and strategic process to manage SCSR. On the other hand, the most important initiatives for partnerships in the case companies further corroborate with those mentioned in the extant literature. For example, helping suppliers, partnerships with universities, R&D and industry working groups, use of information technology to share information with supply chain partners, production and lead time reductions, for differentiation, and ensuring supply continuity. However, given that this is a recent trend in the case companies, it could be argued that the case companies can only benefit from such innovative initiatives when they fulfil all the important requirements for partnerships mentioned in the literature, basic infrastructure and strategies (Fernie and Azuma, 2004; Christopher et al. 2004; Birtwistle et al. 2003; Ploetner and Ehret, 2006; Brouthers et al. 1995). Not fulfilling those requirements can lock companies into risky relationships, leading to greater SCSR.

The correlation between empirical results and extant literature further indicate that partnership is an innovative and strategic SCSRM strategy adopted by case companies. Therefore, this research makes a contribution by exploring that SCSR can be managed by partnerships, especially in a volatile and unpredictable market such as the fashion industry, but that adopting such a strategy without proper understanding and making substantial changes in organisational structure and processes can also lead to substantial SCSR.

6.9 COOPETITION

Coopetition was found as a driver for SCSRM in the case companies (section 5.4.7). The following is the comparison of these drivers for SCSRM with existing literature.

Capacity Sharing: Capacity sharing was the first area where most case companies adopted a coopetition strategy (section 5.4.7). SCRM literature discussed numerous supply chain risks and disruptions due to capacity shortage, poor logistics performance and delivery reliability and therefore identified capacity as a major supply side risk (Wagner and Bode, 2006). Tummala and Schoenherr (2011) also reported supply chain risks such as delays, disruptions, and plant and supply risks are due to capacity constraints. Therefore, researchers proposed capacity and resource sharing as a supply chain risk or disruption management strategy (Tummala and Schoenherr, 2011; Wagner and Bode, 2006; Tang, 2006). Specifically in fashion supply chains, coopetition strategies of resource sharing in manufacturing, warehousing, distribution, joint marketing and promotion, joint R&D and R&D contracts, skills, experience and knowledge sharing were highlighted (Masson et al. 2007; Wigley and Provelengiou, 2011; Das and Teng, 2001; Sen, 2008; Tokatli et al. 2008). In sustainability management literature, coopetition strategy was discussed in terms of sharing distribution and transportation for emission reduction, sharing recycling and waste management resources, developing sustainable suppliers and engaging with suppliers on joint planning, decision making, reliable promises, ongoing feedback and support (Carter and Jennings, 2002, Hollos et al. 2011; Grant et al. 2015). Further, sustainability literature holds that capacity sharing strategies are a well-known subject of economic supplier cooperation literature (Carter and Jennings, 2002; Seuring and Müller, 2008) but when used for sustainable supplier cooperation have proven to have positive impact on the firm performance.

The empirical evidence demonstrated a great deal of support for existing literature on cooperation and competing at the same time, coopetition for capacity sharing. Further, types of coopetition strategies recently adopted by case companies also corroborate with coopetition strategies mentioned in the literature, for example, sharing distribution and transportation, warehousing and manufacturing resources. This research, on the one hand supports extant literature which has highlighted simultaneous cooperation and competition within sustainability (Carter and Jennings, 2002, Hollos et al. 2011; Grant et al. 2015), risk (Tummala and Schoenherr, 2011; Wagner and Bode, 2006; Tang, 2006) and fashion supply chains (Masson et al. 2007; Wigley and Provelengiou, 2011; Das and

Teng, 2001; Sen, 2008; Tokatli et al. 2008). On the other, it explored such practices under a unified concept of sustainability risk and argued that it is highly imperative to cooperate on some dimensions and compete on others, as was found in the case companies, in order to compete, survive and get competitive advantage in a highly volatile and unpredictable marketplace.

Information Sharing and Building Relationships: As was noted in the literature review chapters, information sharing and building relationships is the most widely discussed topic in the SCM discipline. Fashion supply chain management literature discussed information sharing from various perspectives, for example, to avoid the bullwhip effect, for correct forecasting and inventory management, for quick response, channel alignment, agility and short lead times (Birtwistle et al. 2003; Christopher et al. 2004; Fernie et al. 2015). Similarly, it was also found that due to the fashion requirements of short lead time, short production runs and greater variety and flexibility, adversarial, arm's length and short term relationships are common in fashion supply chains (Abernathy et al. 1999; Castelli and Brun, 2010 Christopher et al. 2004; Birtwistle et al. 2003; Masson et al. 2007; Bruce and Daly, 2006). However, the literature also demonstrated that firms such as Zara maintain long term partnering relationships with a few suppliers, which Choi and Krause (2006) referred to as preferred suppliers.

SCRM literature advocates information sharing with various stakeholders and building relationships. This is partly due to the need to identify and manage supply chain risks, pro-actively and holistically (Christopher et al. 2011; Faisal et al. 2006). As supply chains are long, complex, interdependent, interconnected and global, therefore there is a greater need to share information and build relationships, for greater flexibility, to manage disruptions, to increase visibility and to ensure continuity (Manuj and Mentzer, 2008; Peck, 2006, Christopher and Peck, 2004; Harland et al. 2003). Inclusion of multiple stakeholders for SCRM is also highlighted by Peck (2006) in the context of national and international security measures which are applicable to organisations. Further, Anderson and Anderson (2009) and Grant et al. (2015) also highlighted a need for information sharing and building relationships with multiple stakeholders, NGOs, working and pressure groups and different regulatory bodies for sustainability risk

management. Ritchie and Brindley (2007) focused on a wider set of stakeholders and included shareholders, suppliers, creditors, employees and customers, competitors, government and the society. They further proposed risk management responses which largely demonstrate a collaborative, relationship development, information sharing and development of shared management information systems.

Sustainability literature further supports to a great extent the idea of information sharing and building relationships even with competitors, pressure groups and supply chain partners. Researchers (Foerstl et al. 2010; Grant et al. 2015; Carter and Rogers, 2008) highlighted its importance for reputation management, to manage uncertainties, for responsiveness, and to react to the speedy evolving dynamics at different interfaces and rapidly changing factors such as regulation. Foerstl et al. (2010) argued that sharing information and building relationships with multiple stakeholders including competitors and pressure groups is an important source of information and supply chain knowledge development which has a positive impact on supply chain sustainability performance. Consequently, the cooperative strategy with pressure groups provides purchasing and supply management functions in particular with enhanced predictability and responsiveness and the ability to respond more effectively to new and changing requirements and suppliers' misconduct (Eisenhardt and Martin, 2000). However, a structured and cooperative relationship with NGOs also has potential to lead to mutual exchange and build buying firms' knowledge, which itself is regarded as an important capability (Teece et al. 1997). Thus, Foerstl et al. (2010) argued, external responsiveness is a major element of dynamic SSCM capabilities which will be rewarded with competitive advantage. On the other hand, Miemczyk et al. (2010) hold that at network level, stakeholders are many and varied, such as consumers, businesses, governments, NGOs, shareholders, activists, competitors, suppliers and individual managers and they further maintained that achievement of sustainability involves these and many other multiple inter-connected and interdependent actors who may differ in ambitions and objectives, and have varied power and influence structures.

The empirical evidence (section 5.4.7) strongly support extant literature and above researchers on information sharing and building relationships as a coopetition strategy. The findings (section 5.4.7) further support the benefits of such initiatives as highlighted

in the above discussion and in the literature review chapter. Hence, this research on the one hand supports the arguments in favour of inclusion of multiple stakeholders and sharing information and building relationships with them as a SCSRM strategy. On the other, makes its own valuable argument by exploring this novel strategy from a unified conceptual point of view, sustainability risk, and in the context of five companies in the UK fashion industry that rather than considering such stakeholders as pressure groups and maintaining a hostile environment, it is far more advantageous to consider them as a capability which can further help in mitigating SCSR proactively and ultimately ensuring business continuity.

6.10 SCSRM TYPOLOGY

This section covers the last activity in Creswell's (2007) data analysis framework, which is, making assertions and generalisations. This, on the one hand, will complete data analysis framework and on the other will outcome into a SCSRM typology. However, it is imperative to mention that this process is simply extraction of general types by looking at general patterns, similarities and differences discussed in the within-case, cross-case and the discussion chapters. Therefore, the designed typology will be merely a simplification of reality rather than an exact copy of reality. Furthermore, the main aim of the designed typology in this section is to provide a subjective explanation of the SCSRMP and major findings to make them easily accessible. Therefore, the final typology is the researcher's perceived illustration of SCSRMP and how and why different major findings are linked together or treated separately from each other. The typology design process will further shed light on different research questions and their answers.

It is imperative to mention that the process of designing supply chain risk management typology is based upon and derived from the findings and the discussion of the findings. SCSRM typology has three major elements; those are understanding current and the future potential supply chain sustainability risk, having an organisational design one which can help and facilitate managing SCSR and having innovative management processes to manage SCSR. In the following sections the researcher will shed light on each element in detail.

6.10.1 Current and Future Potential SCSR

Regarding the definition of SCSR, the empirical evidence showed that fashion companies of the UK fashion industry do not appreciate the quantitative nature of risk and found it difficult to assign probabilities to make risk quantifiable and static and therefore defined it based upon their subjective understandings, operational areas and the nature of their work. On the other hand, the respondents defined sustainability as the continuity and viability of their business and SCSR as the continuity and viability of their supply chain. These, according to Costanza and Pattan (1995), are the characteristics of a sustainable system rather than the definition of sustainability.

Further, the respondents' definition of sustainability does not contain any element of the social and ecological aspects of the Triple-Bottom-Line. However, respondents largely appreciated the economic aspect of the TBL; e.g. they see "green is green". This further supports arguments by Grant et al. (2015) that sustainability initiatives should be in line with corporate objectives and must add to the bottom line.

Since the respondents perceive risk differently and they do not have a clear idea about sustainability either, that could be one reason why they perceive every key risk and sustainability issue as one and the same thing and clearly have no idea how they impact the operational performance of their supply chain and ultimately have no formal strategies to manage them. However, it is evident from the empirical evidences (Appendix Two) that the risk is a very broad context in the case companies, in which respondents included many things that they did not clearly understand. Therefore, gaining insights from the empirical evidence, a better definition can be designed as follows:

Sustainability Risk: *"A subjectively determined expectation of loss to the continuity and viability of a system caused by an imbalance in social, environmental and economic performance of the system".*

Supply Chain Sustainability Risk: *"A subjectively determined expectation of loss to the continuity and viability of a chain due to an imbalance in social, environmental and economic performance at any tier in a focal firm's supply chain."*

Regarding SCSRMP, the empirical evidence showed that there is no formal SCSRMP followed by the case companies and that the processes adopted are largely embedded into the job duties and responsibilities of the managers. Further, this task mainly rests with the supply chain, ethical compliance and sourcing managers. Although empirical evidence suggests that, for SCSRM, almost all the case companies have ad hoc plans, however, most of the managers and directors were found to rely on experience, gut feelings, watching and listening to others in order to make SCSRM related judgements, decisions or for contingency planning. Empirical evidence further showed that the case companies are making substantial progress and improvements in SCSRM by implementing new strategies. However, the final decisions are still made much more subjectively and based upon judgments and gut feelings. Furthermore, the empirical evidence also showed that the case companies use a mix of qualitative and quantitative strategies with a major focus on the bottom line. Overall, the case companies have overlapping strategies, as well as ones specific to the firm, due to the nature of the product, company size, strategy and structure, market and geographical location of the supply chain partners.

Finally, the key issues discussed above and the empirical evidence (chapter four and five) lead to the conclusion that:

❖ Risk is a subjective phenomenon and varies from person to person depending upon his/her subjective understanding and personal circumstances.

❖ It is imperative to understand how sustainability risk is perceived by a particular supply chain so that an effective SCSRMP or strategies can be designed for that particular supply chain.

❖ Due to lack of knowledge and understanding on different risk and sustainability issues supply chain risk management is becoming a broader context and therefore organisations and executives including everything into it.

❖ Despite its critical importance in the literature and increased sustainability risk in global supply chains, case companies were found to lag far behind in this critically important area, partially due to the barriers and challenges mentioned in this research.

❖ SCSRM is a dynamic process which needs constant changes, adjustments and modifications depending upon the nature of the market, industry, geographic area, organisational structure, strategy, culture and the internal and external environment in which the organisation operates and has to manage sustainability risk.

❖ SCSRM tasks are largely vested in limited departments or personnel, which implies that case companies are passing SCSRM pressures to up-stream supply chain partners and ultimately increasing dependency upon these functions. Hence, there are possible threats to the continuity of the supply chain due to a general tendency to pass sustainability risk, rather than sharing, mitigating or managing.

❖ Case companies can learn from each other and from academia with regard to firm specific sustainability risk managed strategies, as it was found that there is a potential for some companies to mitigate their SCSR by learning from other case companies; for example, CC2 and CC4 (premium quality fashion and strong history and brand name) and CC1, CC3 and CC5 (fast fashion garments online as well as for major customers in the UK).

❖ To a large extent, SCSRMP in the case companies is based upon the financial performance and cost reduction. This is one reason why some case companies despite being financially strong, do not yet not have any formal SCSRMP, department, team or a dedicated person. Further, hiring a dedicated person for SCSRMP is still considered as a costly decision.

Based upon the above discussion on the definition and SCSRM process and conclusions the researcher will suggest the first construct for SCSRM typology that organisations need to understand and must have knowledge about what are their current and potential future key sustainability risk and then need to design their mitigation strategies accordingly (Appendix Five, first construct for SCSRM typology).

6.10.2 Organisational Design

The next areas of exploration were the constraints in managing SCSR and how SCSR impact the operational performance of the case companies. In terms of constraints or

barriers in managing SCSR, the empirical evidence revealed numerous challenges to the case companies in the UK fashion industry. The following were identified as the most important and common SCSRM barriers or challenges to the case companies in the UK fashion industry:

- ❖ Organisational culture which is stagnant and huge resistance to change was mentioned as a major barrier in managing SCSR. Some of the reasons are aging workforce and lack of young generation's interest in factory work.
- ❖ Decline of the UK textile and garment industry and current lack of UK manufacturing. This caused capacity constraints and further extended supply chains to outsource materials and manufacturing. On the other hand, lack of UK government interest in textile manufacturing and not providing a conducive external environment is further adding industrial uncertainty in UK fashion industry.
- ❖ Organisational resources such as lack of technically skilled workforce, weak financial position of the company, nature of basic raw material, outdated technology and poor infrastructure, operating costs such as wages and energy were mentioned as barriers.
- ❖ Consumer preferences for fast fashion and low price in the UK and low concern for environmental and social issues in the supply chains of fast fashion providers were also mentioned as major challenges because most of the remaining garment manufacturers and suppliers are operating in premium quality fashion which is expansive.
- ❖ Lack of senior management knowledge, cooperation, information sharing and communication and integration were also mentioned as a major barrier, managers were often unaware of the overall business strategy and future direction or what the company wants to achieve.
- ❖ Lack of integrations, collaboration, information sharing and communication on SCSRM, within the company and with supply chain partners.
- ❖ Supply chain length and complexity, lack of visibility and control, especially at the upstream level of the supply chain were also mentioned as a major challenges, particularly for brand image.

❖ New requirements from retailers regarding new fibres, new chemicals, new products and markets and the pressures for margins, price cuts, and short lead times, mixed manufacturing and non-cooperative behaviour were also proved as major challenges.

❖ Lack of formal processes or strategies to manage SCSR and not integrating SCSRM strategies into corporate strategy and then short term performance measurement systems within the case companies were also mentioned as major challenge.

❖ Trade agreements such as MFA (Multi-Fibre-Agreement) opened UK fashion industry for cheap imports and put price pressures not only on the UK premium quality manufactures but also on fast fashion manufacturers and suppliers, because manufacturing in the UK is expansive due to high operating costs.

In terms of exploring how SCSR impact the supply chain operational performance of UK companies in the UK fashion industry, the empirical evidence showed that the case companies have no specific tool to measure sustainability risk performance in their supply chains. The major points of concern of the case companies were in the following areas:

❖ Supply continuity due to shortage of it, price volatility and supplier market transformation. Further, basic raw materials (wool, cashmere, premium quality cotton and leather) are expansive commodities which are subject to alternative uses and major sources of income for farmers instead of supply to garment manufacturers or suppliers.

❖ Lack of UK manufacturing and technically trained and skilled workforce is further leading to the risks of capacity, continuity, disruption and manufacturing operations bottle-necks.

❖ Small size and weak financial position of the case companies restricts them to have dedicated department, team or a person or to deploy resources for SCSRM. Therefore, there is potential to overlook SCSR and ultimately its impact on the business continuity. However, companies with strong financial status were also not found having any dedicated person, department or team or formal process for

SCSRM (Chapters Four and Five). Therefore, it was more a case of lack of understanding, knowledge about SCSRM and then prioritising cost over dedicated resources for SCSRM.

❖ Case companies have outdated technology which is slow, labour intensive and less efficient. However, case companies are upgrading existing and buying new technology to reduce costs and be responsive.

❖ Decline of the UK textile and manufacturing industry diminished textile and garment clusters and therefore now UK manufacturers have to outsources even smallest things from overseas which has increased lead time, costs, sustainability, risk and quality issues, impacted customer service and caused huge reputational problems.

❖ Long, extended, complex and invisible supply chains with less control has led to the issues of cost, quality, responsiveness and agility, reputation and customer service issues.

❖ Stagnant culture, classical management style and lack of management knowledge on SCSRM, lack of internal and external integration, cooperation, information sharing and communication causing delays, disruptions, increasing costs, impacting customer service and hence distorting brand reputation.

❖ Retailers' stringent requirements for price, quality, lead time, margins and new materials and mixed manufacturing or supply which affect supply chain partners' profits, growth and causing operational disruptions. Further, lack of information sharing, communication and cooperation from retailer also increases risks for supply chain partners in terms of pilling up inventory, sourcing wrong materials and costly design changes.

❖ Consumer behaviour in terms of preference for fast fashion and low price, not take care of sustainability risk issues in fast fashion supply chains and then difference between their behaviour and attitude (demand for ethical considerations but not translating their demand into their own purchasing behaviour). These issues cause difficulty in trend prediction and potential for bringing wrong garments into the market place and greater chances for their failure and hence huge costs.

The researcher did not find any support for the fourth research question (impact of SCSR on the operational performance of the case companies). However, the respondents did not demonstrate any knowledge on this question as they do not have any direct tool to measure the impact of sustainability risk on the operational performance of their companies. Further, it was also found that the respondents are not familiar with how barriers and challenges translate into performance. Therefore, it can be argued that one of the most important barriers and challenges is the understanding of the concept of sustainability risk itself, so that managers can understand and track performance. Hence, this research concludes that the case companies are following traditional performance measurement elements of cost, quality, price and lead time. There is no performance measurement tool in the case companies that can demonstrate or measure how sustainability risk impact the operational performance of the companies in the UK fashion industry.

The above discussion leads to conclusion that major barriers or the current challenges in managing SCSR also impacts the operational performance of the case companies but yet it is not known how, due to the above mentioned reasons. Therefore, based upon the above answers to questions three and four, the major barriers in managing SCSR and their impact on the operational performance of the case companies are those of organisational resources and culture, growth of fast fashion and management structure (for more detail please see Appendix Five).

At the heart of this research was the question that how the UK fashion industry can manage its supply chain sustainability risk. Examining barriers in managing SCSR and current challenges to the organisations, it appeared that the case companies are operating in a situation where they locked-in current barriers and challenges which restricts them and hinders their progress to manage SCSR. Further, it is also apparent that the case companies are operating in the context of growth of fast fashion which also restricts case companies to manage their SCSR. Therefore, due to the relevance to the firms' internal environment, organisational situation and context can be further categorised into one construct; organisational design. Furthermore, organisational situation is a representation of what is going on in the case companies at the moment in time, whereas organisational context is a reflection of the context in which firms were

operating. Consequently, a single construct of organisational design can capture and represent what is demonstrated in the two separate constructs of organisational situation and context. This discussion is further represented in appendix five (second construct for SCSRM typology).

Hence, the organisational design imply that in order to manage supply chain sustainability risk, case companies should have a certain design which can help and facilitate the case companies to managing their SCSR. In the context of the case companies in this research, organisational design of the case companies consists of and is described in terms of organisational resources and culture, management structure and growth of fast fashion.

6.10.3 Management Processes

Extending discussion on how the UK fashion industry can manage its supply chain sustainability risk. The researcher will like to highlight some of the drivers of managing SCSR. Increased disruptions, uncertainties and SCSR stimulated case companies to adopt some innovative processes for their management. Based upon the discussion in chapter four and five and the discussion of the major findings, three drivers of SCSRM can be derived those of safeguarding brand reputation, stimulator of innovation and co-opetition which are included in the typology (for more detail please see appendix five). For SCSRM typology, the major drivers can be grouped under one category of innovative management processes which implies that, in order to manage supply chain sustainability risk case companies should have certain innovative processes as those of above (please see appendix five, third construct for SCSRM typology).

The above designed constructs and their description can be put together to design an overall typology for SCSRM for the case companies. Therefore, the following Figure 7 shows the SCSRM typology for the case companies:

Figure 7: SCSRM Typology
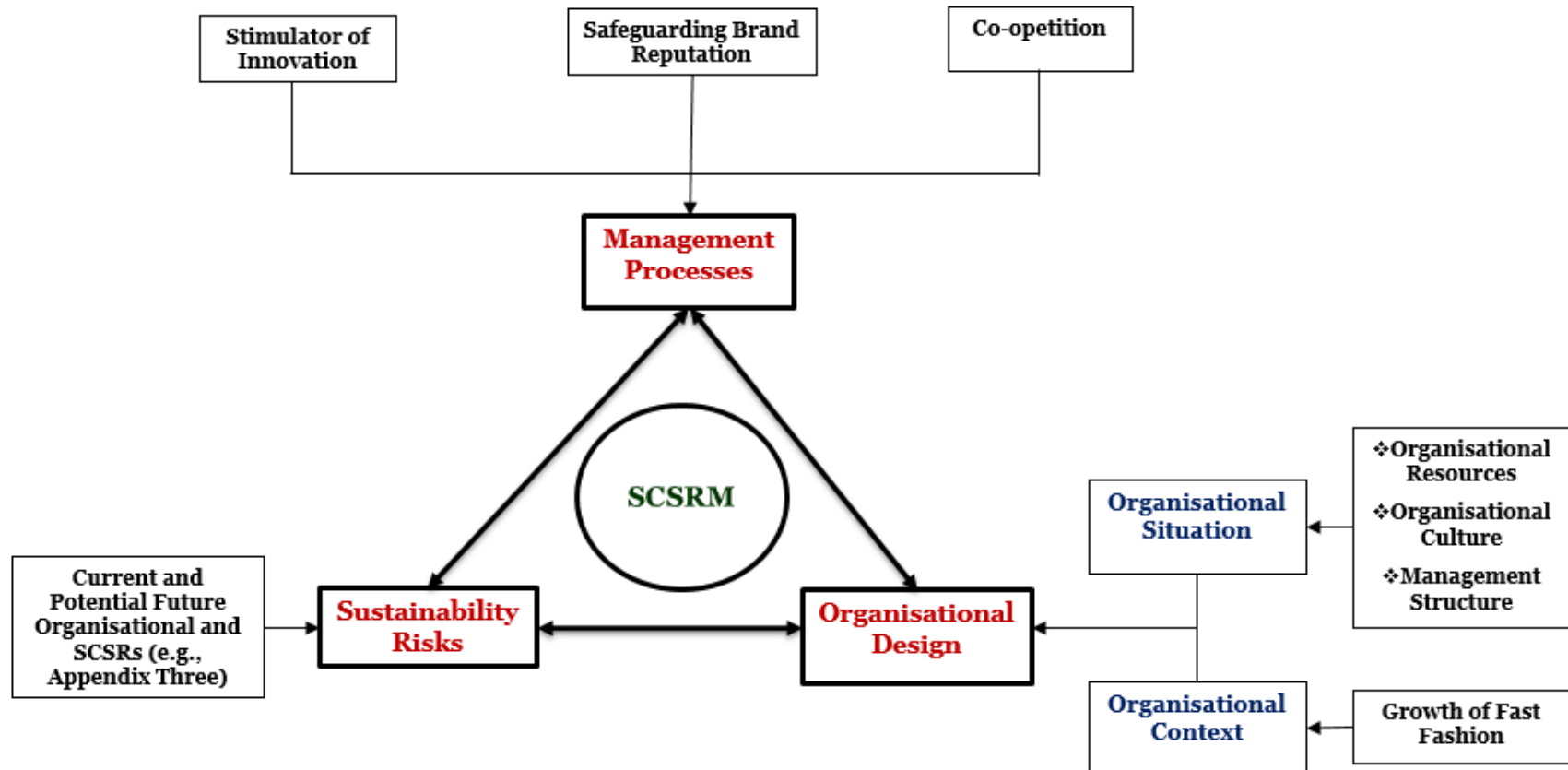
The typology implies that case companies need to have a certain organisational design and certain management but also innovative processes to manage sustainability risk. The above typology also shows the inter-links and interconnectedness of the sustainability risk, organisational design and the management processes. This implies that, if there is a change in sustainability risk it will also bring and need changes in the other two areas of organisational design and management processes. Similarly, if there is any change in organisational design or management processes, it will introduce new types of SCSR. Therefore, supply chain sustainability risk management process will need to run holistically, keeping three areas in mind: sustainability risk, organisational design and management processes. The typology is also consistent with Johnson et al.'s (2008) innovative idea of strategic drift, which means organisations should not only bring change in one or two areas and get stuck. Therefore, the typology necessitates a holistic, iterative approach to managing SCSR in accordance with changes in sustainability risk or management processes or organisational design. Thus, design of typology also answers the final research question which was how the UK fashion industry can manage its SCSR.

The next chapter will conclude this research by providing a thesis summary, answering the research questions and discussing implications.

CHAPTER SEVEN: CONCLUSION AND IMPLICATIONS

7.1 THESIS SUMMARY

This thesis explored the phenomenon of sustainability risk and supply chain sustainability risk management strategies in the context of the UK fashion industry. This chapter concludes the thesis by first providing a summary followed by a discussion on theoretical and managerial contributions and future research.

Supply chain sustainability risk management is an emergent concept within the supply chain management discipline. The literature highlighted different attempts by the supply chain research community to define SCSR. However, it was found that literature still lacks a grounded definition of SCSR, which is imperative to understand, conceptualise and operationalise the concept to subsequently design SCSRM strategies. Further, the literature review also compiled different definitions of sustainability, risk and sustainability risk; however, none of them was defined in an agile and volatile sector such as fashion supply chains. In order to fill this gap, this research specifically investigated the definitions of risk, sustainability and supply chain sustainability risk. It was found that research respondents define risk subjectively, and view sustainability as continuity and viability, which are characteristics of sustainability rather than a definition, and the SCSR as "the subjectively determined expectation of loss to the continuity and viability of a supply chain". However, this definition does not include important environmental and social aspects of sustainability. Therefore, a more comprehensive definition of supply chain sustainability risk is provided in this research.

After reviewing extant literature, a gap was highlighted that despite the fact that there are numerous strategies and frameworks for sustainability and/or risk management in supply chains, none of them was designed and explored in the context of the UK fashion industry, which has declined in size due to the UK retailers' continuous trend to outsourcing, offshore manufacturing and import penetration over the years, but still faces retail concentration and fierce competition. The SCSRMP was explored from three dimensions: identification, prioritisation, and mitigation strategies. The empirical evidence showed that there is no formal SCSRMP followed by the case companies and

that the processes adopted are largely embedded into the job duties and responsibilities of the managers. Furthermore, this task mainly rests with the supply chain, ethical compliance and sourcing managers.

Although empirical evidence suggests that almost all the case companies have ad hoc plans, most of the managers and directors were found to rely on experience, gut feelings, watching and listening to others in order to make SCSRM related judgements, decisions or for contingency planning. Empirical evidence further showed that the case companies are making substantial progress and improvements in SCSRM by implementing new strategies. However, the final decisions are still made much more subjectively and based upon judgments and gut feelings and with an overall interest to improve the bottom line.

The empirical evidence further supports extant literature emphasising that the nature of SCSRM is dynamic and needs constant changes, adjustments and modifications depending upon the nature of the market, industry, geographic area, organisational structure, strategy, culture and the internal or external environment in which the organisation has to manage its SCSR (Harland et al. 2003; Smallman, 1996; Christopher and Holweg, 2011; Gaudenzi and Borghesi, 2006; Zsidisin et al. 2000). The empirical evidence also showed that the case companies use a mix of strategies highlighted in the literature for sustainability risk identification, prioritisation and mitigation. Furthermore, empirical evidence also showed that the case companies have overlapping strategies, as well as ones specific to the firm itself, due to the nature of the product, market and geographical location of the supply chain partners.

Factors that restrict companies or impede their progress or alternatively act as a driving force for sustainability and/or risk management within the supply chain were also observed as a prominent area of research interest in supply chain sustainability and/or risk management literature. In this regard, various factors as barriers or drivers for SCSRM were further highlighted in the literature review. At the same time, it was observed from the extant literature that the supply chain researchers have not yet explored such factors in the context of the UK fashion industry. Exploration of such issues was important to understand the nature of problems so that targeted and specific solutions to the companies in the UK fashion industry can be proposed.

The empirical evidence revealed numerous barriers and challenges to the companies in the UK fashion industry. The empirical evidence demonstrated that four factors, organisational culture and resources, growth of fast fashion and management structure were main barriers and three factors, safeguarding brand reputation, stimulators of innovation and coopetition were drivers for SCSRM in the case companies.

The literature review chapter highlighted key elements for performance measurement in all three areas. For example, in fashion supply chains, cost, price, quality, lead times, flexibility, responsiveness, agility and customer service were the most cited elements. In risk management, the ability of an organisation to proactively assess and mitigate risks or at least reduce their impact, business continuity, resilience and robustness, reducing complexity and increasing visibility and structural flexibility were mentioned as ways of managing SCR. Similarly, in sustainability literature, conservation of resources such as water, energy and materials, reducing environmental impacts, improving the work environment and ethics were some of the dimensions of sustainability performance measurement. Further, it was noticed that price, cost, quality and lead time are still dominating factors in supply chain performance measurement. However, the literature review demonstrated that there is no widely accepted and agreed upon supply chain performance measurement system in supply chain sustainability and/or risk management, let alone supply chain sustainability risk performance measurement.

The empirical evidence showed that respondents have a lack of understanding on supply chain sustainability risk and supply chain sustainability risk management strategy. Therefore, the case companies have no specific tool to measure SCSR performance in their supply chains. For this reason, the researcher did not find any answer on how the SCSR impacts the operational performance of case companies in the UK fashion industry. Further, it was also found that the respondents are not familiar with how barriers and challenges translate into performance. Therefore, it can be argued that one of the most important barriers and challenges is the understanding of the concept of sustainability risk, so that managers can understand and track performance. Further, it was found that the case companies follow traditional performance measurement elements of cost, quality, price and lead time.

The literature review chapters demonstrated various views on how fashion supply chains can be agile, responsive and better serve customers to survive in a volatile and unpredictable marketplace. Further, the sustainability management literature suggested a large number of sustainability initiatives and strategies to integrate sustainability into supply chain operation. Similarly, supply chain risk management literature highlighted various risk management strategies. However, it was found that the extant literature lacks a SCSRM framework or strategies which can help companies in the UK fashion industry in particular to manage their SCSR. Therefore, the focus of this research was to explore such issues to propose sustainability risk management strategies for the companies in the UK fashion industry. The empirical evidence in first instance suggests that the case companies first need to understand and should have knowledge about their current and potential future key risks and sustainability issues and then a supportive organisational design and innovative processes for their management. Consequently, this leads to the SCSRM typology designed in this thesis. The designed typology necessitates a holistic and iterative approach to managing sustainability risk in accordance with changes in sustainability risk or management processes or organisational design. Hence, if for some reason management processes or organisational design change, it will introduce new sustainability risk and therefore new mitigation and management strategies should be required to manage them.

In the following section the researcher will briefly shed light on the research questions and their answers.

7.2 CONCLUSION REGARDING THE RESEARCH QUESTIONS

How do the companies in the UK fashion industry define supply chain sustainability risk?

The fashion companies of the UK fashion industry do not appreciate the quantitative nature of risk and defined risk based upon their subjective understandings, operational areas and the nature of their work. On the other hand, the respondents defined sustainability as the continuity and viability of their business and supply chain sustainability risk as the continuity and viability of their supply chain. These, according to Costanza and Pattan (1995) are the characteristics of a sustainable system rather than

the definition of sustainability. Further, the respondents' definition of sustainability does not contain any element of the social and ecological aspects of the Triple-Bottom-Line. However, respondents largely appreciated the economic aspect of the TBL; e.g. they see "green is green". This implies that, in order to be successful, sustainability initiatives should be in line with corporate objectives and must add to the bottom line.

Since the respondents perceive risk differently and they do not have a clear idea about sustainability either, that could be one reason why they perceive every key risk and sustainability issue as one and the same thing and clearly have no idea how they impact the operational performance of their supply chain and ultimately have no formal strategies to manage them. However, it is evident from the empirical evidence that the risk is a very broad context in the case companies, in which respondents included many things that they did not clearly understand. Therefore, gaining insights from the empirical evidence, the following definitions were designed:

Sustainability Risk: *"A subjectively determined expectation of loss to the continuity and viability of a system caused by an imbalance in social, environmental and economic performance of the system"*.

Supply Chain Sustainability Risk: *"A subjectively determined expectation of loss to the continuity and viability of a chain due to an imbalance in social, environmental and economic performance at any tier in a focal firm's supply chain."*

Although the literature review highlighted definitions of sustainability and risk in the supply chain management discipline, there appear to be no studies that have presented a conceptual understanding of SCSR in the UK fashion industry. Therefore, this research has provided a novel and useful foundation for the understanding of the concept of supply chain sustainability risk in the UK fashion industry and a new contribution in theory.

How do the companies in the UK fashion industry manage their sustainability risk?

The empirical evidence showed that there is no specific SCSRMP followed by the case companies and that the processes adopted are largely embedded into the job duties and

responsibilities of the managers. Furthermore, this task mainly rests with the supply chain, ethical compliance and sourcing managers.

For SCSRM, almost all the case companies have ad hoc plans, however, most of the managers and directors were found to rely on experience, gut feelings, watching and listening to others in order to make SCSRM related judgements, decisions or for contingency planning. However, the case companies are making substantial progress and improvements in SCSRM by implementing new strategies. Yet, the final decisions are still made much more subjectively and based upon judgments and gut feelings with an overall emphasis to improve the bottom line. Further, the case companies use a mix of strategies highlighted in the literature for sustainability risk identification, prioritisation and mitigation. Furthermore, the case companies have overlapping strategies, as well as ones specific to the firm, due to the nature of the product, market and geographical location of the supply chain partners and the internal and external environment of the company.

Therefore, this research provided novel insights on the process of sustainability risk management within the five case companies in the UK fashion industry, which are geographically spread, shrunk in size due to continuous decline, complex and invisible and hence more prone to sustainability risk.

Why might the companies in the UK fashion industry not be managing their supply chain sustainability risk?

Factors which restrict companies or impede their progress or alternatively act as a driving force for sustainability and/or risk management within the supply chain were also observed as a prominent area of research interest in supply chain sustainability and/or risk management literature. At the same time, it was observed from the extant literature that the supply chain researchers have not yet explored such factors in the context of the UK fashion industry. Exploration of such issues was important to understand the nature of problems so that targeted and specific solutions to the companies in the UK fashion industry can be proposed.

The empirical evidence revealed numerous challenges to the companies in the UK fashion industry. The most important and common sustainability risk management

barriers or challenges to the case companies were, lack of resources, growth of fast fashion, organisational culture and management structure.

Consequently, this research provided new insights on the nature of barriers and challenges to the five case companies in the UK fashion industry. Further, a valuable contribution in this field was made by identifying a specific set of such issues so that suggestions can be made to the case companies for their management. Furthermore, from the outset of such barriers, and the desire to manage such complex and long standing challenges, some drivers for SCSRM such as safeguarding brand reputation, stimulator of innovation and coopetition were also found. These barriers and drivers were further grouped under organisational design and innovative management processes to design a supply chain sustainability risk management typology for the UK fashion industry.

How does supply chain sustainability risk impact the operational performance of companies in the UK fashion industry?

The empirical evidence showed that the case companies have no specific tool to measure sustainability risk performance in their supply chains. The major points of concern of the case companies were barriers or challenges to manage SCSR such as lack of resources, growth of fast fashion, organisational culture and management structure.

The researcher did not find any support for the fourth research question. Further, the respondents did not demonstrate any knowledge on this question as they do not have any direct tool to measure the impact of sustainability risk on the operational performance of their supply chain. Furthermore, it was also found that the respondents are not familiar with how barriers and challenges translate into performance. Therefore, it can be argued that one of the most important barriers and challenges is the understanding of the concept of sustainability risk itself, so that managers can understand and track performance. Hence, this research concludes that the case companies are following traditional performance measurement elements of cost, quality, price and lead time. There is no performance measurement tool in the case companies that can demonstrate or measure how sustainability risk impact the operational performance of the companies in the UK fashion industry.

The empirical evidence provided a valuable insight by exploring that the case companies perceive sustainability and risk as one and the same thing but this perception is not translated into comprehensive understanding or incorporated in corporate, operational and supply chain strategy, which could enable case companies to design a tool to measure its impact on the operational performance. Although empirical evidence is consistent with and supports theoretical propositions on certain elements of cost, quality, price, lead time and ethics, however, a new contribution is in providing a useful foundation for further exploration of the impact of sustainability risk on the operational performance of the five case companies in the UK fashion industry.

How can companies in the UK fashion industry manage their supply chain sustainability risk?

The empirical evidence suggests that the case companies first need to have a clear understand and knowledge about what are their current and potential future key sustainability risks. Second, case companies should have an organisational design which can facilitate and help case companies to manage their SCSR instead of design becoming a barrier or restrict case companies for doing so. Third, organisations should have certain innovative management processes for SCSRM such as those explained in the SCSRM typology; safeguarding brand reputation, stimulator of innovation and coopetition. SCSRM typology also implies that due to interlinks and interconnectedness, if there is a change in sustainability risk issues it will also bring and need changes in the other two areas of organisational design and management processes. Similarly, if there is any change in organisational design or management processes, it will bring changes in other areas and therefore SCSRMP will need to run holistically, keeping three areas in mind: sustainability risk, organisational design and management processes.

7.3 CONTRIBUTIONS

7.3.1 Theoretical Contribution

This research makes a valuable contribution in conceptual understanding by defining and operationalising the concept of sustainability risk and exploring supply chain sustainability risk management strategies in the context of five companies in the UK fashion industry. Specifically,

❖ It contributes to the understanding of the phenomenon of sustainability risk. That, in their very nature, risk and sustainability are one and the same thing, they both have potential to jeopardise organisational survival and continuity, should they are not managed proactively, effectively and efficiently.

❖ It defines the phenomenon of sustainability risk and supply chain sustainability risk. The definitions describe that organisations should maintain a fair balance in their economic, social and environmental activities. Any imbalance, for example, preference for the economic bottom line and ignoring social and environmental issues will lead to sustainability risk and ultimately business failure.

❖ A SCSRM typology has been developed which implies that organisations need to have a clear understanding and knowledge about key risks and sustainability issues both, current and potential future. The SCSRM typology also guides organisations that they should have a certain type of organisational design which should enable them to manage their SCSR. Further, organisations should also have innovative management processes to manage their SCSR. The SCSRM typology also implies that SCSRM process should run iteratively and holistically which means change in any one construct will bring and demand changes in other two constructs.

❖ The SCSRM typology highlights the dynamic and ever-changing nature of the fashion business environment and the need to design SCSRM processes accordingly.

❖ This research provided an in-depth empirical exploration of SCSRM in the contemporary context of five companies operating in the UK fashion industry. It explored how case companies perceive, implement and manage their supply chain sustainability risk. The exploration further provided useful and information regarding SCSRM and provided information can be used as benchmark.

❖ It explored drivers and barriers in managing SCSR to the UK fashion industry. As the extant literature described many drivers and barriers but it was unknown what type of drivers and barriers exist in the UK fashion industry. Exploring particular types of barriers, on the one hand helped to design SCSRM typology, and on the other enabled the researcher to suggest targeted solutions to those barriers.

❖ It showed that supply chain risk management is becoming overarching context for the case companies because the respondents included everything into SCSR, which they clearly do not understand what it is. It was concluded that anything which has potential to impact the bottom line, create disruptions and threaten business survival whether it is sustainability or any other issue is perceived as risk by the case companies.

❖ It provided various valuable platforms for future research in the area of supply chain sustainability risk management. Definitions, drivers and barriers and SCSRM typology are very basic foundations on which future researchers can build to explore various issues. Hence, this research provided a basic starting point for the future researchers.

7.3.2 Practical Contribution

This research provides a valuable lesson for managers that:

❖ Sustainability issues, by their very nature, are similar to risk issues. Therefore, they need to be managed in conjunction with each other instead of in isolation. Further, the perception that sustainability and risk are one and the same thing needs to translate into comprehensive understanding, incorporation into corporate, operational and supply chain strategy and ingrained into cultural fabrics of the firms in order to design a SCSRM strategy.

❖ The developed SCSRM typology places special emphasis on change management from the perspectives of key risks and sustainability issues to organisational design and management processes and consequently mitigation or management strategies. The most important feature of the developed SCSRM typology is that it not only suggests what to do but also guides how the case companies can do it. For example, various types of innovative management processes are mentioned in the SCSRM typology and described at various places in this thesis. Similarly, organisational design features are mentioned in the SCSRM typology as well as described in the within-case, cross-case and discussion chapters.

❖ The developed SCSRM typology will enable companies to manage SCSRs pro-actively, efficiently and effectively, because changes in organisational design and management processes will enhance flexibility and adaptability resulting into increased organisational capability to respond swiftly to internal and external market changes and sustainability risks.

❖ This research also demonstrated that retailers need to be more cooperative and should not design any strategy for SCSRM in isolation from their supply chain partners. A more collaborative, integrative and close relationships, facilitated by information technology advancements, are suggested to manage SCSRs pro-actively and cost effectively.

❖ A large number of suggestions for SCSRM are made in this thesis which can be used as benchmark by the case companies, because all the suggestions and

recommendations are derived from and based upon the working practices of five case companies in the UK fashion industry. Therefore, there are many avenues in this thesis for the case companies' managers to learn about SCSR identification, prioritisation and mitigation strategies, drivers and barriers and the best ways to managing SCSR.

7.4 LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The following are the main limitations of this research, which also leave scope for future research:

- ❖ This research only focused on the UK fashion industry. Therefore, future efforts for SCSRM can be viewed from a cross-country perspective, especially looking at Asian countries where most of the suppliers and manufacturers are located who supply to the UK and the European retailers. Further, derivers and barriers in managing SCSR could also be an interesting area to explore.
- ❖ Due to the decline of the UK textile and garment industry, many remaining companies in the UK fashion industry are SMEs. Therefore, the research participant case companies were also SMEs. Consequently, the research findings and designed SCSRM typology is only applicable and valid for the participant case companies and not generalisable or transferable to the global fashion industry. Thus, a more diverse set of companies could be selected, especially global retailers to explore the phenomenon of SCSR. This would further enhance transferability and generalisability of findings to the global fashion industry or industries which demonstrate similar supply chain, product or market characteristics such as electronics, fresh food, short product life-cycle and unpredictable and volatile demand.
- ❖ This research could not find the answer to the research question on how supply chain sustainability risk impacts the operational performance of the companies in the UK fashion industry. Therefore, future researchers can investigate the impact of supply chain sustainability risk on the operational performance of the companies.

❖ This research explored the phenomenon of supply chain sustainability risk in the context of five case companies in the UK fashion industry. Therefore, similar investigation could be carried out in other sectors to examine the relationship between risk, sustainability and supply chain management.

❖ The developed SCSRM typology can be further investigated to test its applicability and its impact on supply chain cost, sustainability risk management and supply chain performance improvement.

❖ This research found that the case companies do not have any formal process for SCSRM. Therefore, future investigation can focus on reasons why, despite widespread awareness of the importance of sustainability risk, companies still have no formal process or strategy to manage such critically important issue. Specifically, future researchers can focus on company size, to investigate whether organisational resources and in particular small size constraints companies from allocating resources or having a formal strategy for SCSRM.

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APPENDICES

APPENDIX ONE: SUPPLY CHAIN RISK MANAGEMENT STRATEGIES

SCRM Strategies	Description	Source
Partnerships	Joint ventures and strategic alliances where risk and rewards are shared through joint ownership. However, in less strong collaborations there is a long term commitment to share sensitive information, knowledge and benefit rather than joint ownership.	Harland et al. (2003) Manuj and Mentzer (2008) and Oke and Gopalakrishnan (2009)
Postponement	Under this strategy actual commitment of resources is delayed to maintain flexibility. Any function or operation can be postponed, for example, labelling, packaging, assembly and manufacturing or distribution.	Manuj and Mentzer (2008) and Bucklin (1986)
Speculation or selective risk taking	Also known as demand side risk management strategy, entailing forward buying and early commitments in anticipation of future demand, to address uncertainties.	(Manuj and Mentzer, 2008),
Hedging	Also known supply side risk management strategy. Under hedging, backups or options are developed so that a single event or natural disaster might not affect all operations and areas with the same magnitude. An example would be having a globally dispersed portfolio of suppliers and facilities.	(Manuj and Mentzer, 2008)
Multiple/Dual Sourcing	Under this strategy, a company sources from two separate suppliers simultaneously and these two suppliers could differ in many ways, for example, domestic/costly/ reliable versus foreign/unreliable/cheap.	Liu et al. (2010) Christopher et al. 2011; Choi and Krause, 2006
Control/share/ transfer	For each of these different tools are proposed by researchers. Manuj and Mentzer (2008) suggested vertical integration for control, contacts for share and agreements to transfer.	Manuj and Mentzer (2008)

SCRM Strategies	Description	Source
Security	The main aim of security strategy is to increase the ability to sort out what is moving, and identify unusual or suspicious elements. Using government guidelines, private initiatives like the use of RFID technology and the use of flexibility and redundancy can be used for security.	(Manuj and Mentzer, 2008), Knemeyer et al. (2009)
Avoidance	This strategy takes the form of divesting specialized assets, delaying entry into a market segment or participating in low uncertainty market areas. Further, where adverse events are pre-empted, attempts are made to reduce their impact, for example, in order to reduce quality risks, audits, approvals and testing measures are taken.	Manuj and Mentzer (2008)
avoidance, control, co-operation and flexibility	Control by increased stockpiling, use of buffers, increasing capacity in production, storage and imposing contractual obligations on suppliers. Co-operation, they proposed the use of joint efforts for increased visibility and understanding, sharing risk related information and preparation of continuity plans. Flexibility, they proposed postponement, multiple sourcing and localized sourcing.	Jüttner et al. (2003)
enablers of risk mitigation	Include: information sharing, increasing supply chain agility, trust building and collaborative relationships among partners.	Faisal et al. (2006)
Mix of strategies	Advocated Scenario planning, use of expert panels, Delphi studies, long term financial security arrangements, and developments in product/Market portfolio, Network Mapping and supply chain partnership	Harland et al. (2003) Manuj and Mentzer (2008)
Total Quality Management	Application of best practices of those who are well known in the field will help in reducing uncertainties and risks	Geary and Zonnenberg (2000)

SCRM Strategies	Description	Source
Supplier related strategies	Communicating and visiting suppliers, sometimes referred to as auditing suppliers, to make sure their operations are risk free in terms of quality, health and safety and working practices.	(Anderson and Anderson, 2009; Wagner and Bode, 2008)
In global sourcing perspective	Global sourcing and network re-engineering. Re-evaluating sourcing criteria and decisions in the global context. Re-evaluating supply base network design. Mapping and critical path analysis. Agility. Increasing visibility. Increasing velocity and acceleration. Creating a global sourcing risk management culture. Establishing global sourcing continuity teams. Board-led responsibility and leadership.	Christopher et al. (2011)
triple A principle (alignment, adaptability and agility)	Alignment entails commonality of interests, based on mutual trust. Adaptability implies that the business structure or model should be adaptable to adjust to market dynamics. Lee (2004) highlighted that adaptability can be integrated by the use of intermediaries, by creating flexible product designs or by monitoring new markets. The third element in the *'triple A'* principle is agility which, according to (Tang and Tomlin (2008), enables a firm to reduce the impact of short term changes in demand and supply. For greater agility, strategies such as postponement, product differentiation, modular design, standardisation, commonality, make-to-stock and make-to-order can be used (Tang and Tomlin, 2008).	Lee (2004), Tang and Tomlin (2008)
Use of mix of qualitative strategies	Conduct interviews and brainstorming sessions. Make comprehensive check lists problem lists. Utilize Delphi technique. Design a risk register and a qualitative probability impact table. Design resilience supply chain based upon multiple things such as, assumption analysis, contingency planning, increasing visibility, multiple and alternative Sourcing. If possible redesign supply chain and reduce its length. Aligning supply chain partners' interest. Use technology and relationships to build an early warning system and implement best information system (CPFR, VMI, ECR concepts).	Simon et al. (1997), White (1995) and Tang and Musa (2011).

APPENDIX TWO: INTERVIEW GUIDE

Semi-Structured Interview Protocol

- ❖ Introducing each other: the researcher and the interviewee
- ❖ Re-iterating confidentiality and anonymity
- ❖ Asking permission for audio tape

Question one: definitions

Q#1a: How do you define Risk to your company and supply chain?

Q#1b: How do you define sustainability?

Question two: key sustainability and risk issues

Q#2a: What are the key Risks to your company and Supply Chain?

Q#2b: What are the key sustainability issues in your company and supply chain?

Question three: knowledge, understanding and behavioural aspects on SCSRM

Q#3a: Do you think risks and sustainability issues must be given due attention in fashion supply chains?

Q#3b: Do you think UK fashion industry is responding to the risks and sustainability issues?

Q#3c: A School of thought believes that there is no need for managing sustainability issues in fashion? How will you respond?

Question four: SCSRM process

Q#4a: How do you Identify Risks to your company and Supply chain?

Q#4b: How do you Identify sustainability issues in your company and Supply chain?

Question five: SCSRM process

Q#5a: How do you prioritise sustainability issues and risks in your company and supply chain?

Q#5b: Would you please share the most recent incident relevant to sustainability or risk issues that your company and supply chain faced?

Q#5c: What could be the best ways to manage the sustainability and risks to your company as well as supply chain?

Question six: Impact on operational performance

Q#6a: Do you think fashion businesses can get adversely affected on adoption of sustainability and risk management strategies?

Q#6b: Do you think the sustainability and risk issues that you have just described affect some particular area, operation or aspect of your company and supply chain?

Q#6c: What you think are the main challenges in effective sustainability and risk management in your company as well as supply chain?

Question seven: brand and importance of SCSRM

Q#7a: Do you think these sustainability and risk issues would have been different if you were a non-branded company?

Q#7b: Do you believe tomorrow morning sustainability will be a risk issue for fashion supply chains?

APPENDIX THREE: KEY RISKS AND SUSTAINABILITY ISSUES

KEY RISKS AND SUSTAINABILITY ISSUES AT CC1

Key Risks	Key Sustainability Issues
❖ Availability of trained and skilled workers in the UK and Southeast Asia and with the right price. ❖ Stability of source country. ❖ Rising wages. ❖ Legislation ❖ Price inflation of raw materials. ❖ Restrictive tariffs and duties. ❖ Capacity constraints. ❖ Stagnant culture. ❖ Availability and continuity of raw materials. ❖ Cost issues, especially cost of labour and energy. ❖ Import and Export risks, duty, the EU suddenly going to impose tariffs and duties on certain countries. ❖ Geo-Political risks (especially China and Japan). ❖ Global economic uncertainty. ❖ Consumer attitude. ❖ Brand reputation. ❖ Industrial uncertainty in the UK. ❖ Price points at market level. ❖ Logistics and transport risks. ❖ Health and safety risks ❖ Nature of basic raw material ❖ Purchasing power of consumer. ❖ Lack of UK manufacturing and old infrastructure.	❖ Availability of trained and skilled workers in the UK and Southeast Asia and with the right price. ❖ Rising wages. ❖ Legislation. ❖ Global economic uncertainty. ❖ Health and safety issues. ❖ Stagnant culture. ❖ Complexity, non-availability and cost of sustainable options. ❖ Import and export problems. ❖ Cost, especially energy and labour. ❖ Low customer service level. ❖ Waste we produce. ❖ Brand reputation. ❖ Being reactive rather than pro-active. ❖ Lack of knowledge and education. ❖ Extended supply chain distribution and transportations side ❖ Nature of basic raw material ❖ Consumer attitude. ❖ Availability, continuity and price of the raw material at the quality we want. ❖ High final product price.

Key Risks (CC1)	Key Sustainability Issues (CC1)
❖ Level of trust involved in the supply chain. ❖ Intellectual property risks. ❖ Duplication or misappropriation: risk of theft and copying the intellectual property. ❖ Extended supply chain, long lead time, visibility and control. ❖ Lack of communication. ❖ Security risks. ❖ Environmental damage caused by flooding. ❖ Quality risk, Quality problems, colour fastness issue, shrinkage issue ❖ Cheap markets. ❖ Stagnant culture. ❖ Capacity and slow speed of turnaround. ❖ Retailer's pressure, expectations and reasonability of time. ❖ New markets, products and materials. ❖ Lack of knowledge, information and data. ❖ Size of the company.	❖ Price and customer's pressures at Market level. ❖ Lack of sustainable options and limited recyclability ❖ High cost of sustainable materials ❖ Environmental pressures ❖ Long lead times. ❖ Less visibility and control, especially on supply side of the supply chain. ❖ Size and financial position of the company. ❖ Lack of information sharing and communication within the business and supply chain. ❖ Lack of coordination from retailer. ❖ Growth of fast fashion. ❖ Lack of supply chain knowledge. ❖ New markets and materials. ❖ Nature of basic raw material. ❖ Lack of UK manufacturing and old infrastructure. ❖ -Stagnant culture.

KEY RISKS AND SUSTAINABILITY ISSUES AT CC2

Key Risks	Key Sustainability Issues
❖ Shortage of technically skills workers.	❖ Dependency on existing workforce.
❖ Nature of basic raw material.	❖ Quality issues.
❖ Global economic and supplier market uncertainty.	❖ Availability and volatility of raw material prices.
❖ Industrial Uncertainty (The UK fashion Industry)	❖ Non-availability of skilled and trained workforce.
❖ Availability and prices of raw material.	❖ Price points at market level.
❖ Company size and weak financial position.	❖ Sustaining margins and market share.
❖ Stagnant culture.	❖ Health and safety issues.
❖ Energy, labour and operating costs in the UK.	❖ Costs: energy, labour and operating.
❖ Quality of main product as well as components.	❖ Nature of basic raw material.
❖ Outsourcing and long lead times.	❖ Lack of cooperation from retailer.
❖ Price points at market level.	❖ Lack of communication and information sharing within the business and supply chain.
❖ Aging workforce with now newness.	❖ Outsourcing.
❖ Infrastructure: Old factory and building.	❖ Infrastructure.
❖ A large number and frequently changing styles.	❖ Lack of supply chain knowledge.
❖ Legislation.	❖ Size and weak financial position of the company.
❖ Consumer attitude and awareness.	❖ Global economic uncertainty.
❖ Perception about textile manufacturing.	❖ Stagnant culture.
❖ Not achieving on time and full.	❖ Legislation.
❖ Large amount of waste.	❖ New materials and markets.
❖ Geo-Political risks.	❖ Weather conditions and natural disasters.
	❖ Outsourcing.

Key Risks (CC2)	Key Sustainability Issues (CC2)
❖ Complex and Extended supply chain.	❖ The amount of waste.
❖ Import and export risks.	❖ Aging workforce.
❖ New materials and markets.	❖ Visibility and control at the supply side of the company.
❖ Environmental and ethical issues.	❖ Competition.
❖ Weather conditions and Natural disasters.	❖ Consumer habits.
❖ Dependency risk.	❖ Lack of UK manufacturing.
❖ Health and safety risks.	❖ Extended and complex supply chain and long lead times.
❖ Volatility of demand and raw material prices	❖ Lack of supply chain knowledge.
❖ Supply chain visibility and control	❖ Move towards retailing and fast fashion.
❖ Competition.	❖ Environmental problems.
❖ Consumer confidence and lack of spending.	❖ Weather conditions and natural disasters.
❖ Brand image.	❖ Poor infrastructure.
❖ Lack of communication and information sharing within the business and supply chain.	❖ Brand Image.
❖ Lack of UK manufacturing.	❖ Import and export risks.
❖ Move towards fast fashion and retailing.	❖ Factory work perception and lack of interest from young generation.
	❖ Price points at market level.
	❖ Frequently changing styles.

KEY RISKS AND SUSTAINABILITY ISSUES AT CC3

Key Risks	Key Sustainability Issues
❖ Availability, price and continuity of supply. ❖ Dealing with the customer -Multi customer factories. ❖ Ethical compliance issues. ❖ Quality risks and product recall. ❖ Awful weather conditions. ❖ Complexity in processes. ❖ Lack of communication and information sharing within the business and with supply chain partners. ❖ Reputation risk. ❖ Outsourcing, extended supply chain and long lead times. ❖ Health and safety risk ❖ Failure to deliver on time and in full. ❖ Logistics and transportation risks. ❖ Dependency risks. ❖ Machine type risks. ❖ Capacity risks. ❖ Track and traceability risks. ❖ Failure of risk identification at sample stage or product planning phases. ❖ Company size and financial position. ❖ Lack of skills and trained workforces. ❖ Nature of basic raw material.	❖ Availability, price and continuity of supply. ❖ Repeatability and consistency in manufacturing processes. ❖ Increasing unexpected outcomes. ❖ Complicated processes: documents, certifications ❖ Company size and weak financial position. ❖ Global economic uncertainty. ❖ Supply and supplier market uncertainty. ❖ Stagnant culture. ❖ Quality maintenance ❖ Trying to be a mixed producer ❖ Lack of technically trained and skilled workforce in the UK. ❖ Old dated technologies and poor infrastructure. ❖ Consumer attitude. ❖ Extended supply chain and long lead times. ❖ Lack of communication and information sharing within the business and with supply chain partners.

Key Risks (CC3)	Key Sustainability Issues (CC3)
❖ Lack of UK manufacturing. ❖ Uncertainty in suppliers' market. ❖ Lack of alternatives or substitutes. ❖ Volatility of consumer demand and raw material prices. ❖ Operating costs in the UK. ❖ Limited and financially weak suppliers. ❖ Currency, import and export risks. ❖ Old dated technology and poor infrastructure. ❖ Perception about textile manufacturing and lack of interest from young generation. ❖ New materials, chemicals and markets. ❖ Competition and cheap imports. ❖ Retailers' pressure and attitude. ❖ Mixing core with fashion lines. ❖ Worldwide economic situation and weak consumer confidence. ❖ Legislation. ❖ Supply chain visibility and control. ❖ Consumer behaviour.	❖ Currency fluctuations. ❖ High amount of waste. ❖ Global economic uncertainty. ❖ Bad weather conditions. ❖ Nature of basic raw material. ❖ Operating costs in the UK. ❖ Lack of alternatives and substitutes. ❖ Lack of supply chain knowledge. ❖ Short term performance measurement. ❖ Legislation. ❖ Cheap imports. ❖ Volatility in consumer demand and material prices. ❖ Retailers' attitude and stringent requirements. ❖ Lack of supply chain visibility and control. ❖ Business and brand reputation. ❖ New materials and markets. ❖ Lack of UK manufacturing. ❖ Outsourcing.

KEY RISKS AND SUSTAINABILITY ISSUES AT CC4

Key Risks	Key Sustainability Issues
❖ Capacity risk. ❖ Supplier market Transformation ❖ Price and margin pressures from retailer. ❖ Quality risks. ❖ Availability and sustainability of trained technical supply of human capital. ❖ Costs, especially energy and labour. ❖ Nature of basic raw material. ❖ Availability, continuity and price of raw material. ❖ Environmental pressures. ❖ Legislation. ❖ Currency fluctuations. ❖ Business continuity in terms of customer's business. ❖ World economic environment and downturn in consumer demand. ❖ The natural disasters. ❖ Import and export risks. ❖ Our ability to innovate. ❖ Aging workforce and dependency risk. ❖ Slow moving and complex supply chain. ❖ Visibility and control risks. ❖ Size of the company. ❖ Old dated technology and infrastructure. ❖ Lack of quick response capabilities. ❖ Complex manufacturing process and bottlenecks.	❖ Capacity constraints. ❖ Raw materials shortage, quality, price and continuity issues. ❖ Supplier market transformation. ❖ Price Pressures at market level. ❖ Lack of skills and technically trained workforce. ❖ Nature of basic raw material. ❖ Environmental and ethical pressures. ❖ Volatility of currency and demand. ❖ Increase potential supply routes. ❖ Business continuity in terms of customers business. ❖ Lack of UK manufacturing. ❖ The natural disasters. ❖ Energy and operating costs. ❖ Global recession and downturn in consumer demand. ❖ Import and export issues. ❖ Our ability to innovate. ❖ Aging workforce and dependency on existing workforce. ❖ Nature of basic raw material ❖ Visibility and control, especially on supply side of the chain. ❖ Extended supply chain and long Lead times. ❖ Not demand driven. ❖ Re-active rather than Pro-active. ❖ Price points at market level.

Key Risks (CC4)	Key Sustainability Issues (CC4)
❖ Lack of industry collaboration. ❖ Changing global market characteristics. ❖ Physical risk, due to machinery on site. ❖ New materials and markets. ❖ Declining profit margins. ❖ Cheap imports and markets. ❖ Geographical and political risk. ❖ Supply chain disruptions and continuity risks. ❖ Extended supply chains and long lead times. ❖ Lack of integration and collaboration within the company, supply chain and the industry. ❖ Price points at market level. ❖ Outsourcing. ❖ Use of sub-contractors. ❖ Old dated technology and poor infrastructure. ❖ Higher turnover of staff and isolation from the industry. ❖ Risk of becoming more and more of a mixed manufacturer. ❖ Growth of fast fashion. ❖ Consumer attitude. ❖ Stagnant culture. ❖ Increased textile regulations and textile testing requirements across the world and potential for failure of testing. ❖ Business and brand reputation. ❖ Our ability to deliver on time and in full to the customer. ❖ Shortage of talent. ❖ Lack of product and supply chain knowledge.	❖ Failure to get goods and materials within set parameters of costs, quality, time and price. ❖ Stagnant culture and difficulty in change management. ❖ Size and financial position of the company. ❖ Retailer's pressures and demands for price, margins and lead times. ❖ Business and brand reputation. ❖ Lack of visibility and control especially at the upstream level of the supply chain. ❖ Use of sub-contractors. ❖ Growth of fast fashion. ❖ Cheap imports and cost pressures. ❖ Legislation. ❖ Old dated technology and poor infrastructure. ❖ Supply chain disruptions. ❖ Characteristics of new markets. ❖ Information sharing and communication problems within the company and supply chain. ❖ New materials and markets. ❖ Inability to achieve 100% on time and in full delivery performance. ❖ Final product price. ❖ Lack of product and supply chain knowledge. ❖ Lack of collaboration and integration within company, supply chain and industry. ❖ Consumer attitude. ❖ Perception and attitudes towards textile manufacturing in UK.

KEY RISKS AND SUSTAINABILITY ISSUES AT CC5

Key Risk Issues	Key Sustainability Issues
❖ Stability and reliability of suppliers. ❖ Product quality and potential to fail testing. ❖ Fast changing fashion trends. ❖ Global recession and consumer confidence. ❖ Size and weak financial position of the company. ❖ Sourcing from small manufacturers and potential for them to go bust. ❖ Capacity problems. ❖ Long lead times. ❖ Increasing supply chain complexity. ❖ Over stocking and markdowns. ❖ Raw material price fluctuations. ❖ High operating costs in the UK. ❖ Legislation. ❖ Market competition. ❖ Lack of product and supply chain knowledge. ❖ Retailers' pressure for price and margins. ❖ Difficulty, complexity and cost involved in documentation on environmental, ethical and social concerns in the supply chain. ❖ Consumer attitude.	❖ Weak financial position of the company. ❖ Size of the company. ❖ Reliability and stability of the supplier. ❖ Product quality issues. ❖ Stagnant growth. ❖ Stringent requirements for environmental and ethical issues from the retailer. ❖ Retailers' pressure for price, margins and discounts. ❖ Fast changing fashion trends. ❖ Consumer attitude. ❖ Legislation. ❖ Increasing supply chain complexity. ❖ Lack of resources and knowledge. ❖ Outsourcing. ❖ Quality problems. ❖ High turnover of staff.

APPENDIX FOUR: BEST WAYS TO MANAGE SCSR

SUGGESTIONS FROM CC1:

- ❖ Establish an industry working group: a sort of self-regulatory body within the fashion or textile industry that would set guidelines and terms of behaviour within the industry, rather than this being done by environmentalists, socialists and politicians.
- ❖ Branding and marketing to promote premium quality, British heritage and made-in-Britain.
- ❖ Being proactive rather than re-active and pre-empt the situation.
- ❖ Visionary management: Responsive, knowledgeable, live and decent management having very clear responsibilities and understanding about what must be done to achieve the goals of the company.
- ❖ Having a very well trained professional team that communicates well on a global basis. Introduce apprenticeships and provision of professional training, and get the right level of expertise in different functional areas.
- ❖ Have a formal process, events and a clear timetable for SCSRM.
- ❖ Have periodic review sessions around SR issues and disseminate learning to both within the business and supply chain partners.
- ❖ Champion someone: It should always be at the forefront of somebody's ideas and look forward and made a dedicated task.
- ❖ Target emerging markets, especially BRICS (Brazil, Russia, India, China and South Africa), due to greater demand for luxury garments in those markets.
- ❖ Explore alternatives and substitutes to overcome basic raw material problems of shortages and price fluctuations.
- ❖ Transform company culture into more agile, proactive and sustainable.
- ❖ Shorten supply chain length to overcome complexity, increase visibility and to protect brand reputation.
- ❖ Have a constant focus on innovative product and process development. Build partnerships, integration and collaboration, increase information sharing and communication, within the company, supply chain and outsiders (competitors).
- ❖ Share your resources within the industry to save cost and enhance efficiencies and to become a resilient company.
- ❖ Update the existing technology and buy new technology to save labour costs, to be responsive and more agile.
- ❖ Integrate sustainability risk management strategies in company strategies and goals.
- ❖ Have long term view
- ❖ Never compromise on quality.

SUGGESTIONS FROM CC2:

- ❖ Not to change styles so often and not make the collections too big. Offer simplified products, as one way to minimize sustainability risks internally. Don't mix core with fashion or don't add unlimited fast fashion lines and keep quality as a priority.
- ❖ Set long term contracts with suppliers for the continuity of supply and to get average prices benefits.
- ❖ Provide the best customer service by setting goals such as on-time-in-full (OTIF) and right first time.
- ❖ Be proactive and look at future critical issues. Look at the entire chain and take a whole process view to be able to manage SCSR effectively.
- ❖ Have R&D in place and use universities and colleges for this purpose and make different issues as part of students' dissertation or research project. Introduce apprenticeships and cross train workforce but first train the trainers to be able to deliver.
- ❖ Explore alternatives and substitutes to save costs. Look at new and emerging markets.
- ❖ To minimize industrial uncertainty build close working relationships, increase information sharing and communication.
- ❖ Use already existing bodies and forums for guidance and information: use European Law and European legislation. These are easy to access and free to download, and save a lot of investigative work.
- ❖ Visit suppliers, especially basic raw material providers, and supply chain partners, speak to them and see what they are doing, what they are thinking to do and impact it will have.
- ❖ Always look for better management practices; attend industry conferences, seminars, join different bodies and be open to change. Develop supply chain knowledge and expertise
- ❖ Multichannel Retailing: use flagship stores and online platforms (Internet) for greater product visibility. Try to be visible in the world's fashion capitals like London, Paris, New York, and Tokyo....etc.
- ❖ If possible make sustainability risk management as a dedicated task.
- ❖ Always try to share, attract and retain a good pool of resources even if you have to collaborate with your competitors.
- ❖ Adapt an incremental approach to complex and long standing issues.
- ❖ Acquire efficient machinery, better use of technology and innovation to reduce cost and to be quick response. Use software that might help with logistics and supply chain.

- ❖ Shorten production and lead times.
- ❖ Always have more than one option. Scenario planning around natural disasters and catastrophic events.
- ❖ Reduce all types of waste.
- ❖ Recruit new people: Provide a better working environment and build repute as a credible employer to attract a talented workforce.
- ❖ Promote team working in the business.
- ❖ Risk management and sustainability strategies should be part of business structure, not an isolated strategy
- ❖ Be driven by what the consumer wants, which in turn is driven by what the consumer told, which implies a need for better branding and marketing.
- ❖ Continuous cultural improvement, constantly update working practices, be adaptable.
- ❖ Good communication and information within the business and supply chain partners can help to pre-empt and manage some sustainability risks beforehand.

SUGGESTIONS FROM CC3:

- ❖ You have two options: First, increase your inventory so that those sustainability risks give you a longer breathing space to come up with a reaction to negate their impact. Second, geographically reduce the size of supply chain and get it all local.
- ❖ Focus on cost management.
- ❖ Keep a close eye on changing legislation.
- ❖ Increase automation and up-date machinery to reduce labour costs and to be responsive.
- ❖ Introduce new performance measurement approaches which integrate sustainability risk management criteria.
- ❖ Integrate SCRM into your corporate strategy and bring experts inside and design a formal strategy for SCSRM.
- ❖ Use already existing platforms for information purpose.
- ❖ Record data and disseminate information on different sustainability risk in different departments.
- ❖ Visit your supply chain partners and see what they're planning to do in next five, ten or twenty years and how does this will impact you.

- Increase communication, co-operation and collaboration: within the company and with supply chain partners.
- Bring or develop, knowledgeable, flexible and responsive management team.
- Focus on culture and change management.
- Exploit new markets and entre into multi-channel retailing.
- Adapt an incremental approach and be proactive, try to do easy steps first, adapt.
- Have a dedicated team or person or a champion for SCSRM.
- Carefully look at vendor's KPIs from company's strategy point of view.
- Do not mix core with fashion lines.
- Spend more time understanding the supply base to develop supply chain knowledge and to understand the customer.
- For existing as well as any new product or process, it is necessary to assess fairly and correctly the associated sustainability risks.
- Be demand driven and play contract: have a pull strategy (CC3's strategy is push at the moment).
- Branding and Marketing: for brand image and to educate consumer.
- Help, even financially, and look after your suppliers this will help to managing raw material related SRs.
- Information sharing, communication and collaboration within the company, supply chain and with relevant stakeholders can help to build a quick, innovative, responsive and flexible supply chain.
- Have plenty of options internally and plenty of options externally for an effective SCSRM and to be resilient. Scenario planning, always have contingency plans and make judgments. Try to have manuals.
- Take a long term view: you have to try and look where you are going or want to be in the future, because depending where you want to be, it can lead you to different solutions.
- Train people, especially cross-train, and bring in apprentices.
- Search for sustainable alternatives and substitutes and have innovative product and process development as your business strategy.
- Increase integration and collaboration with the company and supply chain in the supply chain.
- Reduce all types of waste.

SUGGESTIONS FROM CC4:

- ❖ Reducing supply chain length and keeping very close to the market place can help in managing complexity, increase visibility, to protect brand image and to provide better customer service.
- ❖ Keeping in daily and weekly contact with supply chain partners.
- ❖ Establishing relationships whereby you believe the business will benefit from the continuity of supply.
- ❖ Manage culture, making it more agile, responsive and proactive.
- ❖ Education: getting certain educational establishments focused and specialist in certain areas of the business, especially technical skills.
- ❖ In-house training: training people to a technical textile skill level for the organization.
- ❖ Having a process of postponement.
- ❖ Design: adopt flexible design which can be inter-changed over machines.
- ❖ Develop flexibility, options, alternatives and substitutes.
- ❖ Integrate SCSRM strategies into your corporate strategies.
- ❖ Don't move to fast fashion if your business model is for luxury fashion.
- ❖ Manage costs instead of reducing them.
- ❖ Effective and efficient communication and information sharing within and outside the company, supply chain and within the industry.
- ❖ Buy new technology for quick response and to make labour intensive tasks automated.
- ❖ Be proactive, innovative and competitive: create differentiation wherever it is possible in the business and supply chain.
- ❖ Training and practice: First it is necessary to accept that risks exist and then try to do a more comprehensive training programme in these areas.
- ❖ Cross train your workforce so that people can move between jobs, and perform other tasks or work on other machines, to alleviate bottlenecks in the manufacturing process.
- ❖ Try to nominate a champion like a sustainability or risk management champion if it is not possible to afford to have a dedicated team or full time employee for this purpose.
- ❖ Scenario and contingency planning, especially by senior management in the business. Increase the ability to predict and actually pre-empt disasters.
- ❖ Keep an eye on newness: make sure that any risks associated with design and new product and production are mitigated.
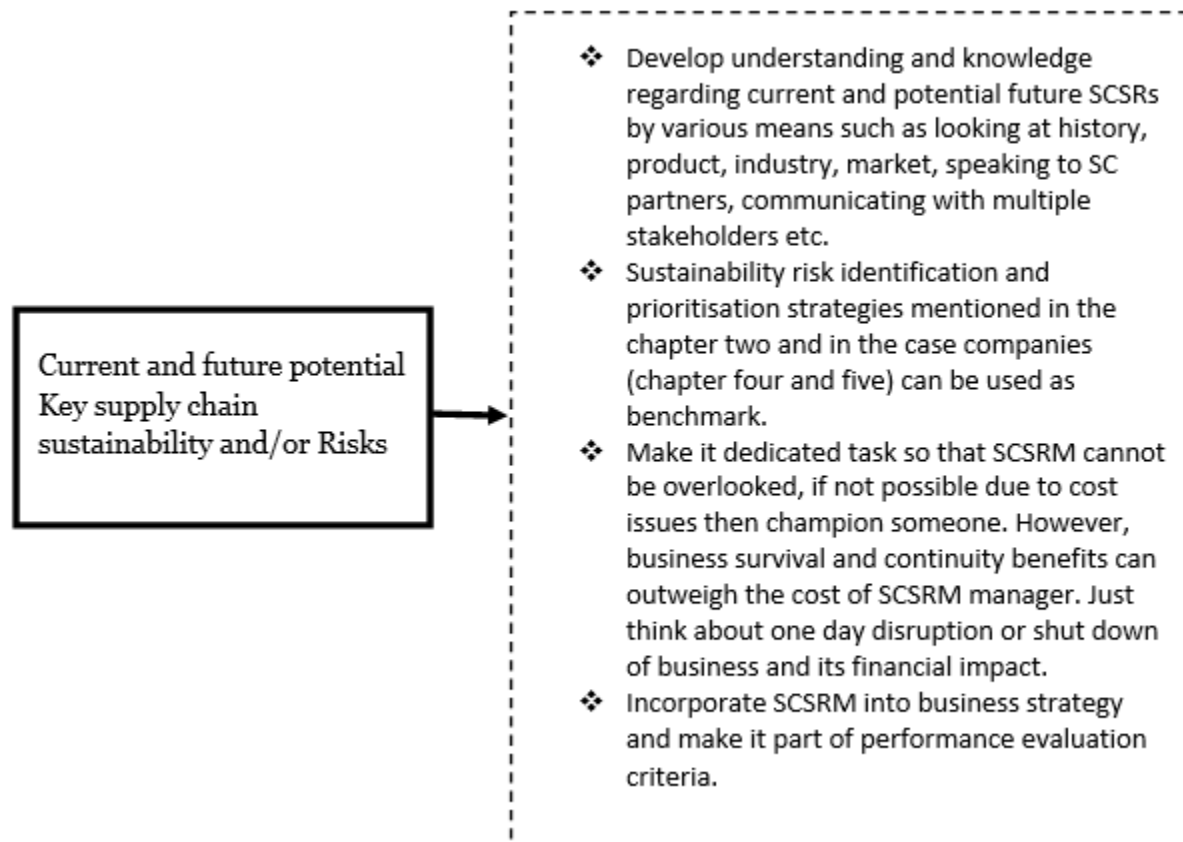
- ❖ Repeatable production process: a sound and repeatable production process enhances ability to deliver samples on time, which will also make it possible to sell more and enhance ability to get bulk orders for samples.
- ❖ Enhanced communication and much closed interface between different departments can also help in sustainability risk management.
- ❖ Manage customer expectations: Don't offer too much.
- ❖ A reactive workforce is obviously very important.
- ❖ Adapt an incremental approach to resolve long standing issues.
- ❖ If a company has a certain form of management system like ISO running that could be helpful criteria.
- ❖ Ask for documents and written information for SCSRM analyses.
- ❖ Get a habit of double checking and data recording.
- ❖ Sharing risk rather than transferring it.
- ❖ Build an industry wide partnership including your competitors to share resources and manage SCSRs.
- ❖ Buy new technology to streamline the process as much as possibly can.
- ❖ Reduction in waste.
- ❖ Story telling: consistency of making the story of how the garments are put together.
- ❖ Branding and Marketing: Make textile manufacturing a sound career opportunity.
- ❖ Create 'OTIF' on time in full culture, and have it as your performance measurement criteria.
- ❖ Joint supply chain planning and collaboration.
- ❖ Enter into multi-channel retailing.

SUGGESTIONS FROM CC5:

- ❖ More collaborative and cooperative behaviour from retailers can help grow small businesses like CC5.
- ❖ Having a good mix of fast fashion and basic lines can help continuity of business and cash flow.
- ❖ Explore new markets.
- ❖ Make sure suppliers earn enough to re-invest in their business to ensure continuity of your own business.
- ❖ Have as many options as possible, especially in terms of suppliers; you need to find new suppliers who can supply small orders, who are quick and reactive, who can help in design and development.
- ❖ Keep an eye on law and regulations and prepare yourself.
- ❖ If you have the resources, make SRMP a dedicated task for someone.
- ❖ It has to be part of your business and corporate strategy.
- ❖ You need to have a culture of due diligence rather than ticking boxes and fulfilling document requirements.
- ❖ Your business strategy, corporate strategy and planning should be designed in collaboration with your supply chain partners.
- ❖ Do scenario planning, have contingency plans but most importantly think what you will do in a disaster.
- ❖ You can always attract big retailers by offering innovative products and solutions and for this you need to join R&D agencies, subscribe to information-providing agencies and review your processes to learn and improve.
- ❖ Multiple retailing can definitely help business growth.
- ❖ Increase your internal and external communication and information sharing.
- ❖ Adopt modern technology for agility, responsiveness and better customer service. This will also help in reducing labour costs.
- ❖ Bring cultural, management and process changes and manage change constantly.
- ❖ Share your resources and adapt a collaborative approach.
- ❖ Manage your costs.

APPENDIX FIVE: SCSRM TYPOLOGY

First construct: understanding and having knowledge about current and the future potential key risks and sustainability issues.

Current and future potential Key supply chain sustainability and/or Risks →

- ❖ Develop understanding and knowledge regarding current and potential future SCSRs by various means such as looking at history, product, industry, market, speaking to SC partners, communicating with multiple stakeholders etc.
- ❖ Sustainability risk identification and prioritisation strategies mentioned in the chapter two and in the case companies (chapter four and five) can be used as benchmark.
- ❖ Make it dedicated task so that SCSRM cannot be overlooked, if not possible due to cost issues then champion someone. However, business survival and continuity benefits can outweigh the cost of SCSRM manager. Just think about one day disruption or shut down of business and its financial impact.
- ❖ Incorporate SCSRM into business strategy and make it part of performance evaluation criteria.

Major Barriers in managing SCSR:

Major Barriers	Sub-Themes
Organisational Resources	❖ Shortage of technically skilled workforce: In the UK and overseas. ❖ Nature of Basic raw Material: Basic commodity subject to alternative uses, shortages and price fluctuations. ❖ Firm Size: Small size and weak financial position. ❖ Technology: Old dated, slow and inefficient.
Growth of Fast Fashion	❖ Disappearance of clusters: Due to decline of the UK textile and manufacturing industry. ❖ Increased supply chain complexity. ❖ Consumer behavior: Preference for fast fashion and price without sustainability considerations. ❖ Increased pressure from retailer: For margins, short lead times and mixed production.
Organisational Culture	❖ Resistance to change: Due to aging workforce and stagnant culture. ❖ Lack of communication and information sharing.
Management Structure	❖ Disintegration and control orientation. ❖ Lack of knowledge about SCSRM.

SCSRM drivers:

Drivers of SCSRM	Sub-Themes
Safeguarding Brand Reputation	❖ Lack of supply chain visibility and control. ❖ Move to Mixed supplier/manufacturer: Classic/premium quality/luxury to fast fashion.
Stimulator of Innovation	❖ Capacity development. ❖ New product and process development. ❖ Partnerships.
Co-opetition	❖ Capacity sharing. ❖ Information sharing and building relationships.

Current situation and context of case companies:

Construct	Description	Relevant major barriers/challenges in managing SCSRs
Organisational Situation	Representation of what is current situation within the organisations in terms of managing SCSRs.	❖ Lack of organisational resources. ❖ Organisational culture. ❖ Management structure.
Organisational context	Representation of the current context in which case companies are operating.	❖ Growth of fast fashion.

Second construct of SCSRM typology: Organisational design

Third construct of SCSRM Typology: Innovative Processes for SCSRM

Construct	Description	Relevant innovative processes for SCSRM.
Innovative Management Processes	❖ SCSRM requires a continuous focus on developing innovative processes for SCSRM. ❖ In the case companies existing processes proved to be obsolete due to changes in product, industry and customer requirements. ❖ Any effort to manage SCSRs with existing processes has potential to lead to other multiple types of uncontrolled SCSRs which could potentially cause failure of business or jeopardies business continuity.	❖ Safeguarding Brand Reputation ❖ Stimulator of Innovation. ❖ Co-opetition.