

# **The relationship between sustainable supply chains and economic success in the retail clothing industry in South Africa**

**Garrett Whyte**

**A research report submitted to the Faculty of Science, School of Animal,  
Plant & Environmental Sciences, University of the Witwatersrand, in  
partial fulfilment of the requirements for the degree of Master of Science  
in Interdisciplinary Global Change Studies**

**Johannesburg, 2016**

## ABSTRACT

This study examined the retail clothing industry of South Africa and the associated sustainability practices, with particular focus on supply chain management. This study was conducted in order to test the relationship between sustainable supply chains and profitability in the hope that it might provide incentives for managers to adopt sustainability into their supply chain operations. The study made use of a case study analysis through a collection of quantitative and qualitative data of the sample organisations' integrated reports and financial results to determine if there was a correlation between sustainable business practices and long-term economic profitability. Interviews were also conducted with industry participants in order to gain further insight. The study found that organisations that showed the highest investment along all three pillars of sustainability also experienced the largest and most stable economic growth within the sample. Although this could not be validated due to the limited sample size, the results did infer a positive association between sustainable supply chain management and economic success. It was also found that investing into the social capital of an organisation did have the potential to improve the economic success of an organisation within the retail clothing industry of South Africa. This study identified sustainable supply chain management frameworks that could benefit organisations within this industry financially. Further research is required into this field but it can be inferred that the incorporation of sustainable supply chain management can lend itself towards economic success within the retail clothing industry of South Africa.

## DECLARATION

I, Garrett Whyte, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Science (Interdisciplinary Global Change Studies) in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Garrett Whyte

---

Signed at .....

On the ..... Day of ..... 2016.....

## ACKNOWLEDGEMENTS

I would like to express my thanks to the University of the Witwatersrand for allowing me the opportunity to complete my Masters of Science in Interdisciplinary Global Change studies through the school of Animal, Plant and Environment Sciences. Thank you also to the willing participants of this study who readily made information available to me and were always willing to talk and answer my queries and follow up questions. I would further like to make mention of Anna Dodds, who consistently provided guidance, assistance and wisdom. A big thank you to all my loved ones and family who have been in my corner these past couple of years and who have been patient and encouraging with regards to my work and at times stressful attitude; even when I felt overwhelmed by this project. Last of all, but certainly not least, I would like to thank my supervisor, Douglas Taylor. Thank you for taking my project on and for all the encouragement and advice you have given me over the past two years. Without your guidance and assistance, this project would have been insurmountable. You believed in my capabilities and always pushed me to dig deeper, work harder and achieve more.

# Table of Contents

|                                                          |          |
|----------------------------------------------------------|----------|
| ABSTRACT .....                                           | ii       |
| DECLARATION.....                                         | iii      |
| ACKNOWLEDGEMENTS.....                                    | iv       |
| <b>1. INTRODUCTION .....</b>                             | <b>1</b> |
| Purpose of the study .....                               | 1        |
| Context of the study .....                               | 1        |
| Problem statement .....                                  | 3        |
| <i>Main problem</i> .....                                | 3        |
| <i>Sub-problems:</i> .....                               | 3        |
| Significance of the study .....                          | 3        |
| <b>2. LITERATURE REVIEW .....</b>                        | <b>5</b> |
| Introduction .....                                       | 5        |
| Supply chain management.....                             | 5        |
| Sustainability.....                                      | 7        |
| <i>Environmental Performance</i> .....                   | 10       |
| <i>Corporate environmental practices</i> .....           | 10       |
| <i>Social Sustainability</i> .....                       | 11       |
| Supply Chain Performance .....                           | 13       |
| Sustainable supply chain management .....                | 20       |
| 1. <i>Manufacturing by-products</i> .....                | 22       |
| 2. <i>By-products producing during product use</i> ..... | 22       |
| 3. <i>Product life extension</i> .....                   | 22       |
| 4. <i>Product end of life</i> .....                      | 22       |
| 5. <i>Recovery processes at end of life</i> .....        | 23       |
| Upstream and downstream capital.....                     | 25       |
| Integrated Chain Management.....                         | 28       |
| 1. <i>Material and information flow school</i> .....     | 28       |
| 2. <i>Strategy and cooperation school</i> .....          | 29       |
| 3. <i>Regional industrial network school</i> .....       | 29       |
| <i>Risk Management</i> .....                             | 32       |
| <i>Culture &amp; Strategy</i> .....                      | 35       |
| <i>Transparency</i> .....                                | 36       |
| 1. <i>Life cycle assessment models</i> .....             | 36       |
| 2. <i>Equilibrium modeling</i> .....                     | 37       |
| 3. <i>Multi-criteria decision making</i> .....           | 37       |
| 4. <i>Analytical hierarchy process</i> .....             | 37       |
| Issues relating to Supply Chain management .....         | 37       |
| <i>Drivers of sustainability</i> .....                   | 40       |
| <i>Barriers of Sustainability</i> .....                  | 41       |
| Reporting on sustainable supply chains.....              | 44       |
| Detriments of sustainable reporting .....                | 50       |
| <i>Corporate size and financial performance</i> .....    | 50       |
| <i>Environmental and social performance</i> .....        | 50       |
| <i>Ownership structure</i> .....                         | 51       |
| Conclusion of literature review .....                    | 51       |
| Proposition 1 .....                                      | 53       |
| Proposition 2 .....                                      | 53       |

|                                                               |            |
|---------------------------------------------------------------|------------|
| <b>3. RESEARCH METHODOLOGY .....</b>                          | <b>54</b>  |
| Research methodology /paradigm.....                           | 54         |
| Research Design.....                                          | 55         |
| Stage 1: Research Question.....                               | 56         |
| <i>Theoretical Aim</i> .....                                  | 56         |
| Stage 2: Instrument development .....                         | 56         |
| <i>Cases</i> .....                                            | 56         |
| <i>Case Selection</i> .....                                   | 56         |
| Stage 3: Data gathering .....                                 | 56         |
| <i>The research instrument</i> .....                          | 56         |
| <i>Data gathering</i> .....                                   | 57         |
| Stage 4: Data analysis and interpretation .....               | 58         |
| Stage 5: Dissemination.....                                   | 58         |
| <i>Limitations of the study</i> .....                         | 58         |
| <i>Validity and reliability</i> .....                         | 59         |
| <i>Demographic profile of respondents</i> .....               | 60         |
| <b>4. PRESENTATION OF RESULTS.....</b>                        | <b>61</b>  |
| Results pertaining to proposition 1 .....                     | 61         |
| Results pertaining to proposition 2.....                      | 63         |
| <i>Consolidated Balance sheets</i> .....                      | 63         |
| <i>Consolidated Income statements</i> .....                   | 66         |
| <i>Environmental Indicators</i> .....                         | 70         |
| <b>5. INTERVIEW RESULTS.....</b>                              | <b>71</b>  |
| Introduction .....                                            | 71         |
| Results of Interviews.....                                    | 71         |
| <i>Woolworths Holdings</i> .....                              | 71         |
| <i>Pick n Pay Group</i> .....                                 | 74         |
| <i>Impahla Clothing</i> .....                                 | 76         |
| <b>6. INTERPRETATION OF RESULTS .....</b>                     | <b>79</b>  |
| Introduction .....                                            | 79         |
| Results pertaining to proposition 1 .....                     | 80         |
| <i>Number of people employed</i> .....                        | 81         |
| <i>CSI Spend</i> .....                                        | 82         |
| <i>Investment into people, learning and development</i> ..... | 83         |
| <i>B-BBEE rating</i> .....                                    | 84         |
| <i>Work related accidents</i> .....                           | 85         |
| <i>Share Price (Closing)</i> .....                            | 85         |
| <i>Market Capitalisation</i> .....                            | 87         |
| Conclusion for Proposition 1.....                             | 91         |
| Results pertaining to Proposition 2.....                      | 91         |
| <i>Woolworths Holdings</i> .....                              | 92         |
| <i>Pick n Pay Group</i> .....                                 | 96         |
| <i>Impahla Clothing Company</i> .....                         | 99         |
| <i>Mr. Price Group</i> .....                                  | 103        |
| <i>The Foschini Group Limited</i> .....                       | 107        |
| <i>Rex Truform Clothing Group Limited</i> .....               | 110        |
| <i>Financial Ratios</i> .....                                 | 112        |
| <i>Environmental ratios</i> .....                             | 121        |
| <i>Conclusion for Proposition 2</i> .....                     | 125        |
| <b>7. CONCLUSION AND RECOMMENDATIONS.....</b>                 | <b>127</b> |

|                                       |            |
|---------------------------------------|------------|
| Introduction .....                    | 127        |
| Conclusions of the study.....         | 127        |
| Recommendations.....                  | 129        |
| Suggestions for further research..... | 129        |
| <b>8. REFERENCES.....</b>             | <b>131</b> |

# 1. INTRODUCTION

## Purpose of the study

The purpose of this research is to establish whether there is a relationship between sustainability as part of a firm's supply chain management and a firm's long term economic success within the retail clothing industry of South Africa.

## Context of the study

The Brundtland Commission, 1987, defined sustainability as, "a development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987, p.43). The concept of sustainability has grown in interest in recent times. Therefore, taking the above definition into consideration, the setting of this study will be to analyze and determine whether sustainable supply chain management and long-term economic success have a positive link. This study will only be tested within the retail clothing industry of South Africa. This study shall be conducted in order to substantiate whether there is an economic incentive for organisations to adopt more sustainable practices.

In 2007, the Intergovernmental Panel on Climate Change or IPCC was awarded a Nobel Peace Prize. This brought the issue of climate change into the fray and organisations began to take notice of sustainability and specifically how to better incorporate sustainability into their own business practices. This could be seen as a key moment in the movement towards sustainable business operations (Chakravarty, 2014). Although sustainability is not a novel notion, it was only recently that the social and economic pillars of the triple bottom line have also become a sustainability concern. Increasingly business literature has begun to show sustainability as a topic of concern in disciplines such as operations management and supply chain management (SCM)(Carter & Rodgers, 2008). In this study, the term 'sustainability' will refer to the relationship of the social, environmental and economic responsibilities, as proposed by Carter & Rodgers, 2008.

An ever increasing concern of many worldwide industries, including the retail clothing industry, is supply chain management. The creation and maintenance of strong interconnected relationships or links between central organisations and their suppliers, as well as other stakeholders, has become a focus of many organisations as they have become aware of the potential for a competitive advantage over rival firms. "Managing the supply chain has become a way of improving competitiveness by reducing uncertainty and

enhancing customer service” (Al-Mudimigh, Zairi, & Ahmed, 2004, p. 309). All processes and functions of the business model are under the supply chain management function. This includes all levels and grades of the supply chain, from suppliers to logistics of the focal company as well as other inbound or outbound processes of the organization. If SCM is implemented efficiently and timeously, it can lead to improved operational efficiency, consistency of quality, as well as improved delivery and lead times. Properly implemented sustainability into business practices and supply chains can markedly reduce operational and marginal costs of a firm as well as lead to the improvement or the creation of a competitive advantage of the company within its relative industry. The costs associated with sustainable supply chain management (SSCM) are insignificant when measured against the potential benefits an organisation can achieve through the implementation of SSCM. (Cao, 2011). DuPont, 3M and Navartis are excellent examples of where improved environmental and business efficiencies have been the result of SSCM. DuPont has experienced savings of two billion dollars, where Novartis has saved fifty million dollars. Eighty two million dollars were also saved at 3M. Environmental output vs input ratios were also improved at DuPont, where they managed to reduce their greenhouse gas emissions by 66%. Based on this evidence, it can be seen that this study could be contextual, especially in today’s fast and competitive world. Therefore, “sustainable practices can help improve business reputation, and provide new business opportunities by developing novel sustainable products that match customers’ preferences” ( Chakravarty, 2014, p. 273).

As the world’s population increases so does the competition for resources, resulting in the topic of sustainability gaining momentum and increasingly becoming an important consideration of businesses across a variety of different industries. The world only has a finite amount of resources available and, as a result, how those resources are used and reused has become progressively more important. Increasing consumer awareness has led to organisations having to be more transparent to their consumers and having to report on their business activities, including working conditions and environmental impacts. All these factors are examples of possible components influencing an organisation’s bottom line and supply chain management (Carter & Rodgers, 2008). The Johannesburg Stock Exchange implemented its Sustainability Responsible Investment Index more than ten years ago to promote sustainable business practices and is a prime example of the aforementioned discussion in the South African industry context. The philosophy behind this index is to identify companies listed on the JSE that integrate the the triple bottom line as well as good corporate governance into their business activities (Johannesburg Stock Exchange, 2014).

De Britoa, et al, 2008, found that sustainability and sustainable development have become important topics of discussion and have been gaining increasing momentum with regard to including sustainability issues into governmental policies and organisational strategy since the Brundtland report of 1987. The retail clothing and fashion industry is particularly sensitive to issues such as the use of resources, poor working conditions and other humanitarian and labour concerns as well as fierce competition. These issues of sustainability extend across the entire industry and supply chains (de Britoa, Carbone, & Blanquart;, 2008). Previous research conducted related primarily to regions of Europe and the USA. There was little literature found with regard to the South African context of the retail clothing industry. There was also little literature found as to the affect sustainability will have on supply chain management and economic success of firms and organisations within the South African retail clothing industry. The purpose of this study is therefore to identify whether there is a positive correlation between sustainability and profits within the South African context.

## Problem statement

### Main problem

To determine whether there is a relationship between sustainability along the supply chain and a firm's long term economic success within the retail clothing industry of South Africa.

### Sub-problems:

#### Sub-problem 1

The first sub-problem is to determine the level of sustainability employed along the supply chain.

#### Sub-problem 2

The second sub-problem is to determine if there is a relationship between the level of sustainability and the firm's economic performance.

## Significance of the study

It is hoped that this study will assist in providing direction for managers and decision makers within the retail clothing industry of South Africa. This study further aims to identify sustainable measures to enable companies to implement sustainable practices into their supply chain management strategies and practices. It would be significant if the research could develop and establish a positive relationship between sustainable supply chain management and the long-term economic success or sustainability of a firm as if this should be established, it is hoped that the results of this research would assist managers within the retail clothing industry of South Africa, by

providing a financial incentive for organisations within this sector to incorporate sustainability into their supply chains and business practices as it would lead to greater profitability, increased environmentally friendly business operations and an enhanced brand/ consumer value.

## 2. LITERATURE REVIEW

### Introduction

The aim of this literature review is firstly to analyse and discuss published literature relating to supply chain management, sustainability and economic performance. From there the literature review will discuss sustainable supply chain management and the various proposed models and frameworks as found in the available literature. Thirdly the literature review will discuss the various issues and the opportunities found in supply chain as well as in sustainability. These will include current trends plus proposed trends of sustainable supply chain management. The literature review will also discuss and examine the current trends with regard to reporting on the sustainability of companies through resources such as companies integrated reports whilst adhering to sustainability guidelines as set out by the Global Reporting Index (GRI) as well as King Code of Governance Principals or currently King III (Institute of Directors Southern Africa, 2009). Finally, propositions shall be drawn from the literature review.

### Supply chain management

A supply chain is referred to as an integrated system, which synchronises and coordinates a series of interconnected business processes and strategies in order to obtain natural resources and basic parts. These resources are then used to manufacture completed products or services (Seuring & Muller, 2008).

The aim of supply chain management would be to add value to these finished products or services and to ensure that the products are distributed on time to retailers or the end consumer. An important aspect of supply chain management is to facilitate information exchange among various business entities along the supply chain including suppliers, manufacturers, distributors, as well as third-party logistics providers, and retailers. It could therefore be said that the main objective of supply chain management is to enhance the operational efficiency, profitability and the competitive position of a firm and its supply chain partners (Min & Zhou, 2002).

Recently the topic of supply chain management has dramatically gained importance in the marketplace. Globalisation, fluctuating oil costs and the competition for resources resulted in many companies, as well industries as a whole, having to outsource entire processes of their business in order to compete with and meet the demands of the consumer. With these demands comes increased pressures on companies to perform and operate in an environmentally responsible as well as a socially responsible manner, not only for themselves but also for their suppliers. These pressures are often brought to bear from both internal and external sources, such as employees and management, socially aware societies or groups, communities, governments as well as non-governmental organisations. These pressures

are usually found across all levels of the supply chain, but are particularly noticeable in organisations where operations are easily visible to the public such as consumer-based multinational organisations like the ones that would be found in the retail-clothing industry (Seuring, 2008).

Due to the economic, social and environmental issues in the third world and developing countries, companies have increasingly refocused their attention on sustainability with the intention of achieving conformity in the quality and standards of working and production conditions across all their supply chains (Turker & Altuntas, 2014). Seuring (2008), continue along this line of thought by stating, "Public scrutiny has increased as consumers have become more knowledgeable of the fact that it is not only the end product, but also the supply chain that need close observance and monitoring. Problems in environmental or social performance can easily spoil the brand equities and sales of these organisations, thus making overall supply chain performance a critical competitive focus" (Seuring, S, Editorial, 2008, p. 1545). As such, there is an increasing recognition that organisations can no longer afford to ignore the issue of sustainability in their operations (Ahi & Searcy, 2013).

The issue concerning every aspect of a supply chain is a complicated process when taking into account the many variables and processes to be considered. "Production processes are often dispersed around the globe. Suppliers, focal companies and customers are linked by information, material and capital flows" (Muller & Seuring, 2008). Eng, 2005, defines supply chain management as, "Managing the inputs of goods or services including a range of activities not only within a single department in an organization but also from different departments and outside the organization, for final users from procurement of raw materials through to the end of the products' useful life" (Eng, 2005, p. 4). Stock & Boyer (2009), define supply chain management as, "The management of a network of relationships within a firm and between interdependent organizations and business units consisting of material suppliers, purchasing, production facilities, logistics, marketing, and related systems. These systems facilitate the forward and reverse flow of materials, services, finances and information from the original producer to final customer with the benefits of adding value, maximizing profitability through efficiencies, and achieving customer satisfaction" (Stock & Boyer, 2009, p. 706). Based on the abovementioned definitions, it can be said that supply chain management is vital to the entire manufacturing process as it encompasses the flow of materials, information, services, finances as well as goods, across the entire span of the organisation, from the procurement of raw resources to the final consumer. All of these manufacturing steps are tightly interwoven and any badly implemented or mismanaged stages of the process at any one of the levels of production has the power to derail the entire process leading to an inferior product at the end of the line and ultimately depleted profits.

## Sustainability

Sustainability is commonly defined as, “utilizing resources to meet the needs of the present without compromising future generations’ ability to meet their own needs” (WCED (World Commission on Environment and Development), 1987, p. 43). In today’s business world, sustainability is an increasingly important topic for most organisations (Schneider & Wallenburg, 2012). This is largely due to the fact that consumers are now more aware and more observant of how companies and organisations are operating in terms of the triple bottom line, namely, economic, environmental as well as social, and what affects these elements might have on business activities. Issues such as Globalization place demands on supply chain management to reach beyond pure economic issues and matters like e.g. fair labor conditions and environmentally friendly production (Seuring, 2013).

The total number of organisations considering the adoption of environmental practices into their supply chains, strategic operations and business activities is on the increase and continues to grow as a result of consumer education, awareness and pressure. There are also an increasing number of incentives in place for encouraging organisations to monitor and improve their environmental impact. Some of these incentives have been mandatory, including regulation driven programs, but a number of organisations are also introducing internal voluntary environmental programs. These programs usually include technological and organisational development programs as a way for firms to gain a competitive advantage over rival companies in today’s business market (Sarkis, 2003). Other internal incentives for management include regulatory compliance as well as stakeholder pressure and the affects these may have on corporate financial performance (Golicic & Smith, 2013).

“The interrelationships among society, the environment, and economic/industrial development are integral to the concept of sustainability development” (Hutchins & Sutherland, 2008, p. 1688). Both the natural environment and social equity are now recognised as major cornerstones of sustainable development. Over the last past twenty years awareness and concern regarding perceivable climate change threats and the obvious depletion of natural resources has become evident across several industries and in the global population (Vachon & Mao, 2008).

Vachon & Mao (2008) suggest that the notion of sustainable development has attracted a lot of attention over the last few decades particularly since the publication of the Brundtland report in 1987. Business sustainability has

become an important aspect for many managers of organisations within the retail clothing industry to consider, implement or adapt into their business practices and strategies (Vachon & Mao, 2008). Business sustainability indicates the resiliency of organisations over time through the adoption of healthy environmental, economic and social systems in order to mitigate against to internal and external pressures (Ahi & Searcy , 2013). Therefore, organisations must always be aware of, and increasingly be considerate of the life cycle implications of their management decisions. The implementation and management of supply chains is necessarily receiving increased importance (Ahi & Searcy, 2013). Bansal, 2010, defines business sustainability as, “the creation of resilient organizations through integrated economic, social and environmental systems” (Bansal T, 2010, p. 1). Slawinski & Bansal, 2010, define business sustainability as, “the ability of firms to respond to short-term financial, social and environmental demands, without compromising their long-term financial, social and environmental performance” (Slawinski & Bansal, 2010, p. 1). Hassini et al., 2012, define business sustainability as, “the ability to conduct business with a long term goal of maintaining the well-being of the economy, environment and society” (Hassini, et al. 2012, p. 2). Based on the above mentioned definitions, it is obvious that business sustainability involves the overall capacity of organisations to operate and manage their routine business activities in an environmentally and socially acceptable manner whilst ensuring no compromise in baseline economic performance. Business sustainability initiatives are often conducted under a variety of titles, with “corporate sustainability” (Ahi & Searcy , 2013).

Carter and Rodgers (2008), propose that organisational sustainability consists of three components: The natural environment, society and economic performance. Figure 1 below illustrates their view of the components that make up organisational sustainability.

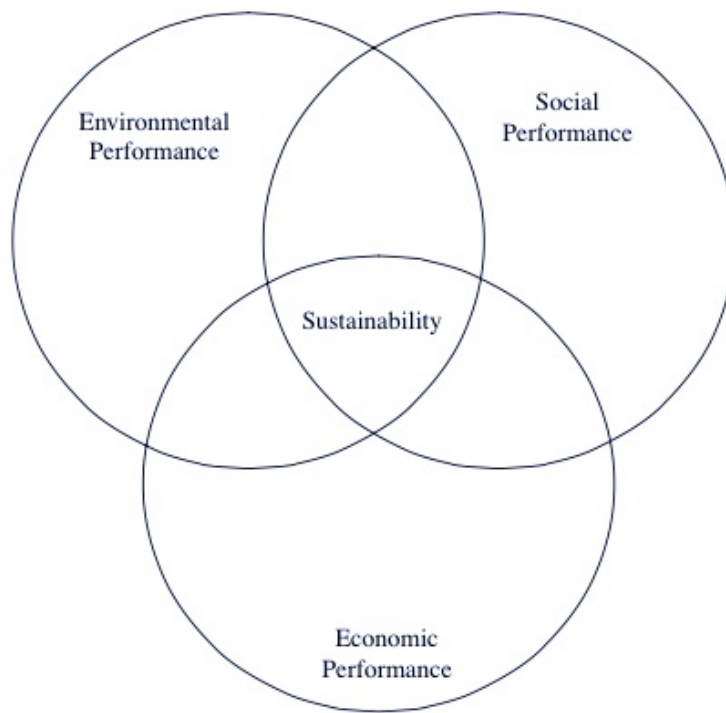


Figure 1: Triple bottom line (Carter & Rogers, 2008, p. 365).

However, the topic of sustainability and sustainable development is far more complicated than the Carter & Rogers, 2008, graphic depicts and many more variables need to be considered with the complete concept of sustainable development. There is a vast range of concerns and issues that must be considered, all falling under the umbrella of sustainable development, and ranging from public policies, political systems and corporate citizenship to international trade, social equity/justice and economic growth/development (Vachon & Mao, 2008). Environmental performance, corporate environmental practices and social sustainability could be used to measure sustainable development and the strength of supply as these address the triple bottom line.

## Environmental Performance

Environmental performance essentially concerns the level of effect a supply chain has on the natural environment. As the strength of a supply chain begins to improve, so will the manufacturing performance of all organisations that fall within the focal firms supply. A clear way for corporations to contribute positively to the aggregate environmental welfare is to reduce the ecological stress generated while producing a unit of GDP (or a unit of wealth) 20122 (Vachon, 2012). This can be done through the development and improvement of technologies.

These improved technologies and processes are believed to have a benefit on the natural environment (Vachon & Mao, 2008). This is supported by the Porter hypothesis, which, in summation is the belief that, through strict environmental and social regulation, companies can stimulate efficiencies and innovations that will have the benefit of leading to increased commercial competitiveness (Porter & Van der Linde, 1995). The authors go on claiming that increased regulations will result in innovative new ideas and concepts such as cleaner and greener technology, improved environmental standards and cost cutting strategies. This is supported by Vachon, 2012, 'Many organizations have integrated principles of corporate social responsibility in their decision- making and strategy. Within these responsibilities, corporations are expected to make a fair use of the natural resources and to manage their assets in a way that reduces the ecological stress caused by their operations and products. Paradoxically, corporations are often cited as being the main contributor to ecological damages, while simultaneously, they are also viewed as the catalyst for new solutions' (Vachon, 2012, p. 22)

This leads to the assumption that the process of greening the supply chain promotes environmental innovation, which in turn improves environmental performance.

## Corporate environmental practices

Buying corporations have recently been held more responsible for their suppliers' sustainable practices. An Example of an organisation include Nike in the 90s', which was associated with the child labour practices of its contract manufacturers in East Asia, which put the American sportswear company in an unfavourable light and resulted in consumer boycotts and declining sales (Vachon & Mao, 2008). Another example includes Nestle. In 2012, Green Peace launched a campaign against Nestle, accusing the organisation of encouraging deforestation through their tree palm oil suppliers (Wolf, 2014). Consumers and other entities such as government, and stakeholders have, as a result acquired an increased awareness and have placed pressure on organisations to conduct business in an

environmentally and socially responsible manner (Ahi & Searcy , 2013). In order for companies to adhere to the new environmental standards and environmental management best practice, firms must now implement and adopt certain guidelines such as Total Quality Management (TQM), ISO 14001 or GRI reporting guidelines to help them to achieve compliance (Al-Mudimigh , Zairi , & Ahmed , 2004) It is thought that these changes and adoptions can lead to vast improvements in quality and cost reductions for the complying organisations. Corporates and other stakeholders need to have a positive relationship as Wolf, 2012 found that stakeholder pressure and SSCM contribute towards an organisations sustainability performance (Lee, Kim, & Kim, 2016). Through these types of innovations, it is thought that compliant companies can improve their environmental performance and their overall business and returns.

### Social Sustainability

Social justice and the increase and encouragement of sustainability could be seen as the main purpose of organisations that implement sustainable development. (Vachon & Mao, 2008). The authors proceed by stating, “More and more companies have started to recognize the necessity of creating social values along with profit generation and environmental protection” (Vachon & Mao, 2008, p. 1554.) Many companies, organisations and industries have therefore begun to hone much of their focus on corporate social responsibility. Sustainability recognises the interdependence of ecological, social, and economic systems, also known as the three pillars of sustainability or triple bottom line. Ethical behaviour is often encouraged or implied by corporate social responsibility and should be found under all three pillars of sustainability. As more corporations commit to sustainability and CSR policies, so is there increased pressure to weigh social impacts throughout the supply chain (Hutchins & Sutherland, 2008). Corporate Social Responsibility (CSR) can be defined as, “the voluntary integration, by companies, of social and environmental concerns in their commercial operations and in their relationships with interested parties” (Ciliberti, Pontrandolfo, & Scozzi, 2008, p. 1). An increased pressure by stakeholders, mainly consumers and non-governmental organizations (NGOs), is placed upon businesses to implement and adopt CSR management systems across the supply chain. Such systems can be used to transfer socially responsible behaviors along the supply chain, in particular to influence the practices of their business partners and to provide a baseline of social and environmental principles to be fulfilled (Ciliberti, Pontrandolfo, & Scozzi, 2008). These influences and principles can be fulfilled and supervised through the establishment of written supplier requirements, the monitoring of supplier performance to ensure compliance, and the contribution to suppliers’

awareness through building and training on the company policy.

While it is common practice for decision makers to address and be concerned about the economic pillar of sustainability, increasing effort has now been directed towards the environmental pillar through systems such as environmental life cycle impacts. Environmental life cycle assessments (LCA) can provide information related to the environmental impacts of a product or service a company provides. "An LCA considers such life stages as raw material extraction, material processing, manufacturing, distribution use and disposal options such as recycling"(Hutchins & Sutherland, 2008, p. 1689). However, it was not until recently that the social dimension of sustainability has been well defined (Hutchins & Sutherland, 2008). There is not much supporting literature on this matter but the little that there is focuses on topics such as health and safety. Unfortunately, such discussions neglect crucial points such as culture or the ethical impacts of management decisions on organisations. It can be said that organisations can no longer function with the sole purpose of the business being financial returns and economic growth. Although financial returns are primarily important and crucial to business, many stakeholders, including customers, government and civil society, now demand and expect other requirements that support the other aspects of sustainability. Companies are frequently institutional supports within communities, supporting activities such as philanthropic donations, healthcare, childcare, and educational opportunities (Hutchins & Sutherland, 2008). A company aiming to operate in agreement with the principles of sustainability or taking an ethical or citizenship approach to corporate social responsibility must consider its entire supply chain, not just the obvious links which belong to its own sphere of legal responsibility (Windsor, 2006).

The social lifecycle assessment tool allows management to measure the social impacts of the supply chain and management practices of a business. An important factor when considering a social LSA is what impacts or metrics should be considered important and measured. The social LSA is important as it takes social and political factors into consideration and how these factors may contribute to environmental issues. "Indicators can vary greatly in terms of scope and the level of control that decision makers have over them, the effort required to incorporate them into the decision making processes, and the financial burden associated with their implementation"(Hutchins & Sutherland, 2008, p. 1691). These impacts can range in size and scale from global (e.g., UN Commission on Sustainable development to local. An example of this would include the Boston Indicator project (Hutchins & Sutherland, 2008). These indicators could be tied in with the Millennium development goals as well as sustainability reporting guidelines, which

emphasise reporting on sustainability issues through procedures and standardisation.

The social lifecycle assessment requires an evaluation and adaptation of the environmental lifecycle assessment. The Figure below demonstrates a practical example of a social lifecycle assessment.

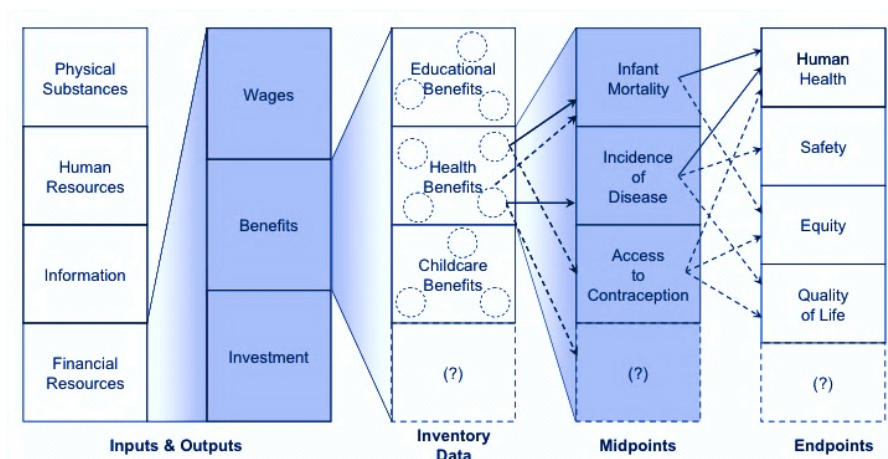


Figure 2: Category hierarchy for a Social lifecycle Assessment (Hutchins & Sutherland, 2008, p. 1691).

## Supply Chain Performance

The quest for sustainability is already beginning to metamorphosise the competitive landscape, forcing companies to update their views about products, technologies, processes and business models (Longoni & Cagliano, 2015). The incorporation of environmental considerations in the analysis of supply chains stems from the growing interest in environmental issues, which in turn is due to limitations that are posed by legislation and regulations as well as to various motivations that a company may have to analyse the environmental performance of its activities (Tsoulfas & Pappis, 2008).

Some of these other motivations include stakeholder pressure, Corporate social responsibility, which is mirrored in social expectations, indicates that corporations have an ethical responsibility to treat the public and the environment with dignity and respect (Lee, Kim, & Kim, 2016).

This has led to managers and other decision makers now having to take other environmental as well as social considerations and factors into consideration when assessing the performance of their supply chains. The setting of targets and monitoring performance with key performance indicators are commonplace management tools that are applied in many business cases and particularly in the industrial and the logistics sector. It is thought that the retail-clothing sector would also fall under this category. In the past only financial performance and operational efficiencies were usually

measured to indicate performance. However, with the growth of the environmental and sustainability movement, companies are increasingly realising the importance of improved environmental and social performance indicators (Lamberton, 2000). The fast fashion industries are now more aware of the importance of sustainable development in the economy, environment, and society. For example, famous international companies, such as ZARA, H&M, GAP, and UNIQLO, are using green marketing to affect consumers' selections to lead suppliers into strategic alliances (Li, Zhao, Shi, & Li, 2014).

Various metrics have been used in the past with the supply chain performance assessment and these metrics have been designed to measure operational performance, to assess enhanced efficiency and to review strategic alignment of the entire SCM (Anand & Grover, 2015). At the same time sustainability metrics have usually been quantitative measurements whereas sustainability indicators have had a broader focus and allowed more qualitative measurements in its application. These indicators of sustainability have been used to motivate progress within an organisation allowing them to reach their strategic goals as the sustainability metrics now cover the narrative description of sustainability issues in a quantitative and qualitative manner. (Ahi & Searcy, 2015). To establish a clear picture of how the retail supply chain performs, the dimensions of performance should include both financial performance and non-financial performance indicators (Anand & Grover, 2015). These metrics and key performance indicators form part of an important function when it comes to the measuring of progress of defined goals as set out by a company. Payman & Searcy, 2015, explain that multiple organisations across different regions and continents make use of corporate sustainability metrics as part of their supply chain performance measurements.

These metrics are frequently shared and made available to the public in a company's corporate sustainability report. These companies are usually listed organisations. Sustainability metrics are usually classified or grouped as either absolute or relative. Absolute metrics express the operational performance in terms of what the specific levels of performance are for an area. An example of this would include water use or carbon emissions. Relative metrics would show, "the operational performance in terms of the performance in one area (e.g., water use) and how it correlates to performance in another area (e.g., revenue or total production)" (McElroy & van Engelen, 2012, p. 63). However no comprehensive inventory of metrics applied to Green supply chain management (GSCM), and sustainable supply chain management (SSCM), is yet available as far as the research shows. There is a significant gap in the research given that there is a growing

recognition of sustainability and its associated impacts that extend beyond the boundary of any one firm (Seuring & Gold, 2013).

In a study conducted by KPMG in 2011, four key areas of retailers' initiatives were identified from which key performance indicators could be drawn. This included: Transport optimisation, inventory optimisation, information technology optimisation and resource optimisation (KPMG, 2011). Table 1 below highlights potential KPI measures for these areas. These key performance indicators are examples of possible measurements that could be used to measure the performance of a typical supply chain. In sustainable supply chain management, additional sustainability metrics would need to be included. Possible sustainable metrics would need to include environmental as well as social indicators. Only through a thorough analysis of the triple bottom line can the sustainable performance of an organisation truly be measured (Ahi & Searcy, 2015).

Ahi and Searcy, 2015, provide a distribution of key characteristics that are addressed through identified metrics that pertain to each characteristic. A frequency analysis of articles pertaining to SSCM and GSCM journals were analysed and over two thousand two hundred and fifty-five metrics were found. As SSCM and GSCM are still in the early stages of development, the large amount of metrics discussed in literature is an encouraging sign as it indicates multiple platforms or concepts from which sustainability can be measured (Ahi & Searcy, 2015). This paper goes on to say that each of these sustainability metrics were identified and grouped under thirteen sustainable supply chain management characteristics as presented by Ahi & Searcy, 2013. These characteristics and metrics are shown in table 3. Table 2 shows examples of the metrics that can be used to measure these metrics and under what focus they fall in the triple bottom line context, namely the economic, environmental and the social pillars of the supply chain. From the research conducted by Payman and Searcy, 2015, they suggest a conceptual framework for SSCM (figure 3). The framework highlights six key players within the sustainable supply chain. The framework highlights that all these players within a supply chain form a part of the broader sustainability context and are interrelated. SSCM metrics should also be centred around the main firm of the supply chain. New and adapted sustainability metrics that measure GSCM and SSCM could be developed off the basis of this framework. The framework could also be used to evaluate existing metrics (Ahi & Searcy, 2015).

| <b>Transport optimisation</b>                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Inventory optimisation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Delivery related performance indicators</i><br>- Delivery schedule adherence<br><i>Time related performance indicators</i><br>- On time ship rate<br><i>Frequency related performance indicators</i><br>- Number of road accidents<br><i>Capacity related performance indicators</i><br>- Fuel consumption (in litres) per tonne-km of cargo carried                                                                                  | <i>Cost related performance indicators</i><br>- Inventory value<br><i>Time related performance indicators</i><br>- Inventory replenishment cycle time<br><i>Quantity related performance indicators</i><br>- Inventory accuracy ((book inventory – counted inventory)/book inventory)<br><i>Service related performance indicators</i><br>- Electricity consumption (in Kw-hrs.) per sq.ft of warehouse                                                                                                                                                                                |
| <b>Information technology optimisation</b>                                                                                                                                                                                                                                                                                                                                                                                               | <b>Resource optimisation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <i>Level of IT implementation related Performance Indicators</i><br>- Level of IT implementation for track and trace process of goods<br><i>Service related performance indicators</i><br>- Information systems flexibility<br><i>Responsiveness related performance indicators</i><br>- Accessibility of real time information<br><br><i>Cost related performance indicators</i><br>- Investment in IT as a percentage of total revenue | <i>Cost related performance indicators</i><br>- Cost of goods sold<br><br><i>Service related performance indicators</i><br>- Customer satisfaction<br><br><i>Time related performance indicators</i><br>- Time required for raising funds for acquiring a new equipment/software/ labour is essential for the supply chain process improvements<br><i>Financial ratios related performance indicators</i><br>- Debt ratio (total debt/total assets) Debt-to-equity ratio (total debt/ total equity) Interest coverage (EBIT/interest charges) Gross profit margin ((sales–COGS)/sales) |

Table 1: Categorization of KPI's (Anand & Grover, 2015, p. 152).

| SSCM Characteristics | Economic Focus |                                                                             | Environmental Focus |                                                                                                                                                                      | Social Focus   |                                                                        |
|----------------------|----------------|-----------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------------------------------------------------|
|                      | no. of Metrics | Example of metrics                                                          | no. of Metrics      | Example of metrics                                                                                                                                                   | no. of Metrics | Example of metrics                                                     |
| Economic focus       |                |                                                                             |                     |                                                                                                                                                                      |                |                                                                        |
| Environmental Focus  | 168            | Environmental costs, Buying environmentally friendly materials              |                     |                                                                                                                                                                      |                |                                                                        |
| Social Focus         | 70             | Customer's satisfaction, Customer returns                                   | 78                  | Environmental social concerns, Cooperation with customers for green packaging                                                                                        |                |                                                                        |
| Volunteer focus      | 0              | -                                                                           | 0                   | -                                                                                                                                                                    | 4              | Participation in voluntary programs, Number of individual volunteering |
| Resilience focus     | 1              | Risks and recoverability                                                    | 5                   | Risk of severe accidents (2), Environmental risks (1)                                                                                                                | 3              | Corruption risk, Health status and risks                               |
| Long term focus      | 7              | Net life cycle cost, Long-term debt, including current portion              | 57                  | Life cycle assessment (LCA), Total energy demand (primary energy used over the life cycle of a product or a process)                                                 | 0              | -                                                                      |
| Stakeholder focus    | 12             | Returning customers ratio, Level of supplier preprocessing of raw materials | 41                  | Environmental partnership with suppliers, Choosing suppliers according to environmental criteria                                                                     | 107            | Stakeholder engagement, Stakeholder empowerment                        |
| Flow focus           | 2              | Cash flow, Cash flow provided by operating activities                       | 1                   | Annual mass-flow of different materials used (excluding energy carriers and water) (in tons)                                                                         | 0              | -                                                                      |
| Coordination focus   | 1              | Cooperation degree                                                          | 3                   | Collaborating with other companies and organisations for environmental initiatives, Improving opportunities for reducing waste through cooperation with other actors | 0              | -                                                                      |
| Relationship focus   | 1              | Networks                                                                    | 1                   | Interaction and harmony co-exist with natural systems on production and consumption systems                                                                          | 2              | Relationship, After sales service                                      |

| SSCM Characteristic<br>s | Economic Focus |                                                                      | Environmental Focus |                                                                                                         | Social Focus   |                                                                                            |
|--------------------------|----------------|----------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------|----------------|--------------------------------------------------------------------------------------------|
|                          | no. of Metrics | Example of metrics                                                   | no. of Metrics      | Example of metrics                                                                                      | no. of Metrics | Example of metrics                                                                         |
| Value focus              | 59             | Profit, Market share, Sales                                          | 3                   | Energy requirement per unit of net value added, Global warming contribution per unit of net value added | 2              | Publicly available missions and values statement, Value added and community benefits       |
| Efficiency focus         | 5              | Existing efficiency vs. cost of upgrading, Increased cost efficiency | 14                  | Energy efficiency, Recycling efficiency efficiency                                                      | 1              | Institutional efficiency                                                                   |
| Performance focus        | 43             | Cost savings, Operational performance                                | 39                  | Process optimization for waste reduction, Optimization of process to reduce air emissions               | 14             | Optimization of process to reduce noise, Health and safety performance measurement systems |

Table 2: Number and examples of metrics that addressed two SSCM characteristics (Ahi & Searcy, 2015).

[illegible]

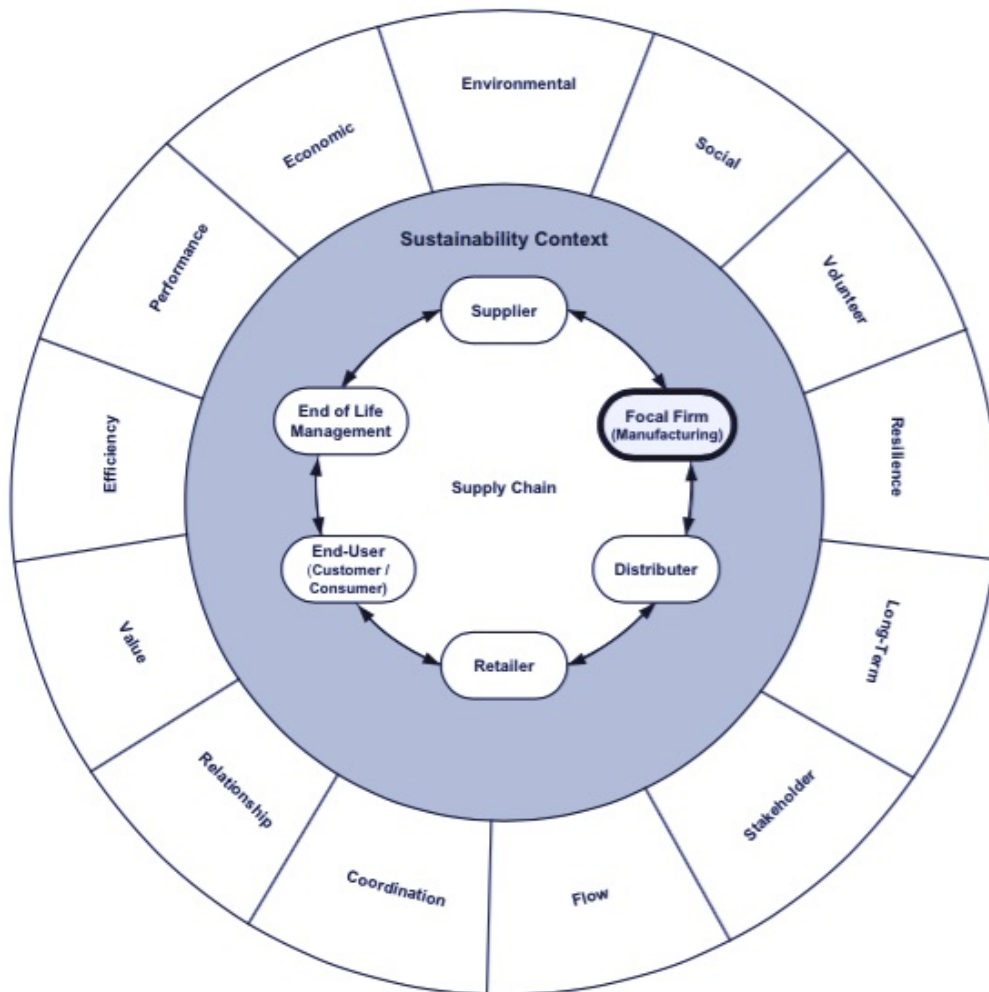


Figure 3: Proposed conceptual framework for measuring performance in SSCM (Ahi & Searcy, 2015, p. 373)

As discussed above, there are many different variables to consider in the study of sustainability and in particular the supply chain management sector. Anand & Grover, 2015, propose key performance indicators such as Transport optimisation, Inventory optimisation, Infrastructure and technology optimisation as well as Resource optimisation. Whilst these KPI's are important to consider, they only address supply chain efficiencies from an operational perspective. Ahi & Searcy, 2015, propose that Sustainable supply chain management Characteristics or indicators should address 2 of the three bottom line characteristics i.e. Economic, Social or Environmental. In the Figure 3: Ahi & Searcy propose a conceptual framework for measuring performance in SSCM. This framework covers the focus areas that metrics can be applied too eg. Air emmissions to environmental, as well as the supply chain context and the different elements and players that are involved there. This develops the idea of Sustainability and Supply chain management being connected rather than acting as stand alone entities.

### Sustainable supply chain management

Over the last twenty years, attention on optimising operations has shifted from a particular facility of an organisation to the entire supply chain involved

(Linton, Klassen, & Jayaraman, 2007). Previously research conducted on logistics and supply chain management, examined issues such as the environment, safety, and human rights in an exclusive manner, without considering the likelihood of interrelationships among them and other aspects of social responsibility (Carter & Jennings, 2002). This is however no longer the case. As a result of the extended supply chains in modern business operations, stakeholder pressure, sustainable supply chain management (SSCM) has started to attract increasing attention from both academics and practitioners in recent years (Turker & Altuntas, 2014). There is an increasing realisation by managers that their company's social and environmental accountabilities do not fall solely under the control of any individual organisation; but that multiple entities across supply chains must be involved to efficiently and effectively fulfill these societal responsibilities (Winter & Knemeyer, 2013).

Globalisation has resulted in production processes now frequently being spread worldwide. The link between suppliers, focal companies and customers is now through information, material and capital flows. The value of the product now depends upon the environmental and social burden that is experienced during the different stages of production. Principal companies could be held responsible for the environmental and social performance of their suppliers across the entire supply chain (Muller & Seuring, 2008). As such, SSCM requires a broadened approach of SCM and should emphasise economic, ecological and social aspects of business practices and theory (Svensson, 2007). Muller & Seuring, 2008, define sustainable supply chain management as, "the management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder requirements" (Muller & Seuring, 2008, p. 1700). Carter & Rogers (2008), define sustainable supply chain management as, "the strategic, transparent integration and achievement of an organization's social, environmental, and economic goals in the systemic coordination of key interorganizational business processes for improving the long-term economic performance of the individual company and its supply chains" (Carter & Rogers, 2008, p. 368). SSCM could be seen as a step forward towards broader adoption of and development of sustainability through focusing on supply chains, since the supply chain considers the product across the entire lifecycle, from initial processing of raw materials to delivery to the customer. However, sustainability must also integrate issues and flows that extend beyond the core of supply chain management: product design, manufacturing by-products, by-products produced during product use, product life extension, product end-of-life, and recovery processes at end-of-life (Linton, Klassen, & Jayaraman, 2007). Product design is discussed later under lifecycle assesment modeling.

### 1. Manufacturing by-products

In manufacturing, the irresponsible disposal of defective products or unwanted manufacturing by-products can adversely impact the environment (MIn & Kim, 2012).

It is surmised that the entire supply chain should insure the removal or reduction of all waste by-products through the implementation of cleaner technologies, quality assurance and lean production techniques. These processes should be considered across all levels of the supply chain. There is also consideration for the beneficial use of by-products such as waste heat for air conditioning or the use of food waste to create a new product. This could be seen as an innovation in process design and continuous improvement activities (Linton, Klassen, & Jayaraman, 2007).

### 2. By-products producing during product use

Product sustainability management is not only a function of design, but also of product management. Producer involvement and product responsibility have been seen as an opportunity to generate profit and as such is being sought by many businesses. This involvement has appeared in calls for the provision of a product as a service (Michaelis & Coates, 1994) or for manufacturers to provide a series of services to support and supplement the sale of the original product (Linton, Klassen, & Jayaraman, 2007).

### 3. Product life extension

Product life extension has to do with, as the name implies, extending the life cycle of any particular product. There are various techniques that can be used in order to achieve this goal (Linton & Jayaraman, 2005). By extending the lifecycle of a product, it is hoped that new resources become a surplus to requirements through the production of a new product. This approach works against the design for a product becoming obsolete which is typical in a consumption-oriented society. However, it increases the value created by an individual product. The challenge for the provider of the product is to develop offerings that allow them to capture more of the product value (Linton, Klassen, & Jayaraman, 2007).

### 4. Product end of life

The characteristic of the product at the end of its life relies largely on actions taken at earlier stages. The initial product design has great influence on the degree to which a product can be reused, remanufactured, recycled, incinerated or disposed of (Linton, Klassen, & Jayaraman, 2007). For

example, some forms of batteries are made with substances that are not environmentally friendly. When it comes to the end of the product lifecycle, an issue arises as to how the product should be discarded. To date, the policies that address the production of more environmentally friendly models of end of life disposal have resulted in less redeployment of materials into new products so much as they have just encouraged more storage of product. This of course is unintended as it still encourages the production of the original product (Shih, 2001).

#### 5. Recovery processes at end of life

Extending the life of a product has resulted in the inclusion of issues such as recycling, refurbishing and remanufacturing. These issues have placed an increased amount of difficulty on current supply chain designs. The issues have been further detrimental in that they have also opened up strategic and operational issues in the supply chain that were previously not present. This can potentially lead to increased costs over a short-term period for an organisation. These issues are caused by two problems: i) uncertainty with the recovery process with regards to quality, quantity, and timing of returned products, containers, pallets and packaging of the products and ii) the collection and transportation process of these products, containers, pallets and packaging (Linton, Klassen, & Jayaraman, 2007). These increased costs can be seen as an opportunity for organisations or supply chain partners, if they view sustainability as a short-term investment with a lot of opportunity (Corbett & Klassen, 2006).

Within sustainable supply chain management, it is expected that in order for the focus to remain within the supply chain, environmental and social criteria need to be met whilst still meeting the needs of stakeholders and economic expectations.

There is an increasing realisation by managers that their company's social and environmental accountabilities do not fall solely under the control of any individual organisation but rather across multiple entities and suppliers across the entire supply chain. All of these suppliers must be involved to efficiently and effectively fulfill these social and environmental responsibilities of the focal company, but also to meet their own targets. As a result of this realisation, managers are now looking to identify ways to successfully meet these environmental and social responsibilities and obligations through developing the relevant tools they could then use to assist in these efforts, and establish mechanisms for pursuing their sustainability goals in coordination with other members of their supply chain in an economically viable manner (Winter & Knemeyer, 2013). Through this initiative, there have been many developments on the topic of sustainable supply chain

management for organisations and academics alike. Managers have also realised the need to establish and maintain strong connections with their suppliers and their business activities. The purchasing or sourcing functions inside focal companies is the key player when it comes to searching for, evaluating and monitoring suppliers. These focal companies are also responsible for distributing and allocating contracts with particular suppliers. Focal companies, such as Volkswagen in the automotive industry, often own highly visible global brands, are frequently attacked by NGOs and other social organisations and are held accountable for environmental and social problems observed in the earlier stages of their supply chain production process (Koplin, Seuring, & Mesterharm, 2007). Harland, 2002, proposes four levels of supply chain management. These include: Supply Policy, Supply Strategy, Supply Management and Supply Operations. Figure 2 illustrates the Supply Chain Management Model as proposed by Harland.

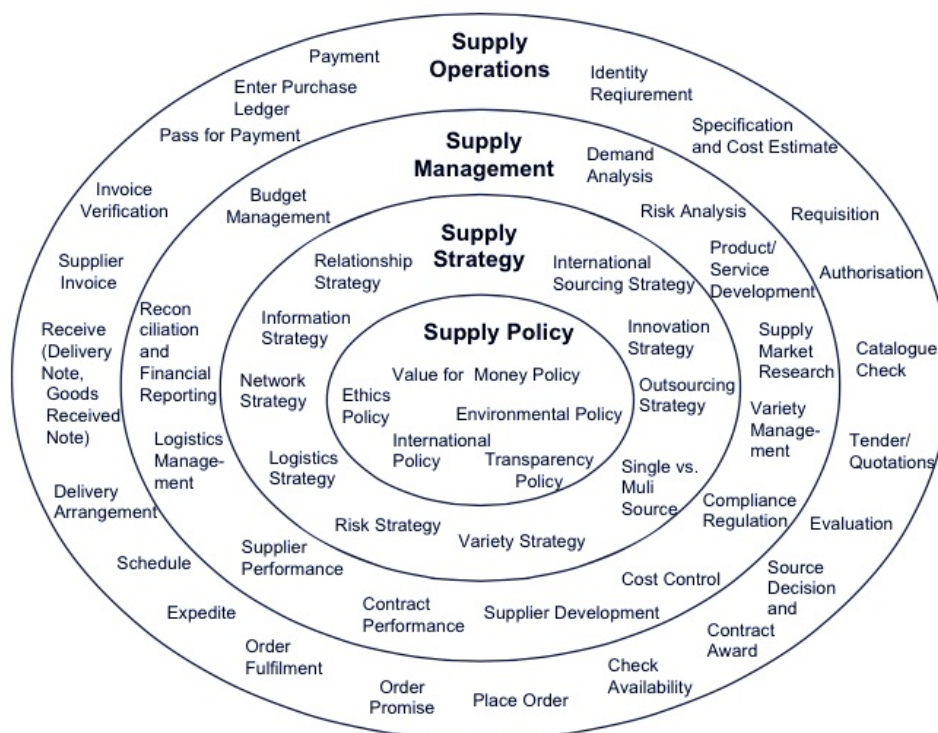


Figure 4: Four levels of supply management (Harland, 2002, p. 28).

Supply policies have to do with the conditions, guidelines and regulations as set out, usually by an external body (government regulations) or internal body (organisation values, policies) as to what is required of an organisation in terms of sustainable development as well as supply policies. This might include an environmental and/or ethics policy; such as, for example, restricting supply choices to countries and corporations that do not exploit

child labour. This may however be in conflict with supply policies aiming for the lowest costs. Hence, the policy level includes prescriptive judgements, which are binding for supply strategy, supply management and supply operations (Koplin, Seuring, & Mesterharm, 2007).

Supply strategies are largely responsible for the direction the organisation will go concerning their operations and business in order to achieve a certain goal or position in the market. Supply chain strategies would fall in line with other business strategies of the organisation and in the case of a sustainable supply chain, the sustainable strategy.

Supply chain management where supply activities are managed and monitored through planning and control. For example, this may involve the design and implementation of plans and controls to ensure that sources for environmentally sound produced goods are available. This might include that suppliers are further developed to be able to meet such requirements (Koplin, Seuring, & Mesterharm, 2007).

Supply chain operations are the day-to-day running of the business. These operations should be guided by the supply chain policies, strategies and management in order to guide or constrain the running of daily activities.

### Upstream and downstream capital

In today's world, organisations across all industries have become a lot more aware of the importance of their partners' responsibility to sustainability in their development. Managing supply chains in a sustainable manner has become an increasing concern for companies of all sizes and across a wide range of industries (Seuring, 2013). For any organization to sustain an acceptable standard of environmental sustainability it is crucial that they incorporate Sustainable Supply Chain Management (SSCM) practices into their business plan. In the past ten years the list of issues relevant to the environmental and social aspects of businesses has expanded enormously. This list has only recently emerged and has drawn the substantial attention of business managers.

As a result supply chain managers are now faced with the challenge of dealing with a complex set of factors that involve the product and the process of both the upstream and downstream side of their supply chain. Previously the supply chain managers were able to simply evaluate basic material or component criteria such as the cost, quality and delivery in an isolated fashion. Sets of criteria that are related to sustainable development is of growing interest, as managers are increasingly realising the need to mitigate against both social and environmental issues and concerns, not just for their own firms but also for their supply chain partners across all levels of the supply chain. Firms face a great deal of scrutiny from numerous stakeholder groups, including governmental agencies, employees, and non-

profit organisations (NPOs). Naturally, this scrutiny is over and above growing demands from at least some customer segments for more environmentally friendly practices (Vachon & Klassen, 2006).

Various strategies are being implemented by supply chain managers in response to these stakeholder pressures, through the adoption and implementation of supply chain strategies that not only focus on the internal operations of the firms, including environmental management programmes, lean production principals, pollution prevention and reduction strategies. This idea is taken further by Preuss, 2005, by outlining the environmental benefits that could be reduced if companies adopt Sustainable Supply Chain Management practices. However, in this process, their partners are not incorporated. Thus for sustainability to be resilient, organisations need to invest beyond their own margins. Therefore, the upstream and downstream partner implication is what ultimately plays a major role in supply chain performance, in addition to overall customer satisfaction (Ageron, Gunasekaran, & Spalanzani, 2012).

Wu & Dunn (1995), propose that this approach needs to be undertaken from a perspective where each participant in the supply chain wins through acting in environmentally friendly ways by reducing resource utilisation, reducing waste and improving their productivity. By minimising their green impact, companies consider the environment as an opportunity upon which they can build a competitive advantage. The environment therefore would no longer be a limitation but would become a collective concern to be tackled in a green supply chain approach (Ageron, Gunasekaran, & Spalanzani, 2012). The importance of sustainability has thus become increasingly important and many organisations have begun to include sustainability into their business practices and across their entire supply chain. Organisations have realised that by adopting sustainable management practices, there is potential for economic growth as a result of savings through investment into minimising environmental and social impacts. A sustainable strategy that organisations could adopt includes NRBV i.e. Natural Based Resource View. NBRV acknowledges the vast amount of ecological issues that affect organisations. Hart, 1995, says that, "In the future, it appears that strategy and competitive advantage will be inevitability rooted in environmentally sustainable economic activity" (Hart, 1995, p. 990). A three-part framework for NRBV was developed and proposed by Hart, which consists of pollution prevention, product stewardship, and sustainable development.

Pollution prevention deals with what the pollution organisations might be producing or pollution pressures they might be feeling and how to mitigate against or reduce this waste from their entire business operation. In sourcing, for example, the failure to reduce the obsolescence and waste of

maintenance, repair, and operating (MRO) supplies or scrap materials can contribute to environmental problems (MIn & Kim, 2012).

Pollution could include emissions, effluents or general waste (Hart, 1995). Since World War II, industrial production has increased by over a factor of 40 and as such it follows that the environmental impacts associated with this growth would have increased as well. Pollution stems from the inefficient use of natural resources and managers are now looking for ways to be more environmentally responsible and conscious of how resources are consumed. The aspect of Product stewardship is that it takes the perspectives of stakeholders and the natural environment itself into consideration with components such as product design or developmental processes. Every step of the supply chain is taken into account with product stewardship; from accessing the raw materials to the manufacturing of the finished product as well as how the product is disposed of. This is done as product stewardship acknowledges that each process would have an environmental impact that can be internalised in the future. Product stewardship allows organisations to redesign their existing product systems, develop new products with reduced product lifecycle costs as well as reducing existing business operations that may be environmentally hazardous (Hart, 1995). The third aspect of the NRBV as presented by Hart is that of sustainable development. Hart, 1995, believes that organisations should cut ties with stakeholders or business partners who could be seen as negative and/or detrimental to their business and the environment as these actions would encourage substantial investment and a long term commitment to market development. This environmentally conscious strategy would constitute a substantial effort and would require a marked commitment to roll out in developing nations and industries to include low impact technology and products as the basis for market entry and development (Hart, 1995).

Social capital is also a major role player in sustainable supply chain practices. Social capital is usually understood as a valuable asset that stems from access to resources made available through social relationships. Social capital theory has provided a theoretical perspective to examine the advantage gained by firms through their social networks (Lee, 2015). Nahapiet & Ghosal, 1998, proposed three dimensions of social capital: cognitive, structural and relational. The cognitive dimension of social capital refers to the shared goals, vision and values between participants in a social network, which provides the parties with shared representations, interpretations, and systems of meaning (Tsai & Ghosal, 1998). Cognitive Capital facilitates the development of common understanding and collective ideologies, outlining appropriate ways for buyers and suppliers to coordinate

their exchange and share each other's thinking processes (Lee, 2015). "Sustainability has deep roots in both the physical and social sciences" (Linton, Klassen, & Jayaraman, 2007, p. 1079). The natural environment will always be affected by business activities such as manufacturing processes and methods of waste disposal. This will also in turn have a direct effect on the current and future quality of life, as proven through natural science and the social sciences. The social sciences include the culture, norms and practices of people and will also affect sustainability. How communities are governed will also shape societies' interaction with the natural environment or ecology. As mentioned above, external pressures such as consumers and NGO's will incentivise and encourage companies to adopt SSCM practices. "Companies need to increase their external legitimization to fit socially constructed systems of norms, values, beliefs and definitions" (Darnall et al., 2006, p. 354). Regulatory pressures play a major role in the process, as they oblige companies to adopt SSCM practices. Regulatory pressures can also negatively influence performance via penalties and fines in those firms that do not respect the regulations (Ageron, Gunasekaran, & Spalanzani, 2012). According to a paper by M. Markley and L Davis, "Firms who are employing a stronger sustainable supply chains, that emphasize lower negative interactions with society and the environment, in addition to employing higher codes of ethics, should have stronger ratings on scales of sustainability measures, customer and employee satisfaction, corporate social responsibility and profitability measures" (Markley & Davis, 2007, p. 769). In light of the research presented above, it can be seen that companies involved along the supply chain need to take into account how they source their materials, how they manage their relationships with suppliers, both upstream and downstream, as well as how they mitigate against potential issues such as health, pollution, waste management and labour issues, such as child or forced labour. This will obviously affect financing to a certain degree.

### Integrated Chain Management

Seuring and Muller (2007), identified three schools of thought with regard to integrated chain management or supply chain management. These schools of thought were based on research conducted into integrated chain management and what the current feelings and findings were. Based on these findings, the three schools of thought are: the material and information flow school, the strategy and cooperation school and the regional industrial network school.

#### 1. Material and information flow school

"The material and information flow school builds models to describe and proactively manage material flows in companies and supply chains by taking

environmental constraints or objectives into account” (Seuring & Muller, 2007, p. 704). This school places emphasis on the monitoring and control of material flows as well as information flows. This school of thought focuses on closed loop supply chains or material cycles and recycling systems. It also concentrates on the consideration and control of material flows and related information needs of an organisation. The theory builds on the management thought of production and logistics management, which further focuses on the analysis, monitoring and the overall control of material flows of an organization. It follows that this school of thought is often associated with life cycle management. This falls in line with the definition, “Sustainable SCM is the management of material, information and capital flows as well as cooperation among companies along the supply chain while integrating goals from all three dimensions of sustainable development, i.e., economic, environmental and social, which are derived from customer and stakeholder requirements. In sustainable supply chains, environmental and social criteria need to be fulfilled by the members to remain within the supply chain, while it is expected that competitiveness would be maintained through meeting customer needs and related economic criteria.” (Seuring S. , 2013, p. 1514).

## 2. Strategy and cooperation school

The essential idea behind this school of thought is it “emphasizes that the management of material flows is not only a technical planning problem dealt with by ideal economic actors, but is also highly dependent on how the environmental and economic information are perceived” (Seuring & Muller, 2007, p. 307). Sustainable supply chain management is often associated with this school of thought as it deals primarily with substance flows and integrated chain management. The strategy and cooperation school recognizes the strategic challenge placed on companies to actively manage their product related material flows. This school of thought supports LCA (Life cycle assessment) modeling. The primary element behind this form of modeling is the assessment of environmental impacts along a supply chain and identifying ways of minimizing and mitigating against these impacts (Seuring, S, 2013). What is interesting with regard to this modeling construct is that it is standardised in ISO 140041 (Seuring, S, 2013, p. 1516), which is often incorporated into integrated reporting.

## 3. Regional industrial network school

The original concept behind this school of thought is, “how organisations exchange material (waste) or energy to better employ the resources used. While the previously described approaches concentrate on vertical supply chains, such industrial symbiosis is also formed horizontally, i.e. with other companies of the same industrial sector, and laterally, i.e. with any other

company in the same region” (Seuring & Muller, 2007, p. 307). The formation and operation of regional industrial networks are often associated with this school of thought as is suggested by the title. These regional industrial networks exchange materials to lower environmental impacts and increase profit from material use. This school of thought is associated with industrial ecology. Multi-criteria decision-making supports this school of thought, as a typical element of this model would be the optimisation of environmental and economic criteria through the balancing of trade offs and the identification of optimal solutions (Seuring, S, 2013).

Based on the literature as so far presented, it is evident that managers and organisations have seen the value and importance of introducing sustainable supply chain management and sustainable development into their business operations and their supply chains. However, more recent research points to supply chain management and sustainability issues and topics as no longer standing alone or acting as separate units within the business strategy or operation (Carter & Jennings, 2002, Seuring & Muller , 2008). New research has been developed in the field of sustainable supply chain management frameworks and how they could act as guidelines or principles that businesses could follow. An example of this research includes Ahi and Searcy. They propose a framework for SSCM (Sustainable Supply Chain Management) that organisations and companies can adhere to in order to improve their SSCM. Ahi and Searcy’s framework was adapted from a study conducted by Seuring and Muller, 2008. The framework consists of three main parts. The first part identifies the triggers and incentives that would encourage the focal organisation to adopt SSCM practices into their business operations. These generally come from overall stakeholders, customers and especially governments. The focal company then passes these sustainability pressures onto its suppliers through two norm strategies (Ahi & Searcy , 2013), namely: supply chain management for risk and performance and supply chain management for sustainable products. According to Muller & Seuring, 2008, supplier evaluation for risk and performance focuses on associated risks and barriers along the supply chain as well as performance concerns from an internal perspective. This is connected to a supplier assessment plan where monitoring, auditing and evaluation take place. This assessment process has two objectives: improving the overall performance of suppliers, and avoiding risks in the supply chain. Dependency, flexibility, quality and speed are the important criteria for measuring improvements in supplier performance, while the possible risks are evaluated according to the dimensions of the triple bottom line (Ahi & Searcy , 2013). Figure 3 below illustrates this model of sustainable supply chain management. The life cycle assessment is a widely used tool to

achieve SCM for sustainable products. This assessment demands various minimum criteria requirements from suppliers when designing or producing the products of the supply chain. In addition, sustainable products require intense communication with suppliers while improving their sustainable practices (Ahi & Searcy , 2013). The authors proceed to claim that management systems play an important role throughout SSCM as they ultimately control the implementation of sustainability, and thereby are placed at the heart of this theoretical framework. By integrating all these factors within Seuring & Müllers' (2008) theoretical framework, one can analyse retail-clothing companies with reference to their actions regarding these factors in order to evaluate how they cope with the retail-clothing sustainability dilemma. Note that in figure 3, the management system would be the focal company and its supply chain policies.

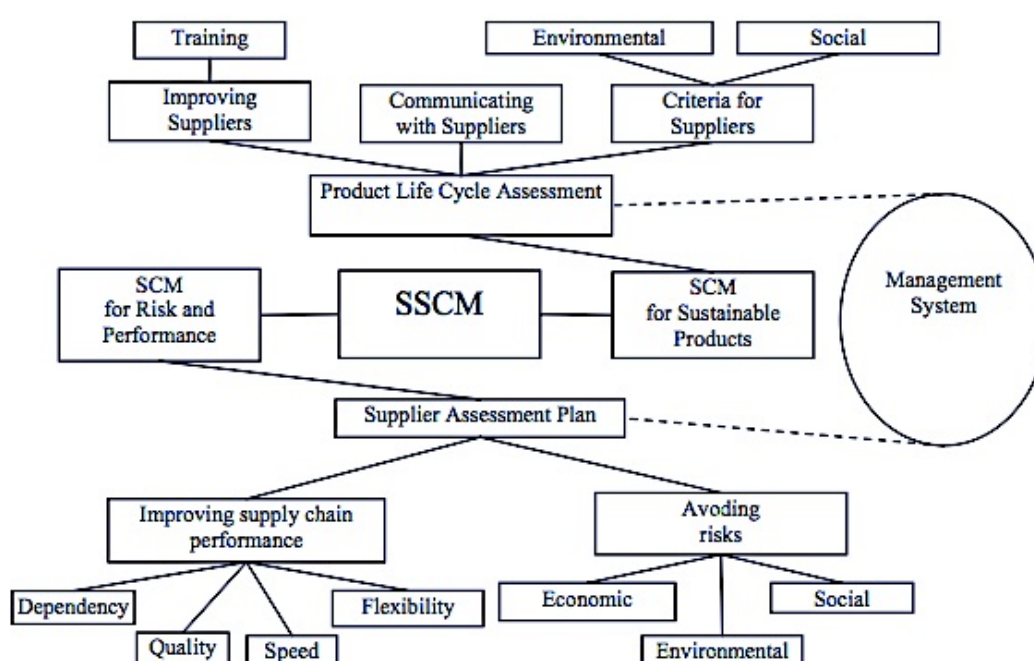


Figure 5: Theoretical Sustainable Supply Chain Management Framework (Turker & Altuntas, 2014, p. 840).

Govindan, Azevedo, Carvalho, and Cruz-Machado (2015), consider supply chain management as a strategic factor for increasing organisational effectiveness and better attainment of organisational goals such as enhanced competitiveness, better customer service and increased profitability. Among the various supply chain management prototypes, the lean, green and resilient are considered critical to supply chain competitiveness and success. Many organisations as such are using the lean methods and strategies to reduce their supply chain costs, improve their product quality and increase their customer responsiveness. Lean paradigm strives to identify and eliminate all non-value added activities, or waste, involved in any kind of business process or supply chain. Lean paradigm can add value to green

efforts by reducing many types of environmental impacts, connecting green practices to stronger financial drivers and improving the effectiveness of green procedures (Tice, Ahouse, & Larson, 2005). Figure 4 below illustrates the lean, green and resilient dimensions and how they might influence a supply chain.

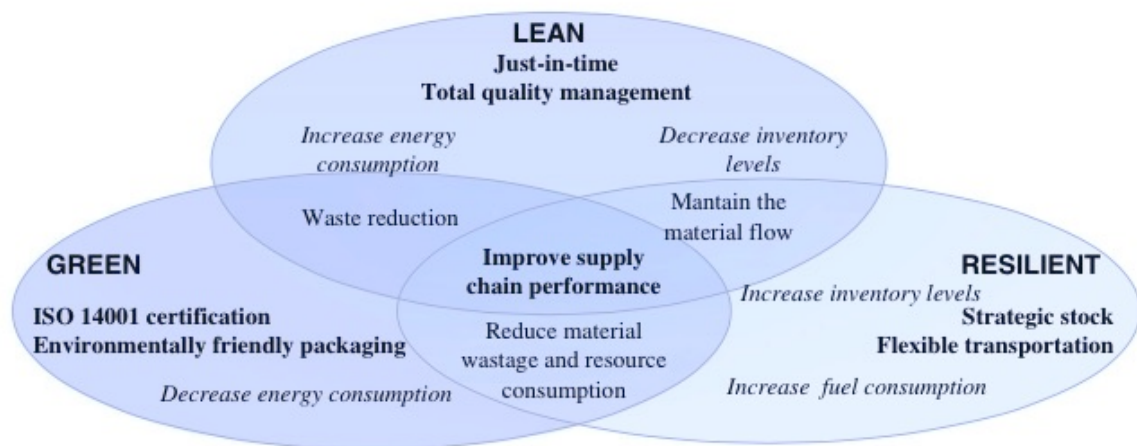


Figure 6: Lean, Green and Resilient main characteristics and their effect on supply chains (Govindan et al, 2015, p. 17).

Carter and Rodger's have developed a sustainable supply chain framework that they suggest businesses should adopt into their supply chain management strategies and processes that could have the potential to lead to economic success for an organisation. Carter & Rodgers (2008), have also identified four aspects of criteria of a business/organisation that would contribute and aid to the sustainability of the firm and supply chain. They consist of risk management, culture, strategy and transparency.

### Risk Management

"Sustainability risk management deals with emerging environmental and social justice risks" (Anderson D. R., 2006, p. 66). Therefore, risk management has attracted the attention of organisational management, as risk has become a viable concern for all organisations. Threats such as Climate change, political instability in certain regions as well as volatile prices has increased the likelihood of both social and environmental disasters in a company. These disasters can in turn affect a company's economic bottom line. Organisations have to now consider these risks and conceptualise possible mitigation scenarios. Embargoes against company's goods are similar to business interruption risks, except no insurance is available to compensate for loss of revenues through a loss of sales. These boycotts are often triggered by sustainability risk events. "Think of Greenpeace and its

boycott of Shell Oil for its plans to sink the Brent Spar, an offshore oil platform, which caused retail sales in some European countries to fall by 30% in a week” (Anderson D. R, 2006, p. 66).

Product lifecycles have evolved over time and now are required to be shorter, and more readily available through an increased demand. This has led to supply chains having to be more integrated and complicated, which creates a greater cost to the focal company. Organisations now realise that in order to meet these demands, they must adopt globalisation and outsourcing strategies. These strategies will lead to competitive advantages and will potentially lower manufacturing costs (Tang & Nurmaya Musa, 2010). In order to combat these cost pressures and meet demand, organisations have looked at ways of simplifying their supply chains and eliminating unnecessary business processes. This has largely been achieved through the reduction of the number of suppliers in the manufacturing process. Not only has this simplified the supply chain and reduced interactions between suppliers and buyers, but it has also improved the overall management of the supply chain. Innovations such as the Internet have made business processes and the sharing of information easier, faster and more convenient than ever. Enterprise resource planning (ERP) technologies and solutions such as Oracle and SAP have cut down the information transaction time and reduced the incidents of inaccuracy and redundancy (Tang & Nurmaya Musa, 2010). One can easily see, based on the literature alone, how these information systems have the potential to improve a supply chain and its functionality, however it has introduced its own sets of problems or concerns such as information disruption. Supply Chain Risk Management could therefore be seen as an important ‘cog’ in SSCM.

An example of where Supply Chain Risk Management failed would be the Eriksson crisis of 2000. Eriksson relied on a single supplier and when the chip manufacturer's factory burnt down, it disrupted Eriksson's supply chain operations. Ericsson's loss was estimated to reach USD 400 million in the T28 model (Tang & Nurmaya Musa, 2010). This is a classic example of the ‘putting all your eggs in one basket’ scenario, which could have been avoided if Erikson had taken some mitigation risk plans into consideration.

In today's market, focal organisations have realized that the responsibility of the supply chain extends beyond just that of their firm but to their partners and suppliers as well. These organisations have realized that the decisions and management choices made by their suppliers will ultimately affect their own development and environmental impact. It could therefore be seen how SSCM could improve an organisations' environmental sustainability (Ageron,

Gunasekaran, & Spalanzani, 2012). To date it has been established that supply chains are a complicated and complex system with multiple processes. It has been noted that there should be an emphasis on integrating business activities into key supply chain processes rather than the more traditional approach of individual functions or units. From a managerial perspective, Supply Chain Risk Management may not be the same when considering the inbound and outbound sides of the supply chain. For example, when risk is discussed in terms of supplier selection, a major concern is to ensure and guarantee the flow of raw materials and resources. However, on the demand side, financial risk (such as customer's possibility of bankruptcy) may appear more important (Tang & Nurmaya Musa, 2010). Therefore, three main risk flows of a supply chain have been identified. They include:

1. Material (Product) flow risk
2. Financial flow risk
3. Information flow risk

#### 1. Material flow risk

Risk that involves the physical movement of resources or materials amongst different supply chain levels falls under material flow risk. Material flow risk comprises: source; make; as well as delivery. Source deals with where the actual product or service is sourced. Tang and Nurmaya Musa, 2010, identify the following as risks that could be associated with source: single sourcing risk, sourcing flexibility risk, and supplier selection/outsourcing, product monitoring/quality and supply capacity. Source was discussed in this study, as the researcher believed that in the South African context it would be most applicable, as research suggests, that most retail clothing companies in South Africa source a large portion of their product from overseas.

#### 2. Financial flow risk

Financial flow risk involves the inability of focal companies or suppliers to settle payments and improper investments of the organisation. Some of the more typical financial flow risks include exchange rate risk, price and cost risk (sunk costs), financial strength of supply chain partners and financial handling/practice (Tang & Nurmaya Musa, 2010). There is also an issue of exchange rates and how they might affect an organisation's profit after tax deductions as well as the supplier range, research and development and other operational decisions of the focal organisation. As discussed, pressures such as climate change and political instability can increase the volatility of raw materials. This can affect the price and availability of the

material or resource depending on the circumstances. Exchange rates can also affect the price of raw materials.

### 3. Information flow risk

As discussed in supply chain risk management, systems such as the Internet have helped to improve supply chain networks and information speed. It can be acknowledged that these Information flows are value-adding commodities that link activities between resource flows and financial flows. Examples of these activities include: inventory status, capacity status, product design changes and process design changes. There are also concerns like information accuracy, information system security and disruption; intellectual property and information outsourcing risks, which are obtained from information flows.

### Culture & Strategy

An organisation's sustainability initiatives and its corporate strategy must be closely interwoven (Rodgers & Carter, 2008). Resource availability has decreased over the years for many reasons, including political tensions or lack of materials. As such, sustainability has become an increasingly important subject. Managers are looking for ways to extend the lifecycle of resources. There has also been a recognition of social sustainability and its role in business strategy in the past few years. In fact, the Mr. Price group, in compliance with the requirements of the Companies Act (71 of 2008), established the Social, Ethics, Transformation and Sustainability Committee in March 2012 (Mr Price Group limited, 2014). This report discloses the social and environmental performance and targets of the group. The report goes on to state that the responsibilities of the committee include the monitoring of the Group's activities as per the Companies Act (71 of 2008) with regard to matters relating to:

- . Social and economic performance
- . Good corporate Citizenship
- . Environmental, Health and Public safety
- . Consumer relationships
- . Labour and employment practices

This is just an example of how businesses have included and adopted social sustainability and investment into organisational culture as part of their business strategy. In the South African context this is of particular importance as there is a history and legacy remaining due to the exclusion of the majority of South Africans by the previous Apartheid government.

## Transparency

Carter & Rodgers, (2008), claim that organisations are able to improve customer relationships and reduce the risk of consumer boycotts through necessary and proper stakeholder engagement. Many companies include stakeholder engagement as feature within their annual integrated reporting. Consumers are becoming increasingly aware of their own environmental impacts and are seeking ways to become more environmentally pro-active. This usually means that customers are more flexible pricewise in terms of green products. This encourages organisations to adopt SSCM practices in order to ensure strong stakeholder engagement that is positive through green products and sustainable reporting on company decisions and operations (Ageron, Gunasekaran, & Spalanzani, 2012).

Based on the literature analysis presented above, we can see that globalisation as well as ethical and cultural pressures from external and internal stakeholders alike has encouraged and persuaded managers to look beyond their organisations' economic bottom line. Supply chain managers must now consider a variety of issues, from fair labour conditions to environmentally friendly product lifecycles and visible reporting. This intercedes with sustainable development, which also focuses on the triple bottom line of development. Managing supply chains in a sustainable manner has become an increased focus of organisations, both big and small and across multiple industries. Through adhering to environmental and social standards along all stages of the supply chain, it ensures that (at least) the minimum sustainability performance target is likely to be reached for the organisation. In support of this, a more responsive approach of adhering to external pressure from governments, consumers and non-governmental organizations (NGOs) and media can be complemented by the development and introduction of sustainable products (Seuring S., 2012). Seuring (2012), proposes four different models of sustainable supply chain management that firms can incorporate into their supply chains. These include life cycle assessment models, equilibrium models, multi criteria models and an analytical hierarchy process.

### 1. Life cycle assessment models

The essential element behind life cycle modeling is environmental impacts which are measured across the supply chain and from there policies or systems are introduced to minimise those impacts. Techniques such as life cycle assessment are used to assist in the determination of how to design a product to minimise its environmental impact over its useable life and thereafter. This field at the interface of engineering, product design and engineering considers resource depletion as well as environmental impacts (Linton, Klassen, & Jayaraman, 2007).

## 2. Equilibrium modeling

The idea of equilibrium modeling is the balancing of environmental and economic factors and thereafter finding an equilibrium or optimal solution for the supply chain.

## 3. Multi-criteria decision making

The multi-criteria decision making model takes into account the optimisation of economic and environmental criteria, usually through the balancing of trade-offs or identifying optimal solutions for the supply chain.

## 4. Analytical hierarchy process

Analytical hierarchy process involves the structuring of a decision process thereby obtaining a solution based on semi-quantitative criteria and respective weights (Seuring S. , 2012).

## Issues relating to Supply Chain management

Over the past decade, the world has become smaller through globalization. This has brought many positive factors to business but has also introduced many challenges that can affect supply chains and become problematic for organisations. There have been unpredictable tragedies including terrorist attacks, wars, recessions, drought, earthquakes and cyber-attacks, to name a few. Two independent studies were conducted; one by the Centre for Research on the Epidemiology of Disasters ([www.cred.be](http://www.cred.be)) and the other by the world's largest re-insurer, Munich Re ([www.munichre.com](http://www.munichre.com)). Historical data indicates that the overall number of natural and man-made disasters has risen intensely over the last 10 years. On top of this, Munich Re report that the average cost of these tragedies has increased by a factor of 10 since 1960. When these disasters do occur, major business disruptions are bound to follow (Tang C. S., 2006). In light of these challenges, companies are now placing an increased emphasis on how they source their products and how they mitigate and cope with these challenges to ensure that their supply chains are not compromised and are able to operate on the same, if not improved, level of efficiency. The last twenty years have also seen growing pressure on businesses to pay attention to the environmental and resource consequences of their products and processes (Giunipero, Hooker, & Denslow, 2012). The sustainability emphasis shifted to green marketing in the 1990s as a means of gaining a competitive edge over the competition. An example of this competitive advantage included that economic profitability could be attributed to a consequence of environmental sustainability. The supply chain and its relationship towards sustainability became a major concern in the 21<sup>st</sup> century. The “consideration of product life cycle during material selection; impact of green purchasing on a firm's supplier selection;

waste management; packaging; and regulatory compliance became key topics of research” (Giunipero, Hooker, & Denslow, 2012). In light of KING 3, organisations have started looking at how they source their products in the most ethical and environmentally friendly manner possible. Initiatives and programmes, such as the Better Cotton Initiative, have been established to try to combat some of the socio-economic problems that organisations might face concerning their sourcing of products and raw materials. Cotton, for example, is grown in a variety of different circumstances and in diverse regions across the world in which the only single common characteristic is a climate favourable to cotton farming. There is a wide array of farming methods and scale within these regions: these range from the large-scale cotton farms of Brazil's Mato Grosso district, to that of small, domestic plots in Southern Asia and West Africa. Moreover, within each of these regions, there are notable differences in size and methods of agriculture. There are still considerable numbers of smallholder farmers growing cotton in North East Brazil, while farms and smallholdings in West Africa and South Asia vary in size, and may engage additional non-family labourers during key stages of the cultivation cycle, such as during harvesting (Ergon Associates Ltd, 2006). These various communities and regions result in very different forms of production, which will affect the peoples’ livelihoods within the region differently due to their social economic standing. As such, a study was commissioned by the BCI to look at the relevant factors that might affect the social sustainability of the Cotton industry in terms of cultivation and the serious challenges that these could have on the industry. The challenges and risks identified included:

#### Health and safety

Risks associated with health and safety include the risk of employees being exposed to harmful toxins through chemicals or pesticides. This is often the result of employees not being provided with the correct safety equipment (PPE) to use while spraying toxic insecticides. Training and information have been acknowledged as a key focus to mitigate against negligence like this. This includes the appropriate, moderate and efficient use of inputs; the provision and use of personal protective equipment (although it is recognised that in some hot and humid climates it may be unreasonable to expect workers to wear PPE, which ultimately puts greater onus on input use reduction).

#### Credit and debt relating to input finance

Issues such as crop failures, increased due to unaffordable rates and taxes, delaying or no payments for services or high input costs have made it increasingly difficult for farmers to repay their debts. Farmers might then

have to take out additional loans to meet these debts and in turn the situation is exacerbated through input misuse or total failure which in turn is due to a lack of information.

#### Worker and producer organization

Within the West African and South Asian regional contexts, issues include a lack of resources that inhibit the ability of organisations to efficiently organise. Through the development of proper credit and other institutions, organisations would be able to address social impacts and challenges more effectively. In Brazil, for example, the challenge is that many of their workers are irregular (i.e. unregistered) and therefore fall outside union structures and do not benefit from either statutory or collectively agreed protections.

#### Gender impact

In West Africa and Southern Asia, cotton cultivation is substantially labour driven. This form of labour is often unpaid 'family labour' or day labourers who are paid low wages for the work they do, which is often tedious and grueling. It should be noted that these labourers are often women who face significant difficulties in gaining access to input credit facilities, due principally to men's ownership of collateral assets

#### Child labour

Child labourers are often contributors to cotton farming practices in West Africa and Southern Asia (Ergon Associates Ltd , 2006). This practice has found to be primarily cotton picking and, depending on the age of the child, school and the health of the child often becomes an issue. This child labour and working conditions are unacceptable under international standards (ILO core conventions).

#### Forced labour / labour coercion

There are parts of Brazil that employ forced labour on their cotton plantations as well as Debt bondage, which is still present in Pakistan and India to some degree. (Ergon Associates Ltd , 2006).

In order to address these challenges and mitigate these social risks, it was proposed that management processes of health and safety should be improved and brought up to standard for farm workers and their management. The provision for clean portable water and washing water was also proposed as a method to mitigate against these risks. In order to address input finance risk, it was further proposed to reduce the reliance of the producer of cotton as well as their indebtedness through establishment or improvement on producer organisation. Another proposition was to enable women to decide their level of participation in cotton cultivation; as these women should have equal opportunities and access to credit. It was also

suggested that children over the nationally mandated statutory minimum age, where this work would not be to their physical or education detriment, should be allowed to work and this should be within the ILO-defined strictures of acceptable 'light work'. It was also brought forward that all forms and structures that promote or endorse bonded or forced labour should be abolished in cotton cultivation that falls under the Better Cotton Initiative (Ergon Associates Ltd , 2006). Organisations that have realised the need for better Cotton management and production practices include companies such as Woolworths Holding Limited.

## Drivers of sustainability

### 1. Involvement of top management

Top management of an organisation is important when it comes to encouraging the firm to assess its role in society as well as the role of the firm's environmental management programmes.

### 2. Government regulations

Government regulations have been identified as a driver of sustainability because of non-adherence to systems of legislation, companies risk fines, and unnecessary legal costs. Furthermore, firms can avoid expensive capital refits by keeping ahead of legislation (Giunipero, Hooker, & Denslow, 2012). Government regulation can also be a driver of sustainable business practices because firms might now exist in environments where there are increased environmental regulations as well as increased market pressure to be environmentally conscious.

### 3. Financial benefits

Studies have demonstrated that corporate social obligation is beneficial to businesses. Waddock and Graves, 1997, reasoned that corporate social performance and profit are fundamentally and decidedly related when it comes to business operations. Bansal and Roth, 2000, conducted research into the reasons behind what might make associations become environmentally friendly and subsequently they added their findings to a model that could clarify corporate ecological responsiveness. Bansal and Roth recognised three main motivations for associations to advance toward environmentally friendly business operations. These motivations included: competition (potential for natural responsiveness to enhance long haul profitability); legitimisation; and environmental obligation that affect corporate ecological responsiveness. They found that organisational self-interest, including elements of both competitiveness and legitimacy, were necessary to spur the movement toward eco-responsibility (Giunipero, Hooker, & Denslow, 2012). It could therefore be said that financial opportunities drive corporate ecological responsiveness. Another point would be that by intensifying and improving the production processes, organisations could

reduce their environmental impacts while simultaneously lowering the costs of their inputs and decreasing their environmental waste.

#### 4. Competitive advantage

More and more organisations are beginning to practice and implement green marketing in order to gain a competitive advantage over their rivals. These companies have realised that by adopting environmentally friendly strategies, they can create more opportunities for themselves and simultaneously mitigate against social issues. These strategies could include, “eco-efficiency, beyond compliance leadership, eco-branding and environmental cost leadership” (Giunipero, Hooker, & Denslow, 2012).

#### 5. ISO certification

Handfield, Walton, Sroufe, & Melnyk, 2002, introduced the ISO 14001 certification standard and an increased awareness of waste management led to organisations now having a heightened cognisance of environmental obligations. Product design, process design, purchasing and manufacturing practices are now all beginning to be affected as a direct result of this awareness. Globally organisations within certain industries are being pressurised to adhere to and address their environmental performance following the release of the ISO 14001 (Handfield, Walton, Sroufe, & Melnyk, 2002).

#### 6. Customer demand

Consumers have become a lot more environmentally aware in the last two decades and the individual consumer believes that he or she can contribute to the solving of environmental problems through their purchasing decisions. Companies are encouraged by relevant stakeholders, including consumers, local communities, non-governmental groups and the environment itself to implement environmental standards into their business practices (Giunipero, Hooker, & Denslow, 2012).

### Barriers of Sustainability

#### 1. Costs of sustainability and economic conditions

There is a belief amongst companies that the more emphasis they place on environmental protection and investment into sustainability, the more these investments will erode their competitive advantage by increasing costs to the company with no immediate financial benefit. Initially, the ‘greening’ of a business can be seen as an expensive investment. Organisations will have to front the costs for sustainable investments such as more energy efficient machines. There are a variety of other related expenses that need to be considered when organisations begin implementing green changes, specifically in the manufacturing processes (Mr Price Group Limited, 2014).

This is especially true in the retail industry where much machinery is used in the garment manufacturing process. Three quarters of logistic contracts included environmental impact targets of which, only 46% were afforded for the cost of compliance to these contracts (Hoffman, 2008). Hoffman predicts that shippers will continue to require green initiatives for their business operation while not providing the necessary budget for service providers.

## 2. Lack of sustainability standards and appropriate regulations

Koplin, Seuring, & Mesterharm (2007), state that globalisation has facilitated multiple suppliers to coordinate with an organization in order to obtain natural resources or materials and products. Each of these suppliers rely on a multilevel supply chain for the success of their own production and processes. These structures or processes make the supplier network complex and as a result purchasing has become more complicated for organisations (Koplin, Seuring, & Mesterharm, 2007). Today's business environment requires large and often complex supply chains to ensure quality and reliability of their services to their consumers in the different markets and regions (Giunipero, Hooker, & Denslow, 2012). This presents various challenges such as varying standards and regulations in terms of sustainability; different geographic locations, which presents its own set of unique sustainability issues; as well as difficulty in terms of measuring and evaluating compliance. In the current era of globalisation, two major developments have changed the way societies aim for sustainable production and consumption. Firstly, production and consumption processes are no longer taking place within the boundaries of one single country or nation-state, but are increasingly trans boundary in nature and, secondly state authorities have proved to be increasingly unable to regulate and govern the sustainability of globalised production and consumption (Bush, Oosterveer, Bailey, & Moi, 2015).

## 3. Misalignment of short term and long-term strategic goals

Giunipero, Hooker, & Denslow (2012), found that business leaders are not always in agreement when it comes to sustainability and what its benefits or implications might be for a business. It was established that there was a general lack of consensus or clarity amongst management as to what the definition of sustainability should be and how it should be applied to each organisation. Some managers defined the concept of sustainability more broadly whereas others focused on a particular scope. It was also found that there was a misunderstanding and lack of consensus as to how organisations should measure sustainability and the companies' sustainable processes (Berns, et al., 2009).

This could be because of a number of reasons including that management may be misinformed about the full range of drivers towards sustainability. Different components of an organisation may not share the same definition of sustainability or may lack a definition altogether. The goals of an organisation may not be fully understood when it comes to the implementation of sustainability. Finally, it is often difficult to measure sustainability once strategies have been implemented, as there may be a disagreement on what metrics would be deemed appropriate (Giunipero, Hooker, & Denslow, 2012). Research has also pointed out that there could be problems in forecasting and planning beyond a 5-year period, typical of most investment frameworks. There may also be difficulties in regulating sustainability frameworks and investments and predicting and planning amidst high uncertainty, including regulation and consumer preferences.

Based on the research presented above, it is evident that there are many factors and issues that influence an organisation when it comes to implementing sustainable supply chain management practices into their firms, whether they be social issues such as child labour, BBBEE, working conditions, issues relating to health and safety, or environmental standards such as GRI guidelines or ISO 14001. There are also financial issues to consider such as reducing costs through investments into improving supply chain efficiencies and manufacturing methods or equipment. The research also points to the drivers and barriers of sustainability and how these influence a firms' management decisions with regard to supply chain management. As time has progressed in the industry, so has there been an increased awareness on the consumers' part with regard to environmental and social awareness. This 'awareness' has increased pressure on firms within the retail industry, and in particular food and clothing manufacturers, to invest and adapt their supply chain management as well as other management strategies to include environmentally and socially conscious strategies as part of their business plans thus resulting in improved efficiency and sourcing.

## Reporting on sustainable supply chains

Business and academia alike have come to realise the importance and relevance of sustainability since the end of the 90s' (Hahn & Kühnen, 2013). It has been found that there are numerous stakeholders who contribute to the success or failure of an organisation. These stakeholders include: employees, customers, suppliers, creditors, governments and other public authorities as well as non-governmental organisations. Organisations must now rely on sustainable and integrated reporting of their business practices to try meet the needs and demands of these stakeholders. These integrated reports contain the organisations financial results as well as environmental and social reports of the organisation. As discussed earlier, when one thinks of sustainable reporting, there are a number of different levels and terms that fall under the name of sustainability. Hahn & Kühnen (2013), presented figure 7 in order to help provide an overview and connection of basic concepts and terminology relating to sustainability reporting.



Figure 7: Overview and relations of basic concepts and terminology relating to sustainable reporting (Hahn & Kühnen, 2013, p. 7).

Organisations hope to increase their transparency and increase their brand value through the disclosure of their sustainable business information with stakeholders. This disclosure can lead to improved stakeholder relationships through the increasing of their reputation and legitimacy. Disclosing

organisations' sustainable information can also help to motivate employees and gain a competitive advantage over rival organisations (Hahn & Kühnen, 2013). Sustainability reporting has seen many trends and shifts over the past few decades with regard to sustainability metrics and guidelines but currently the Global Reporting Initiative (GRI) has become the standard and benchmark when it comes to sustainability reporting for an organisation. The GRI's Sustainability Reporting Guidelines offers any type of organisation across multiple industries, a framework to allow companies to start reporting on their sustainability performance in a structured and comprehensive way, including a range of possible performance indicators to report on within the economic, social, and environmental dimensions of sustainability i.e. the triple bottom line (Cappuyns, Vandenbulcke, & Ceulemans, 2015). These reporting principles are fundamental to an organisation achieving their desired or required transparency and what they wish to disclose in their sustainable reports, and should be applied by all organisations when preparing a sustainability report for disclosure (Global Reporting Initiative, 2014).

Organisations are faced with a wide range of sustainability topics on which they could report. Relevant topics are those that may reasonably be considered important for reflecting the organisations economic, environmental and social impacts, or influencing the decisions of stakeholders, and, therefore, potentially merit inclusion in the report. "Materiality (topics that have a direct or indirect impact on an organisations ability to create, reserve or decrease economic, environmental and social value for itself, its stakeholders and society at large)" (Cappuyns, Vandenbulcke, & Ceulemans, 2015). According to the Global Reporting Initiative (2014), when organisations are determining what aspects or characteristics of their sustainability to report on, organisations should first test and ask the following:

- Reasonably estimable sustainability impacts, risks, or opportunities such as global warming, HIV-AIDS, poverty, identified through sound investigation by people with recognized expertise, or by expert bodies with recognized credentials in the field
- Main sustainability interests and topics, and Indicators raised by stakeholders such as vulnerable groups within local communities, civil society
- The main topics and future challenges for the sector reported by peers and competitors

- Relevant laws, regulations, international agreements, or voluntary agreements with strategic significance to the organization and its stakeholders
- Key organizational values, policies, strategies, operational management systems, goals, and targets (Global Reporting Initiative, 2014).

Figure 7 below illustrates how an organisation might begin to examine and identify business aspects before evaluating what aspects to disclose in their sustainability reporting.

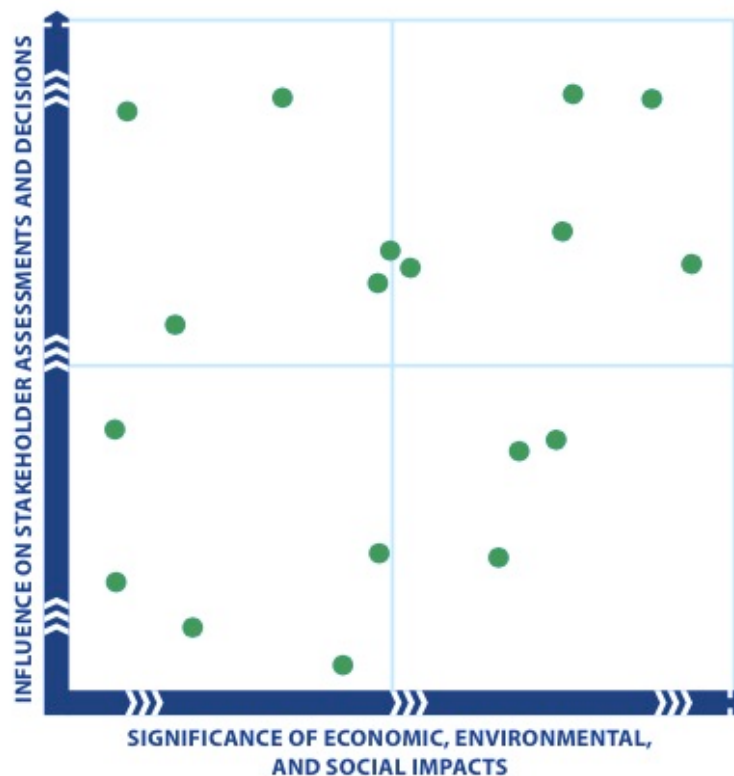


Figure 7: Visual representation of prioritization of aspects (Global Reporting Initiative, 2014, p. 12).

From here, there are various standards of disclosure that an organisation should report on according to G4. Table 2 on the following page shows the various standards of disclosure according to the G4 GRI reporting guidelines. It should be noted though that different industries and organisations would focus their reporting more on certain aspects than others, depending on the organisation.

| Indicators by Aspects                   |                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Category: Economic                      |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                         | <ul style="list-style-type: none"> <li>• Economic performance</li> <li>• Market presence</li> <li>• Indirect Economic Impacts</li> <li>• Procurement Practices</li> </ul>                                                                                                                                                                                                                         |
| Category: Environmental                 |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                         | <ul style="list-style-type: none"> <li>• Materials</li> <li>• Energy</li> <li>• Water</li> <li>• Biodiversity</li> <li>• Emissions</li> <li>• Effluents and Waste</li> <li>• Products and Services</li> <li>• Compliance</li> <li>• Transport</li> <li>• Overall</li> <li>• Supplier Environmental Assessment</li> <li>• Environmental Grievance Mechanisms</li> </ul>                            |
| Category: Social                        |                                                                                                                                                                                                                                                                                                                                                                                                   |
| <i>Labour practices and decent work</i> |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                         | <ul style="list-style-type: none"> <li>• Employment</li> <li>• Labour/Management Relations</li> <li>• Occupational Health and Safety</li> <li>• Training and Education</li> <li>• Diversity and Equal Opportunity</li> <li>• Equal Remuneration for Women and Men</li> <li>• Supplier Assessment for Labour Practices</li> <li>• Labour Practices Grievance Mechanisms</li> </ul>                 |
| <i>Human rights</i>                     |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                         | <ul style="list-style-type: none"> <li>• Investment</li> <li>• Non-discrimination</li> <li>• Freedom of Association and Collective Bargaining</li> <li>• Child Labour</li> <li>• Forced or Compulsory Labour</li> <li>• Security Practices</li> <li>• Indigenous Rights</li> <li>• Assessment</li> <li>• Supplier Human Rights Assessment</li> <li>• Human Rights Grievance Mechanisms</li> </ul> |
| <i>Society</i>                          |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                         | <ul style="list-style-type: none"> <li>• Local Communities</li> <li>• Anti-corruption</li> <li>• Public Policy</li> <li>• Anti-competitive Behaviour</li> <li>• Compliance</li> <li>• Supplier Assessment for Impacts on Society</li> <li>• Grievance Mechanisms for Impacts on Society</li> </ul>                                                                                                |
| <i>Product responsibility</i>           |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                         | <ul style="list-style-type: none"> <li>• Customer Health and Safety</li> <li>• Product and Service Labeling</li> <li>• Marketing Communications</li> <li>• Customer Privacy</li> <li>• Compliance</li> </ul>                                                                                                                                                                                      |

Table 2: G4 specific standard disclosure overview (Hahn & Kühnen, 2013)

Organisations usually outsource the measurement of their corporate sustainability dimensions, i.e. the triple bottom line, to external organisations. These organisations usually already have scales and instruments to quantify an organisations' corporate sustainability and assess the level of implementation (Montiel & Delgado-Ceballos, 2014). Table 3 below illustrates the GRI reporting measures as found by various studies and their relationship towards the triple bottom line. This table supports Table 2: G4 specific standard disclosure overview as presented by Hahn & Kühnen, 2013.

| Source                           | Measures                         |
|----------------------------------|----------------------------------|
| Global reporting initiative(GRI) | <b>Economic</b>                  |
|                                  | Economic performance             |
|                                  | Market presence                  |
|                                  | Indirect economic impacts        |
|                                  | <b>Social</b>                    |
|                                  | Labour practices and decent work |
|                                  | Human rights                     |
|                                  | Society                          |
|                                  | Product responsibility           |
|                                  | <b>Environmental</b>             |
|                                  | Materials                        |
|                                  | Energy                           |
|                                  | Water                            |
|                                  | Biodiversity                     |
|                                  | Emissions, effluents and waste   |
|                                  | Products and services            |
|                                  | Compliance                       |
|                                  | Transport                        |

Table 2: Examples of Corporate sustainability measures from secondary sources (Montiel & Delgado-Ceballos, 2014).

From what can be understood so far from the literature discussed is that companies rely on sustainability reporting in order to meet the needs or requirements of their stakeholders. The criteria for sustainability reporting falls under three main categories according to the GRI reporting guidelines. These include: Financial aspects, environmental aspects as well as social aspects (Global Reporting Initiative, 2014). Economic sustainability is usually well understood amongst organisations. At the plant level, i.e. the manufacturing level, it has been operationalised as production or manufacturing costs of products or services. However, the definition of environmental and social sustainability is not as clear to management. At the plant level, environmental sustainability refers to the use of energy and other resources and the ecological footprint companies leave behind as a result of their operations. Environmental sustainability therefore is often related to matters such as waste reduction, pollution reduction, energy efficiency,

emissions reduction, a decrease in the consumption of hazardous/harmful/toxic materials, and a decrease in the frequency of environmental accidents, etc. Social sustainability shifts the focus to both internal communities (i.e., employees) and external ones (Pullman et al., 2009). Social sustainability means that organisations (and manufacturing plants) provide equitable opportunities, encourage diversity, promote connectedness within and outside the community, ensure the quality of life and provide democratic processes and accountable governance structures (Gimenez, Sierra, & Rodon, 2012). In order to account for and understand the triple bottom line, certain key performance indicators are chosen for each category that can then be compared to best practice or against a benchmark year to measure the rate that sustainability is being incorporated into a firms' business practices and supply chain.

### Detriments of sustainable reporting

Whilst one can see the benefit of sustainable reporting and how this can meet the needs of stakeholders and provide useful information to the consumer, it should be noted that there are also limitations to the topic of sustainable reporting. When one examines figure 6, as proposed by Hahn & Kühnen, 2013, sustainable reporting falls under the external information disclosure. Therefore, while the information is useful and helpful to a degree, it is limited in a sense that organisations may choose to omit information from the report and external parties may not be privy to this information. This is an example of a possible limitation of this study as mentioned in chapter 3.

### Corporate size and financial performance

Corporate size is often associated with a positive relationship with sustainable and integrated reporting. Larger organisations are thought to have a larger environmental and social impact from business activities and processes, and therefore there is a greater external pressure by external stakeholders to improve and disclose their sustainable management practices (Hahn & Kühnen, 2013). Smaller companies however might have higher marginal costs of disclosure. At first glance, these results and train of thought are widely supported. Research in the past has often relied solely on the premise that profitability of an organisation would increase the leverage of a company to bear the costs associated with sustainability reporting and to mitigate against potentially harmful information (Hahn & Kühnen, 2013). Sustainability reporting can often be seen as a way for companies to legitimise their business operations towards benefactors of the organisation such as creditors. These steps towards sustainable reporting can often lead to incentives for an organisation (Haniffa & Cooke, 2005).

### Environmental and social performance

Little attention has been paid in the past to the ability of social and environmental impacts to affect the profitability of a company (Hahn & Kühnen). As a result, there has been little focus on environmental and social performance. Initiatives such as the Dow Jones sustainability index and the Global reporting initiative have provided criteria that organisations can implement and adopt in order to measure their performance. These measures include environmental transgression fines, plus pollution and effluent discharge data. Sustainability reporting can often be seen as a way for companies to signal good performance. However, it is also possible for organisations that are not doing well to face increased pressure from stakeholders and therefore encourage a greater amount of effort and investment into sustainable reporting to mitigate against these pressures. This implies a negative relation between performance and sustainability

reporting (Hahn & Kühnen, 2013). The authors suggest that the age of a company's assets is also used as a variable that can be related to the measurement of sustainable investment, particularly environmental performance. Stakeholders may assume that older equipment that has a higher level of pollution may result in reluctance for proactive reporting, whereas newer equipment or facilities may spark a greater motivation to report proactively. This equipment is usually fixed assets such as a plant or warehouse.

#### Ownership structure

Publicly listed companies can be considered to be more actively engaged in reporting in order to comply with certain regulations, adopt good practice by competitors, and/or cope with stakeholder pressure (Hahn & Kühnen, 2013). This is supported by Haddock (2005), who found that companies listed on the stock market were associated with a higher adoption of sustainable reporting practices (Haddock, 2005). Concentrated ownership, often assumed if an investor owns more than 20% of the outstanding voting shares, can be considered to hinder sustainability reporting since dominant shareholders are assumed to already have access to relevant information. In comparison, a dispersed ownership structure increases the need to reduce information asymmetry (Hahn & Kühnen, 2013).

#### Conclusion of literature review

In conclusion, based on the literature discussed in the literature review, many discussion points and topics have been established and addressed with regards to sustainable supply chain management. These topics include supply chain management, sustainability and the associated performance measures that fall under the triple bottom line. Issues of supply chain management were also discussed and this covered barriers and potential drivers of sustainability as well as upstream and downstream capital. The reporting of sustainability was also discussed and examined and this included topics such as ownership structures, financial performance and GRI reporting guidelines for organisations to adhere too when disclosing their business operations to the public or other relevant stakeholders.

The themes that were found in this literature review included matters of Globalisation, social issues such as health, safety and labour. Profitability, environmental impacts and corporate social initiatives were also found throughout large portions of this literature review. There was also a theme of product lifecycles. All topics raised and discussed could be seen as important concepts when it comes to supply chain management and the retail clothing industry as it relies heavily on the procurement of natural resources and manufacturing processes which is often resource heavy.

The South African economy is one of vast unemployment and economic disparity between classes of society. There are topics of labour, safety, and BBBEE scores to consider. These topics can place pressures as well as create opportunities for the Industry of South Africa to create employment, diversify business operations and create economic opportunity for the less fortunate through CSI initiatives and through in house prospects for their staff across all levels of the supply chain. However, this also means that corporations cannot just look at improving technology and reducing costs associated with employment.

What begins to emerge from the literature review is that until very recently, there was very little focus on research into the environmental and social aspects of sustainability and the relationship these pillars of the triple bottom line might have on profitability. A reason for this could be, in the researcher's opinion, that many social performance measures could be hard to quantify, such as how one would measure the level of healthcare, for example, which could influence or show a relationship to the profitability of an organisation or the efficiency of their supply chain. This means that it is potentially difficult to measure this correlation except through the measurement of cost reductions or other financial indicators. There are many factors that influence an organisation that extend beyond financial measurements and returns such as emotions and employee satisfaction. The trick in this instance is finding ways to evaluate and quantify them. Another interesting finding from the literature review is that focal companies or organisations are, according to the literature, largely responsible for the environmental and social standards of their suppliers and that the costs of sustainable business rest on the focal company. This is an interesting observation as the researcher was under the guise that suppliers might be held accountable by the focal company themselves for the level of sustainability their business operations employ. It was thought that focal organisations could place measure on these suppliers through using rival suppliers to ensure that operations are up to standard. This could be seen as a means to inspire suppliers to maintain the highest level of operations. Also significant is that the South African retail clothing industry has limited options and capacity when it comes to their choice of suppliers and this reduces the leveraging power of the focal companies. This also means that as it stands, organisations on the South African platform still have to import a large part of their product from cheaper overseas markets. It is also difficult to measure and ensure that foreign suppliers are meeting the focal companies' code of conduct. These are just a few pertinent topics that the researcher identified from the literature review that are of particular interest to the Retail clothing industry of South Africa.

In summation, based on the literature above, it could be established that companies need to take all of the above mentioned discussion points into consideration when it comes to their management decisions and strategies. This task is not easily achieved, as there are barriers towards sustainability and many pressures that organisations might face. However, though these pressures might exist, through processes and innovations like globalisation, technological innovation as well as resource scarcity and competition, it is no longer feasible for firms to act as sole entities but rather to control the entire supply chain. In order to control entire supply chains, management within organisations need to adapt and become more environmentally and socially aware of their procurement and sourcing strategies along their supply chain. Companies have realised that they can 'do good by being good'. Research suggests that firms should take into account and consider sustainability along all three pillars of the triple bottom line, namely the environment, social and economic performance. This will lend towards financial benefits in the long term as well as a competitive advantage over rival firms (Carter & Rogers, 2008) (Giunipero, Hooker, & Denslow, 2012) (Anderson D. R., 2006). Accordingly, the following propositions have been established.

#### Proposition 1

Firms within the retail clothing industry of South Africa that improve social sustainability and supplier efficiencies along their supply chains achieve improved economic sustainability.

#### Proposition 2

Firms that partake, implement and report on Sustainable Supply Chain Management will achieve higher economic performance in the long term when compared to those firms that pursue only one or two of the three components of the triple bottom line.

### 3. RESEARCH METHODOLOGY

Existing theories might be taken up to gain a first insight into the phenomenon studied. Case studies can be used for different purposes. Yin (2003), distinguishes between three different types of case studies including exploratory, descriptive and explanatory case studies.

For this research, a case study analysis will be carried out evaluating the integrated reports of appropriate clothing retail companies within South Africa, supplemented by interviews with appropriate parties. “A case study is an empirical enquiry that (1) investigates a contemporary phenomenon within its real life context, especially when (2) the boundaries between phenomenon and context are not clearly evident” (Yin, 2003, p. 13). A major strength of this research is that it is a flexible, sometimes even opportunistic research strategy (Seuring S. A., 2008), Where a weakness might be that the process of case study research is not well documented. Case study research investigates a contemporary phenomenon in its real life context (Yin, 2003), so that, for example,

- An exploratory case study is aimed at defining the questions and hypotheses of a subsequent study (not necessarily a case study) or at determining the feasibility of the desired research procedure.
- A descriptive case study presents a complete description of a phenomenon within its context.
- An explanatory case study comprises data bearing on cause-effect relationships – explaining how events happened.

#### Research methodology /paradigm

This research report is both a quantitative and qualitative examination of the integrated reports of appropriate clothing retail companies of South Africa. The research paradigm of this report is an explanatory case study approach. This approach is appropriate because the study will apply a conceptual framework established from previous research found in the literature review. Turker & Altuntas, 2014, developed a theoretical framework that companies can use as a guide to improve their sustainable supply chain management. (Turker & Altuntas , 2014). It is intended that this study will test and apply this framework to companies within the retail clothing industry of South Africa that are listed on the Johannesburg Stock Exchange, or who have provided their integrated reports to the public. The research will have a qualitative

aspect as it is hard to quantify financials of different companies because no two companies are the same and therefore the results would not be valid or fair. As such, the researcher will make use of Triangulation. Triangulation is broadly defined as "the combination of methodologies in the study of the same phenomenon." Given basic principles of geometry, multiple viewpoints allow for greater accuracy. Similarly, organisational researchers can improve the accuracy of their judgments by collecting different kinds of data bearing on the same phenomenon. (Jick, 1979). The integration of quantitative and qualitative research can give us a broader understanding of our research. Quantitative research can describe magnitude and distribution of change, for instance, whereas qualitative research gives an in-depth understanding of the social, political and cultural context. Mixed methods research allows us to triangulate findings, which can strengthen validity and increase the utility of our work (The Open University, n.d.).

## Research Design

Little research has been conducted into this field to date and as such, there are limited cases available or made aware of to the researcher. The research design therefore made use of a multicase design, which makes use of replication logic but it can also be used to select typical cases within a certain domain (Eisenhardt, 1989). For this study, a multi case design was chosen. (Stuart et al., 2002, p. 420) propose a five-stage research process that can be used for case study research and explain in detail how each step should be carried out when conducting case study research. This research methodology will be based off this research process. The research will make use of inferential statistics, as the sample selected for the study is too small to draw an accurate or fair comparison of current trends within the clothing retail industry of South Africa. Inferential statistics will be used because the researcher is trying to reach conclusions that extend beyond the immediate data alone (Research Methods Knowledge Base, 2006).



Figure 8: The five-stage research process model (Stuart, McCutcheon, Handfield, McLachlin, & Samson, 2002).

## Stage 1. Research Question

### Theoretical Aim

The first theoretical aim of the research is to establish whether organisations within the retail clothing industry of South Africa that improve social sustainability and supplier efficiencies along their supply chains will lend to improved economic sustainability.

The second theoretical aim of the research is to establish if organisations that partake, implement and report on Sustainable Supply Chain Management will achieve higher economic performance in the long term than those firms that pursue only one or two of the three components of the triple bottom line.

## Stage 2: Instrument development

### Cases

The number of cases selected for this research is six individual companies. Information was gathered from the integrated reports of the companies and related to information provided with regard to supply chain, sustainability and financial performance.

### Case Selection

The cases that were chosen for analysis include organisations within the retail clothing industry that have operations in South Africa and are listed on the Johannesburg Stock Exchange. Companies that are not listed on the JSE but have made their integrated report and financial statements available will also be considered as part of the sample. The reason that the researcher has chosen to use listed companies of the JSE that are in the retail clothing sector in particular is that all the financial and operational results are available openly and the researcher wishes to narrow the study down to just the retail clothing sector in the hope of a more detailed and comprehensive study. Cases selected were single cases applying solely to each individual company and their results. These cases will be analysed to determine whether there is a relationship between the findings and the theoretical aim and if the findings are a representable case of the clothing retail industry.

## Stage 3: Data gathering

### The research instrument

The research instrument that will be a case study analysis of 6 companies that are involved and operate within the retail clothing industry of South Africa. These cases were selected because it is hoped that they are representative of the field of retail clothing of South Africa. The case study

will examine and make use of data found in the integrated reports of the participating companies. The study will use this type of instrument because it is believed that it will better equip the researcher to test the different attributes of (Turker & Altuntas , 2014). The researcher will also examine the framework proposed by (Ahi & Searcy, 2015) and the Global reporting initiative guidelines. These frameworks and guidelines were selected because they provide an overview of what an ideal sustainable supply chain might look like and what metrics should be considered.

An open questionnaire was also used as a secondary source with willing participants to try to get a deeper understanding and in depth analysis as to why organisations incorporate sustainability into their company strategies and whether they actually use and agree with the attributes of the Sustainable Supply Chain Management Framework.

Case studies are used as a research method if contextual factors are taken into account but at the same time limit the extent of the analysis (Eisenhardt, 1989). Applying a flexible, sometimes even opportunistic, research strategy is one of its major strengths, but might also be a major weakness of case study research, in particular, if the process is not well documented (Seuring S. A., 2008). An advantage of open-ended questionnaires is that it allows the respondent to give a more personal answer that is not limited to a set number of responses. A disadvantage of open-ended questions is that respondents may not feel compelled to answer the questions to the best of their ability.

#### Data gathering

Initially, the data was gathered through analyse of companies' integrated reports as well as other appropriate documents, websites and publications. This was on the basis that companies would disclose their sustainability practices as part of their report and would adhere to the guidelines as set out by the GRI (Global Reporting Initiative, 2014). Interviews were used as a secondary source in order to support the findings and in an attempt to gain a deeper understanding of organisations within the retail clothing industry and their thoughts on sustainable supply chain management. The interviews were conducted one on one or over the phone with a sustainability analyst, supply chain manager, or relevant person. Primary data was drawn from the companies' financial results as well as their integrated reports.

## Stage 4: Data analysis and interpretation

The data analysis will take place from an examination of integrated reports of retail clothing companies within South Africa that have made their reports available to the public. The GRI provides corporate sustainability measures that organisations can adhere to. These include indicators that fall under the triple bottom line i.e. economic, social and environmental (Hahn & Kühnen, 2013; Montiel & Delgado-Ceballos, 2014). These indicators are further supported by Ahi & Searcy, 2015. The analysis will make use of categorical variables that fall under the economic, environmental and social scope of sustainable supply chain management. Numerical measures will be analysed from these categorical variables and compared to the level of sustainable supply chain management as found by Turker & Altuntas, 2014. As no comprehensive inventory of metrics applied to GSCM and SSCM is yet available (Ahi & Searcy, 2015) the researcher has chosen to limit the categorical indicators to economic: Profit Margin, Operating Margin, E.A.T Margin, Debt to Equity, Current Ratio and Market Capitalisation, Environmental: Carbon measurements and water use. The social indicators will include: Total employees, training and development spend, CSI spend, BB-BEE rating and injury frequency. These measurements are justified through the Global reporting Initiative (Global Reporting Initiative, 2014). Interviews will be used as a secondary source to gain a deeper insight into the organisations and their sustainable supply chain management practices.

## Stage 5: Dissemination

### Limitations of the study

- The GRI sustainability framework could be problematic in that the framework was not designed to primarily address the measurement of sustainability in the supply chain context.
- The sample that was selected and had the necessary information is too small and as such, the study is not quantifiable enough to draw a fair conclusion from the findings.
- Respondents may not feel comfortable to share sensitive information.
- Respondents may not complete the questionnaires
- Respondents may not be totally honest about their business practices
- Respondents may not take the questionnaires seriously.
- Respondents may cancel interviews

These limitations could implicate the credibility of the data collected from respondents. As the sample for this study may be small and the study is mostly an analysis of integrated and financial reporting, it may limit some

findings. The study therefore makes use of inferential statistics to try to gauge and reach a conclusion that extends beyond the data alone.

### Validity and reliability

#### External validity

External validity examines whether or not an observed causal relationship should be generalised to and across different measures, persons, settings, and times (Calder, Phillips, & Tybout, 1982). The generalisability of this study is limited, as it will only take into account willing participants within the South African retail-clothing sector and the factors that affect this specific industry. As the aim of this study is to test whether sustainability employed along the supply chain has a relationship with the firms' economic success within the retail-clothing sector alone and as such, the external validity of this study would be limited.

#### Convergent validity

The convergent validity of the study will be tested by comparing the results of this study, to the results of retail-clothing firms integrated reporting to see whether a correlation exists. This study has not been done in South Africa so the convergent validity may be limited in this study.

#### Internal validity

Internal validity addresses whether or not an observed co-variation should be considered a causal relationship (Calder, Phillips, & Tybout, 1982). This researcher will make sure the internal validity is valid throughout the study by ensuring the data collection process is uniform throughout. This study will ensure internal validity by replicating the questionnaire structure and questions with each respondent or participant. Multiple respondents within individual firms will assist with internal validity of this study. Alignment with integrated reports and financial results will help to support internal validity.

#### Reliability

Reliability refers to the consistency of a measure of a concept (Bryman, 2012). There are three prominent factors when testing whether a concept is reliable. These include stability, internal reliability and inter-observer consistency. This study will use stability and internal reliability as criteria in testing the study's reliability. By sticking to these criteria, the researcher will try to maximise the reliability of the study. To ensure the reliability of this research, the study could be repeated in following years to test whether the relationship (if any) of sustainability and economic success still exists. Internal reliability of this study can be ensured through evaluating the responses of the firms and seeing that there is a correlation in the answers.

### Demographic profile of respondents

This study focuses on a qualitative as well as a quantitative study of integrated reports and as such, the use of demographic profiles of respondents is not deemed important by the researcher. A table will be included on the following page however for those that wish to examine the respondents.

| Participant 1               |                                                                                                                    |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------|
| Occupation                  | Sustainability Analyst                                                                                             |
| Company                     | Woolworths Holdings                                                                                                |
| Years at current employment | 30 months                                                                                                          |
| Participant 2               |                                                                                                                    |
| Occupation                  | Marketing executive                                                                                                |
| Company                     | Vodacom                                                                                                            |
| Years at current employment | 30 months                                                                                                          |
| Previous employment         | Woolworths: Senior operations manager; AVI Spits: Marketing executive; Field marketing national operations manager |
| Participant 3               |                                                                                                                    |
| Occupation                  | General manager, retail operations, clothing division                                                              |
| Company                     | Pick n Pay                                                                                                         |
| Years at current employment |                                                                                                                    |
| Participant 4               |                                                                                                                    |
| Occupation                  | Managing Director                                                                                                  |
| Company                     | Impahla Clothing                                                                                                   |
| Years at current employment | 12                                                                                                                 |

Table 6: Demographic profile of respondents

## 4. PRESENTATION OF RESULTS

### Results pertaining to proposition 1

The aim of this research was to examine the integrated annual reports of companies within the retail clothing industry of South Africa and to examine the necessary qualitative/quantitative data that pertains to proposition 1. This data will be discussed in detail in chapter 6 with regard to what the literature says. It is hoped that the data found and analysed will lend to the validity of proposition 1.

| <b>Woolworths Holdings</b>                   |                                                 |                 |                 |                 |
|----------------------------------------------|-------------------------------------------------|-----------------|-----------------|-----------------|
|                                              | 2011                                            | 2012            | 2013            | 2014            |
| Total number of people employed              | 23304                                           | 25693           | 23538           | 28368           |
| CSI Spend                                    | R370 000 000                                    | R438 000 000    | R500 100 000    | R518 000 000    |
| Investment in people, learning & development | R58 200 000                                     | R75 100 000     | R99 800 000     | R110 000 000    |
| B-BBEE rating                                | 4                                               | 4               | 3               | 3               |
| Share price (closing)                        | R26,73                                          | R34,04          | R33,79          | R36,73          |
| Work-related accidents                       | NA                                              | 778             | 682             | 735             |
| Market Capitalisation                        | R24 580 000 000                                 | R42 095 000 000 | R54 275 000 000 | R65 550 000 000 |
| <b>Pick n Pay Group</b>                      |                                                 |                 |                 |                 |
|                                              | 2011                                            | 2012            | 2013            | 2014            |
| Total number of people, employed             | 49000                                           | 42400           | 47900           | 49300           |
| CSI Spend                                    | R54 400 000                                     | NA *            | R40 928 934,80  | R47 300 000     |
| Investment in people learning & development  | R71 800 000                                     | R80 200 000     | R89 900 000     | R92 000 000     |
| B-BBEE rating                                | 8                                               | 8               | 6               | 4               |
| Share price (closing)                        | R20,07                                          | R18,33          | R18,94          | R20,55          |
| Work-related accidents                       | No measurable figures have been made available. |                 |                 |                 |
| Market Capitalisation                        | R19 581 900 000                                 | R9 664 500 000  | R9 986 100 000  | R10 835 000 000 |
| <b>Impahla Clothing</b>                      |                                                 |                 |                 |                 |
|                                              | 2011                                            | 2012            | 2013            | 2014            |
| Total number of people, employed             | 192                                             | 234             | 405             | 452             |
| CSI Spend                                    | Not reported                                    |                 |                 |                 |
| Investment in people learning & development  | Not available                                   | R56 000         | R119 786        | R53 972         |
| B-BBEE rating                                | Not available                                   | Not measured    | 7               | Non-compliant   |
| Share price (closing)                        | Not applicable                                  |                 |                 |                 |
| Work-related accidents                       | 45                                              | 50              | 45              | 207             |
| Market Capitalisation                        | Not applicable                                  |                 |                 |                 |

- The data was not made available in the report.

| <b>Mr. Price Group</b>                       |                                                                                         |                 |                 |                 |
|----------------------------------------------|-----------------------------------------------------------------------------------------|-----------------|-----------------|-----------------|
|                                              | 2011                                                                                    | 2012            | 2013            | 2014            |
| Total number of people employed              | 17887                                                                                   | 17894           | 19384           | 18104           |
| CSI Spend                                    | R11 400 000                                                                             | R13 000 000     | R16 700 000     | R18 800 000     |
| Investment in people, learning & development | R9 900 000                                                                              | R25 100 000     | R30 800 000     | R33 800 000     |
| B-BBEE rating                                | 6                                                                                       | 6               | 6               | 5               |
| Share price (closing)                        | R63,38                                                                                  | R94,34          | R116,99         | R156,01         |
| Work-related accidents                       | 70                                                                                      | 95              | 84              | 75              |
| Market Capitalisation                        | R15 744 000 000                                                                         | R23 561 000 000 | R29 400 000 000 | R39 000 000 000 |
| <b>The Foschini Group Limited</b>            |                                                                                         |                 |                 |                 |
|                                              | 2011                                                                                    | 2012            | 2013            | 2014            |
| Total number of people employed              | 15894                                                                                   | 16503           | 17737           | 17898           |
| CSI Spend                                    | R5 300 000                                                                              | R4 700 000      | R5 000 000      | R5 300 000      |
| Investment in people, learning & development | R100 800 000                                                                            | R114 700 000    | R110 900 000    | R117 600 000    |
| B-BBEE rating                                | 5                                                                                       | 4               | 4               | 4               |
| Share price (closing)                        | R84,65                                                                                  | R123,68         | R112,80         | R107,15         |
| Work-related accidents                       | 408                                                                                     | 431             | 306             | 330             |
| Market Capitalisation                        | R20 480 800 000                                                                         | R29 744 800 000 | R25 774 600 000 | R23 787 800 000 |
| <b>Rex Truform Clothing Group Limited</b>    |                                                                                         |                 |                 |                 |
|                                              | 2011                                                                                    | 2012            | 2013            | 2014            |
| Total number of people employed              | 633                                                                                     | 643             | 589             | 585             |
| CSI Spend                                    | Rex Truform did not report on their CSI Spend although it is mentioned as a focus area. |                 |                 |                 |
| Investment in people, learning & development | No measurable figures have been made available.                                         |                 |                 |                 |
| B-BBEE rating                                | No measurable figures have been made available.                                         |                 |                 |                 |
| Share price (closing)                        | R10                                                                                     | R16             | R15             | R12             |
| Work-related accidents                       | Not measurable figures have been made available.                                        |                 |                 |                 |
| Market Capitalisation                        | R213 700 000                                                                            | R334 400 000    | R312 500 000    | R246 200 000    |

Table 7: Social indicators

## Results pertaining to proposition 2

The following tables and information were constructed from the annual integrated reports of Woolworths Holdings, Pick n Pay Group, Impahla Clothing, Mr. Price Group, the Foschini Group and Rex Truform Clothing. Additional and supporting information was also obtained from interviews, which were conducted by willing participants, which will be discussed in chapter 5.

### Consolidated Balance sheets

| Woolworths Holdings Limited Balance Sheet |               |                |                |                |
|-------------------------------------------|---------------|----------------|----------------|----------------|
|                                           | R'm           | R'm            | R'm            | R'm            |
|                                           | 2011          | 2012           | 2013           | 2014           |
| Current Assets                            | R4 950        | R5 034         | R5367          | R14 077        |
| Non-current assets                        | R4 115        | R5 011         | R6773          | R8192          |
| Non-current assets held for sale          | R-            | R-             | 63             | R-             |
| <b>Total assets</b>                       | <b>R9 065</b> | <b>R10 045</b> | <b>R12 203</b> | <b>R22 269</b> |
| Equity                                    | R4 093        | R4 572         | R5937          | R6952          |
| Current Liabilities                       | R3 512        | R4 296         | R4376          | R13399         |
| Non current liabilities                   | R1 460        | R1 177         | R1890          | R1918          |
| <b>Total Equity and Liabilities</b>       | <b>R9 065</b> | <b>R10 045</b> | <b>R12 203</b> | <b>R22 269</b> |

Table 8.1: Woolworths Holdings Limited Balance sheet

| Pick n Pay Group Balance Sheet      |                  |                  |                  |                  |
|-------------------------------------|------------------|------------------|------------------|------------------|
|                                     | R'm              | R'm              | R'm              | R'm              |
|                                     | 2011             | 2012             | 2013             | 2014             |
| Current Assets                      | R7 022,0         | R6 720,5         | R7 613,1         | R8 364,7         |
| Non-current assets                  | R4 078,3         | R5 097,8         | R5 408,0         | R5 739,9         |
| <b>Total assets</b>                 | <b>R11 100,3</b> | <b>R11 818,3</b> | <b>R13 021,1</b> | <b>R14 104,6</b> |
| Equity                              | R2 158,8         | R2 404,1         | R2 416,0         | R2 702,6         |
| Current Liabilities                 | R7 558,2         | R7 804,9         | R8 908,0         | R9 612,2         |
| Non current liabilities             | R1 383,3         | R1 609,3         | R1 697,1         | R1 789,8         |
| <b>Total Equity and Liabilities</b> | <b>R11 100,3</b> | <b>R11 818,3</b> | <b>R13 021,1</b> | <b>R14 104,6</b> |

Table 8.2: Pick n Pay Group Balance sheet

| Impahla Clothing Balance Sheet      |                    |                    |                    |                    |
|-------------------------------------|--------------------|--------------------|--------------------|--------------------|
|                                     | R                  | R                  | R                  | R                  |
|                                     | 2011               | 2012               | 2013               | 2014               |
| Current Assets                      | R18 825 234        | R24 837 219        | R28 246 711        | R35 028 452        |
| Non-current assets                  | R2 301 906         | R7 642 953         | R10 094 341        | R12 047 692        |
| <b>Total assets</b>                 | <b>R21 127 140</b> | <b>R32 480 172</b> | <b>R38 341 052</b> | <b>R47 076 144</b> |
| Equity                              | R3 565 345         | R6 244 414         | R11 423 423        | R13 964 141        |
| Current Liabilities                 | R16 504 949        | R23 268 926        | R23 804 382        | R31 340 351        |
| Non current liabilities             | R1 056 846         | R2 966 832         | R3 113 247         | R1 771 652         |
| <b>Total Equity and Liabilities</b> | <b>R21 127 140</b> | <b>R32 480 172</b> | <b>R38 341 052</b> | <b>R47 076 144</b> |

Table 8.3: Impahla Clothing Balance Sheet

| Mr.Price Group Balance Sheet        |                   |                   |               |               |
|-------------------------------------|-------------------|-------------------|---------------|---------------|
|                                     |                   |                   | R'm           | R'm           |
|                                     | 2011              | 2012              | 2013          | 2014          |
| Current Assets                      | R3 253 456        | R3 551 664        | R3 970        | R5 426        |
| Non-current assets                  | R607 681          | R743 404          | R927          | R1 137        |
| <b>Total assets</b>                 | <b>R3 861 137</b> | <b>R4 295 068</b> | <b>R4 897</b> | <b>R6 563</b> |
| Equity                              | R2 394 184        | R2 779 516        | R3 316        | R3 922        |
| Current Liabilities                 | R1 287 943        | R1 321 078        | R1 375        | R2 421        |
| Non current liabilities             | R179 010          | R194 474          | R206          | R220          |
| <b>Total Equity and Liabilities</b> | <b>R3 861 137</b> | <b>R4 295 068</b> | <b>R4 897</b> | <b>R6 563</b> |

Table 8.4: Mr Price Group Balance Sheet

| The Foschini Group Limited Balance Sheet   |                  |                  |                  |                  |
|--------------------------------------------|------------------|------------------|------------------|------------------|
|                                            | R'm              | R'm              | R'm              | R'm              |
|                                            | 2011             | 2012             | 2013             | 2014             |
| Current Assets                             | R8 413           | R10 050,5        | R11 790,9        | R9 351,2         |
| Non-current assets                         | R2 289,5         | R2 805,9         | R3 503,5         | R2 120,5         |
| assets associated with disposal group      | -                | -                | -                | R5 631,5         |
| <b>Total assets</b>                        | <b>R10 702,5</b> | <b>R12 856,4</b> | <b>R15 294,4</b> | <b>R17 103,2</b> |
| Equity                                     | R5 948,5         | R6 864,2         | R7 749,3         | R8 089,9         |
| Non-current Liabilities                    | R1 288,4         | R2 747,3         | R3 050,6         | R2 016           |
| Current Liabilities                        | R3 465,6         | R3 244,9         | R4 494,5         | R3 296,1         |
| Liabilities associated with disposal group | -                | -                | -                | R3 701,2         |
| <b>Total Equity and Liabilities</b>        | <b>R10 702,5</b> | <b>R12 856,4</b> | <b>R15 294,4</b> | <b>R17 103,2</b> |

Table 8.5: The Foschini Group Limited Balance Sheet

| Rex Truform Clothing Group Limited Balance Sheet |                 |                 |                 |                 |
|--------------------------------------------------|-----------------|-----------------|-----------------|-----------------|
|                                                  | R'000           | R'000           | R'000           | R'000           |
|                                                  | 2011            | 2012            | 2013            | 2014            |
| Current Assets                                   | R243 827        | R238 617        | R203 416        | R151 717        |
| Non-current assets                               | R81 331         | R90 263         | R114 458        | R142 159        |
| <b>Total assets</b>                              | <b>R325 158</b> | <b>R328 880</b> | <b>R317 874</b> | <b>R293 876</b> |
| Equity                                           | R268 113        | R281 538        | R259 753        | R237 313        |
| Non-current Liabilities                          | R13 575         | R14 961         | R15 508         | R15 110         |
| Current Liabilities                              | R43 470         | R32 381         | R42 613         | R41 453         |
| <b>Total Equity and Liabilities</b>              | <b>R325 158</b> | <b>R328 880</b> | <b>R317 874</b> | <b>R293 876</b> |

Table 8.6: Rex Truform Clothing Group Limited Balance Sheet

Tables 8.1, 8.2, 8.3, 8.4, 8.5 and 8.6 summarise the financial balance sheets of Woolworths Holdings Limited, the Pick n Pay Group, Impahla Clothing company, Mr. Price Group, the Foschini Group Limited as well as Rex Truform Clothing. These results have been abridged and come from the integrated reports from 2011 until 2014.

## Consolidated Income statements

| Woolworths Holdings Limited Income statement   |                |                |                |                |
|------------------------------------------------|----------------|----------------|----------------|----------------|
|                                                | R'm            | R'm            | R'm            | R'm            |
|                                                | 2011           | 2012           | 2013           | 2014           |
| <b>Revenue</b>                                 | <b>R25 841</b> | <b>R28 813</b> | <b>R35 399</b> | <b>R39 944</b> |
| <b>Turnover</b>                                | <b>R25 582</b> | <b>R28 604</b> | <b>R35 227</b> | <b>R39 707</b> |
| <b>Cost of sales</b>                           | <b>R16 683</b> | <b>R18 419</b> | <b>R21 674</b> | <b>R24 209</b> |
| <b>Gross profit</b>                            | <b>R8 899</b>  | <b>R10 185</b> | <b>R13 553</b> | <b>R15 498</b> |
| Other revenue                                  | R127           | R127           | R115           | R125           |
| Expenses                                       | R6 904         | R7 625         | R10 199        | R11 680        |
| <b>Operating profit</b>                        | <b>R2 122</b>  | <b>R2 687</b>  | <b>R3 469</b>  | <b>R3 943</b>  |
| Investment income                              | R132           | R82            | R57            | R112           |
| Finance costs                                  | R84            | R38            | R68            | R136           |
| <b>Profit before tax</b>                       | <b>R2 306</b>  | <b>R2 870</b>  | <b>R3 647</b>  | <b>R4 104</b>  |
| Tax                                            | R659           | R811           | R1 009         | R1 114         |
| Profit for the year                            | R1 647         | R2 059         | R2 638         | R2 990         |
| <b>Other comprehensive income for the year</b> | <b>R20</b>     | <b>R138</b>    | <b>R202</b>    | <b>R(11)</b>   |
| <b>Total comprehensive income for the year</b> | <b>R1 667</b>  | <b>R2 197</b>  | <b>R2 840</b>  | <b>R2 979</b>  |

Table 9.1: Woolworths Holdings limited income statement

| Pick n Pay Group Income statement                     |                   |                   |                   |                   |
|-------------------------------------------------------|-------------------|-------------------|-------------------|-------------------|
|                                                       | R'm               | R'm               | R'm               | R'm               |
|                                                       | 2011              | 2012              | 2013              | 2014              |
| <b>Continuing Operations Revenue</b>                  | <b>R52 216,7</b>  | <b>R55 634,4</b>  | <b>R59 658,5</b>  | <b>R63 661,9</b>  |
| <b>Turnover</b>                                       | <b>R51 945,8</b>  | <b>R55 330,5</b>  | <b>R59 271,3</b>  | <b>R63 117,0</b>  |
| <b>Cost of sales</b>                                  | <b>-R42 859,6</b> | <b>-R45 350,0</b> | <b>-R48 761,4</b> | <b>-R52 077,1</b> |
| <b>Gross profit</b>                                   | <b>R9 086,2</b>   | <b>R9 980,5</b>   | <b>R10 509,9</b>  | <b>R11 039,9</b>  |
| Other revenue                                         | R231,4            | R264,4            | R344,4            | R500,6            |
| <b>Expenses</b>                                       | <b>-R7 899,9</b>  | <b>-R8 969,8</b>  | <b>-R10 001,9</b> | <b>-R10 530,2</b> |
| Merchandising and administration                      | -R822,6           | -R859,8           | -R1 185,5         | -R1 009,5         |
| <b>Operating Profit/Loss</b>                          | <b>R1 356,1</b>   | <b>R1 170,0</b>   | <b>R808,9</b>     | <b>R833,1</b>     |
|                                                       | -                 | -                 |                   |                   |
| <b>Profit for the year before Tax</b>                 | <b>R1 356,1</b>   | <b>R1 170,0</b>   | <b>R808,9</b>     | <b>R833,1</b>     |
| Tax                                                   | -R447,8           | -R407,7           | -R258,3           | -R249,4           |
| <b>Profit for the year from continuing operations</b> | <b>R908,3</b>     | <b>R762,3</b>     | <b>R550,6</b>     | <b>R583,7</b>     |
| <b>Total comprehensive income for the year</b>        | <b>R770,3</b>     | <b>R755,2</b>     | <b>R557,1</b>     | <b>R647,2</b>     |

Table 9.2: Pick n Pay Group income statement

| Impahla Clothing Income statement                    |                   |                    |                    |                    |
|------------------------------------------------------|-------------------|--------------------|--------------------|--------------------|
|                                                      | R                 | R                  | R                  | R                  |
|                                                      | 2011              | 2012               | 2013               | 2014               |
| Revenue                                              | R29 120 779       | R38 023 500        | R60 757 597        | R75 815 128        |
| Cost of sales                                        | R21 036 677       | R25 133 472        | R39 659 609        | R(53 072502)       |
| Gross profit                                         | <b>R8 084 102</b> | <b>R12 890 028</b> | <b>R21 097 988</b> | <b>R22 742 626</b> |
| Operating costs                                      | R(7 755322)       | R(9 232419)        | R(17 000954)       | R(26 501906)       |
| <b>Operating profit/loss</b>                         | <b>R328 780</b>   | <b>R3 657 609</b>  | <b>R5 337 733</b>  | <b>R1 331 313</b>  |
| Investment income                                    | R7 481            | R55 507            | R110 231           | R40 404            |
| Profit with sales of assets                          | R2 000            | R37 202            | -                  |                    |
| IDC PI Grant                                         | R1 280 021        | -                  | -                  |                    |
| Finance costs                                        | R(11 676)         | R(29 389)          | R(228 226)         | R(331 160)         |
| <b>Profit/loss for the year before tax</b>           | <b>R1 606 606</b> | <b>R3 720 929</b>  | <b>R5 219 738</b>  | <b>R1 040 557</b>  |
| Tax                                                  | R449 850          | R1 041 860         | R(873 671)         | -                  |
| <b>Net profit/(loss) for the year after taxation</b> | <b>R1 156 756</b> | <b>R2 679 069</b>  | <b>R4 346 067</b>  | <b>1 040 557</b>   |

Table 9.3: Impahla Clothing income statement

| Mr.Price Income statement                  |                    |                    |                |                |
|--------------------------------------------|--------------------|--------------------|----------------|----------------|
|                                            |                    |                    | R'm            | R'm            |
|                                            | 2011               | 2012               | 2013           | 2014           |
| Revenue                                    | <b>R10 973 327</b> | <b>R12 122 180</b> | <b>R13 720</b> | <b>R15 892</b> |
| Retail sales and other income              | R10 913 094        | R12 062 447        | R13 664        | R15 829        |
| Retail sales                               | R10 673 364        | R11 766 765        | R13 266        | R15 227        |
| Costs and expenses                         | R9 479 326         | R10 320 624        | R11 592        | R13 292        |
| Cost of sales                              | R6 201 640         | R6 843 063         | R7 664         | R8 907         |
| <b>Operating Profit</b>                    | <b>R1 433 768</b>  | <b>R1 741 823</b>  | <b>R2 072</b>  | <b>R2 537</b>  |
| Profit before taxation                     | R1 484 204         | R1 786 215         | R2 128         | R2 600         |
| Taxation                                   | R473 950           | R569 114           | R591           | R733           |
| <b>Profit attributable to shareholders</b> | <b>R1 010 254</b>  | <b>R1 217 101</b>  | <b>R1 537</b>  | <b>R1 867</b>  |

Table 9.4: Mr. Price income statement

| The Foschini Group Limited Income statement          |                  |                  |                 |                  |
|------------------------------------------------------|------------------|------------------|-----------------|------------------|
|                                                      | R'm              | R'm              | R'm             | R'm              |
|                                                      | 2011             | 2012             | 2013            | 2014             |
| <b>Revenue</b>                                       | <b>R12 370,6</b> | <b>R14 530,8</b> | <b>R14 757</b>  | <b>R16 362,9</b> |
| Retail turnover                                      | R9 936,5         | R11 630,5        | R12 896,4       | R14 159          |
| Cost of turnover                                     | R(5 768,1)       | R(6 750,1)       | R(6 906,1)      | R(7 579,4)       |
| <b>Gross Profit</b>                                  | <b>R4 168,4</b>  | <b>R4 880,4</b>  | <b>R5 990,3</b> | <b>R6 579,6</b>  |
| Trading expenses                                     | (4 301,3)        | (4 994,2)        | R(5 443,6)      | R(6 246,6)       |
| <b>Operating profit/loss</b>                         | <b>R2 301,2</b>  | <b>R2 786,5</b>  | <b>R2 407,3</b> | <b>R2 536,9</b>  |
| Profit/loss for the year before tax                  | R2 051,1         | R2 501,6         | R2 298,9        | R2 375,1         |
| Tax                                                  | R(662,3)         | R(809,8)         | R(669,1)        | R(691,5)         |
| <b>Net profit/(loss) for the year after taxation</b> | <b>R1 388,8</b>  | <b>R1 691,8</b>  | <b>R1 926,6</b> | <b>R2 004,7</b>  |

Table 9.5: The Foschini Group limited income statement

| Rex Truform Clothing Group Income statement          |                 |                 |                  |                  |
|------------------------------------------------------|-----------------|-----------------|------------------|------------------|
|                                                      | R'000           | R'000           | R'000            | R'000            |
|                                                      | 2011            | 2012            | 2013             | 2014             |
| <b>Revenue</b>                                       | <b>R518 796</b> | <b>R541 676</b> | <b>R483 957</b>  | <b>R501 207</b>  |
| Retail turnover                                      | R508 078        | R530 593        | R474 438         | R492 079         |
| Cost of turnover                                     | R(221 987)      | R(246 182)      | R(231 176)       | R(249 774)       |
| <b>Gross Profit</b>                                  | <b>R286 091</b> | <b>R284 411</b> | <b>R243 262</b>  | <b>R242 305</b>  |
| Other Income                                         | R1 908          | R2 937          | R3 079           | R5 585           |
| Trading expenses                                     | R(243 596)      | R(260 731)      | R(265 479)       | R(265 192)       |
| <b>Operating profit/loss</b>                         | <b>R44 403</b>  | <b>R26 617</b>  | <b>R(19 138)</b> | <b>R(17 302)</b> |
| Profit/loss for the year before tax                  | R52 911         | R34 491         | R(12 887)        | R(13 960)        |
| Tax                                                  | R(16 116)       | R(10 771)       | R3 389           | R3 929           |
| <b>Net profit/(loss) for the year after taxation</b> | <b>R39 930</b>  | <b>R23 780</b>  | <b>R(9 498)</b>  | <b>R(10 031)</b> |

Table 9.6: Rex Truform Clothing Group income statement

Table 3.1, 3.2 as well as 3.3 refer to the Income statements of Woolworths Holdings Limited, the Pick n Pay Group, Impahla Clothing company, Mr. Price Group, The Foschini Group Limited as well as Rex Truform Clothing. As in the case of the Balance sheets, these statements have also been abridged and were taken from the companies integrated reports from 2011 up to and including 2014.

## Financial Indicators

| <b>WoolWorths Holdings</b>                |      |      |      |      |
|-------------------------------------------|------|------|------|------|
|                                           | 2011 | 2012 | 2013 | 2014 |
| Profit Margin                             | 34%  | 35%  | 38%  | 39%  |
| Operating Margin                          | 8%   | 9%   | 10%  | 10%  |
| E.A.T Margin                              | 6%   | 8%   | 8%   | 7%   |
| Debt to Equity                            | 1,21 | 1,20 | 1,06 | 2,20 |
| Current Ratio                             | 1,41 | 1,17 | 1,23 | 1,05 |
| <b>Pick n Pay Group</b>                   |      |      |      |      |
|                                           | 2011 | 2012 | 2013 | 2014 |
| Profit Margin                             | 17%  | 18%  | 18%  | 17%  |
| Operating Margin                          | 3%   | 2%   | 1%   | 1%   |
| E.A.T Margin                              | 1%   | 1%   | 1%   | 1%   |
| Debt to Equity                            | 4,14 | 3,92 | 4,39 | 4,22 |
| Current Ratio                             | 0,93 | 0,86 | 0,85 | 0,87 |
| <b>Impahla Clothing</b>                   |      |      |      |      |
|                                           | 2011 | 2012 | 2013 | 2014 |
| Profit Margin                             | 28%  | 34%  | 35%  | 30%  |
| Operating Margin                          | 1%   | 10%  | 9%   | 2%   |
| E.A.T Margin                              | 4%   | 7%   | 7%   | 1%   |
| Debt to Equity                            | 4,93 | 4,20 | 2,36 | 2,37 |
| Current Ratio                             | 1,14 | 1,07 | 1,19 | 1,12 |
| <b>Mr. Price Group</b>                    |      |      |      |      |
|                                           | 2011 | 2012 | 2013 | 2014 |
| Profit Margin                             | 43%  | 44%  | 44%  | 44%  |
| Operating Margin                          | 13%  | 14%  | 15%  | 16%  |
| E.A.T Margin                              | 9%   | 10%  | 11%  | 12%  |
| Debt to Equity                            | 0,61 | 0,55 | 0,48 | 0,67 |
| Current Ratio                             | 2,53 | 2,69 | 2,89 | 2,24 |
| <b>The Foschini Group Limited</b>         |      |      |      |      |
|                                           | 2011 | 2012 | 2013 | 2014 |
| Profit Margin                             | 34%  | 34%  | 41%  | 40%  |
| Operating Margin                          | 19%  | 19%  | 16%  | 16%  |
| E.A.T Margin                              | 11%  | 12%  | 13%  | 12%  |
| Debt to Equity                            | 0,80 | 0,87 | 0,97 | 1,11 |
| Current Ratio                             | 2,43 | 3,10 | 2,62 | 2,84 |
| <b>Rex Truform Clothing Group Limited</b> |      |      |      |      |
|                                           | 2011 | 2012 | 2013 | 2014 |
| Profit Margin                             | 55%  | 53%  | 50%  | 48%  |
| Operating Margin                          | 8,6% | 5%   | -4%  | -3%  |
| E.A.T Margin                              | 8%   | 4%   | -2%  | -2%  |
| Debt to Equity                            | 0,21 | 0,17 | 0,22 | 0,24 |
| Current Ratio                             | 5,61 | 7,37 | 4,77 | 3,66 |

Table 10: Financial indicators

Table 10 provides the financial ratios chosen to measure the companies financial results. These figures have been listed using a trend analysis so as to compare the financial ratios over time in each given company individually so as to try and establish a trend. These results will be discussed in the following chapter.

#### Environmental Indicators

| Woolworths Holdings                                             |                                                                                                                                    |            |         |           |
|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|------------|---------|-----------|
|                                                                 | 2011                                                                                                                               | 2012       | 2013    | 2014      |
| Carbon footprint (total tons of CO2)                            | 452 996.73                                                                                                                         | 411 522.35 | 398 568 | 444 249.8 |
| Water (reduction in relative consumption from benchmark stores) | -5%                                                                                                                                | 1%         | 20%     | 34%       |
| Pick n Pay Group                                                |                                                                                                                                    |            |         |           |
|                                                                 | 2011                                                                                                                               | 2012       | 2013    | 2014      |
| Carbon footprint (total tons of CO2)                            | 602782                                                                                                                             | 607156     | 577289  | 582518    |
| Kilolitres of water consumed per sqm                            | NA                                                                                                                                 | NA         | 1.11    | 1.19      |
| Impahla Clothing                                                |                                                                                                                                    |            |         |           |
|                                                                 | 2011                                                                                                                               | 2012       | 2013    | 2014      |
| Carbon footprint (total tons of CO2)                            | 237                                                                                                                                | 232        | 550     | 759       |
| Water efficiency per employee (Litre)                           | NA                                                                                                                                 | 3,62       | 3,12    | 3         |
| Mr. Price Group                                                 |                                                                                                                                    |            |         |           |
|                                                                 | 2011                                                                                                                               | 2012       | 2013    | 2014      |
| Carbon footprint (total tons of CO2)                            | 147 592                                                                                                                            | 141 485    | 210 786 | 157639    |
| Water consumption (kilolitres)                                  | Not reported                                                                                                                       |            |         |           |
| The Foschini Group Limited                                      |                                                                                                                                    |            |         |           |
|                                                                 | 2011                                                                                                                               | 2012       | 2013    | 2014      |
| Carbon footprint (total tons of CO2)                            | 209368                                                                                                                             | 213424     | 201837  | 207332    |
| Water consumption (kilolitres)                                  | 40830                                                                                                                              | 46449      | 67302   | 76618     |
| Rex Truform Clothing Group Limited                              |                                                                                                                                    |            |         |           |
|                                                                 | 2011                                                                                                                               | 2012       | 2013    | 2014      |
| Carbon footprint (total tons of CO2)                            | It must be noted that no measurable environmental metrics have been reported in the Integrated reporting of the Rex truform Group. |            |         |           |
| Water consumption (kilolitres)                                  |                                                                                                                                    |            |         |           |

Table 11: Environmental Indicators

## 5. INTERVIEW RESULTS

### Introduction

The data for this research report was collected from interviews with willing and relevant participants who work/worked in or have relevant experience in the clothing retail sector of South Africa. The aim of the interviews was to try and establish a trend as to how sustainability is treated in relation to the retail clothing sector; to determine what might some of the approaches be to sustainability in the broader sense; and to establish companies might be doing to incorporate sustainability into their strategic plans. The aim of the interviews was to find supporting information to the analysis of the integrated reports that allows further insight into sustainable supply chain management. It was hoped that there would be a greater portion of respondents but many companies and organisations were not willing to discuss or failed to respond to interview requests.

### Results of Interviews

The results of the interviews have been listed separately as the information gathered pertains both to proposition one and as well as proposition two.

### Woolworths Holdings

Two interviews were conducted with regards to this organisation. The first interview was with a sustainability analyst from Woolworths Holdings. The following was discussed:

Woolworths Holdings defined sustainability within their company. The participant informed me that sustainability is a company value of Woolworths Holdings and their sustainability initiative is known as the Good Business Journey that forms a basis of how they conduct their business. This initiative is governed by the universal definition of sustainability that is to do well for the environment that is economically mature and the social environment. The good business journey has key focus areas on which they are able to measure and meet their objectives. These objectives include sustainable development, ethical sourcing, waste and water management, health and wellness, sustainable farming as well as energy and climate change. There have been challenges in enabling these initiatives but the participant informed me that there is a sustainability and ethics committee that forms part of the board of directors. This structure has aided sustainability as it allows sustainability to be integrated across the entire business model. Woolworths Holdings suppliers are governed by the Woolworths Holdings' code of business principals known as the ETI base code, which complies with the International Labour Organisation (ILO) standard. In terms of risk

mitigation along the supply chain, the Supplier code of business principles was drafted because of potential risks such as environmental and/or social risks. As a result suppliers are encouraged to have preventative measures in place in order to counter such risks. Suppliers are also audited for compliance against this code. Should there be no compliance and no pledge to improve compliance, Woolworths terminates business with the said supplier. Woolworths Holdings have invested in their supply chain through initiatives such as farming for the future where Woolworths Holding inject a certain amount of funds, as well as other resources, into their suppliers to ensure that they do not fall below the code of business principals. In the discussion, the participant also spoke about the initiative as presented in the literature review with regard to Woolworths Holdings collaborating on National Business Initiative. This project took place in South Africa, where Woolworths engaged 150 of its suppliers to participate in energy audits, which were fully paid for by this NBI/DFID program. The result of this energy audit included cost saving opportunities, one of which would be a R556 000 investment that would translate to R14 million in savings over the next ten years for the organisation (Woolworths, 2014). The WWF also works with Woolworth Holdings to assist in forming some decisions with regard to supply chain management strategies and practices. Woolworths Holdings also offer Enterprise development, which is part of their transformation initiative. Woolworths Holdings identify suppliers that fall in line with their values and principals and then provide resources and skills to bring them up to speed and into the Woolworths Holdings supply chain. By collaborating with their suppliers, Woolworth Holdings has been able to enforce a certain level of quality and standards in the products they sell. Woolworths identifies many risks associated with the retail clothing sector. The participant states that with 'the sourcing of cotton and some other raw materials, there is a benefit in driving sustainable supply chains. The only way we can ensure that we survive in this business is by ensuring that we practice "duty of care" towards the environment'. This is not only limited to cotton but also the other inputs as well, such as water, land and human resources. Investing in local suppliers is also beneficial in the end, especially so in South Africa because our textiles industry has been dwindling in recent years' (Mabunda, 2015). She goes on to also mention animal welfare within the clothing space and how this has become an increasingly important issue for Woolworths Holdings and therefore, this forms part of their sustainable sourcing strategy for the clothing and general merchandise part of their business. Woolworths Holdings believe that it is beneficial to invest in sustainable supply chain management practices as they have noticed that consumers are becoming more environmentally aware and this in turn has influenced their purchasing power. The participant states, ' There is only one planet that is given to us as

well as the resources that we have from this planet and we need to find ways of managing these resources as for example, the water we had 10 000 years ago is the same water we have now' (Mabunda 2015).

The second interview concerning Woolworths Holding was conducted with Participant 2, who previously worked as a senior operations manager at Woolworths Holdings. I conducted the same interview as with participant 1 to see if there was a correlation between the two different interviews. Participant two defined sustainability within Woolworths holding to consist of two different legs. One being sustainability for the environment which falls under the good business journey of Woolworths Holdings and then the second leg of sustainability was that of business sustainability which deals with concepts such as brand sustainability, profitability and longevity in the market. Participant 2 stated that the, 'Good business journey was all about how Woolworths can contribute positively to the environment as well as an underlying factor as how Woolworths can initiate certain CSI foundation projects that lend themselves to teaching South Africans about a sustainable future'. An example of this was the development of agricultural farms that were sponsored by Woolworths that used different technologies that would enable the farms to become more environmentally friendly. From a stance of business sustainability, Nadia spoke of the Woolworths brand and how brand sustainability was achieved through making sure the products were sustainable for South Africa as well as being authentically South African. The CSI initiatives and in particular the Good Business Journey was, in participant 2's opinion, the most difficult endeavor that Woolworths Holdings had ever undertaken because they were one of the first companies that had produced a notion of protecting the environment. It was also a huge investment of tools, technology and infrastructure; there was furthermore a huge investment into training and teaching to ensure that these investments would become sustainable. Participant 2 states, 'it was never the case for Woolworths to start the Good Business Journey for public relations and publicity reasons so much as it was a case of maintaining what our brand stands for in quality and value while also ensuring that 10 years from now, our supply chain is still productive, optimal and the same quality is still available'. Procurement was a main role within the Good Business Journey and its function was to identify a criterion that it could measure suppliers by and to do an evaluation to identify certain risk areas that went into a strategic think tank from which Woolworths Holdings would identify what their involvement needed to be, what the cost of that involvement would be, what resources their involvement would require and what the risks associated with this involvement would be. During her time at Woolworths Holdings, Participant 2 said that there were only two incidents where suppliers failed to

meet the criteria in terms of a high-risk evaluation but other than these two failures an incubator system was put in place to manage potential risks with a building capacity to overcome those risks. Nadia believes that there is a benefit in investing in sustainable supply chain management with regard to the triple bottom line because, she says, 'What organisations need to realise is that the little bit of investment now pays off in the future, because of sustainability being a two lever factor. The outcome is profitability in the long term but also predictable profitability in the long term because you are able to maintain your demand basis and you supply basis'. BBBEE was a major focus for Woolworths Holdings as the majority of their suppliers, particularly in the food sector, fell into that criteria. Participant 2 also believes that retail clothing supply chains have much to benefit from by improving the level of sustainability employed along their supply chain and she gives examples of companies such as Zara, Diesel and Levi Strauss who have benefitted through the improvement of their resources. Levi Strauss in particular implemented a save water campaign in their denim washing process and this helped to save gallons upon gallons of water in all the manufacturing plants across the world. In conclusion, participant 2 states, "the future is dependent on the existence of the current, if we keep breaking down the current we have no future".

#### Pick n Pay Group

One interview was conducted about this organisation. This interview took place with participant 3, the General Manager of retail operations, clothing division from the Pick n Pay Group.

Participant 3 first told me what his position was within the Pick n Pay Group and his job was to run the stores around the country. This involves costs, staff employment and store efficiencies such as lighting. He spoke about employment and how everything now days are about people and community. When Pick n Pay employs someone, they look whether they meet certain employment criteria such as economic employment requirements and come from the right demographic profile. Participant 3 believes that all of this forms part of the sustainability within an organisation. The Pick n Pay Group outsources their deliveries through a company by the name of City Couriers and these couriers are selected on the basis that they meet the criteria of Pick n Pay. These criteria include elements such as carbon footprint; replacement fuel policy plans in place such as biodiesel replacement policies, as well as the age of the fleet they use. With regard to the retail-clothing segment of Pick n Pay, they run a centralized distribution centre out of Cape Town. This is run as a cross document facility as opposed to a stock holding facility on the grounds that the clothing sector is a completely different model from that of the grocery sector. The turnaround time for

clothing is much faster than that of food. Participant 3 explained that if you bring a jersey in today, it needs to sell by tomorrow because the following day they will be bringing in a new jersey that must then be sold. This in turn means that the distribution model has to be highly efficient. The Pick n Pay Ackerman foundation was established to allow Pick n Pay to invest back into communities through supporting business initiatives, investing in education, the funding of bursaries and in particular investment in the support of previously disadvantaged people and communities. An example of where the Ackerman foundation has helped is in the Eastern Cape where a farmer who was making charcoal was only able to supply his local community. The Ackerman foundation provided funds for the farmer to grow his business as well as provided support through training. Once the business grew, the foundation provided support through the offering of professional counseling. With regard to sourcing, participant 3 spoke about how Pick n Pay provide guidelines to their suppliers but that the suppliers are also audited through the SSG (Sustainable Safety Group). These audits report on the triple bottom line and specifically, child labour and the environment in which the product is grown or manufactured as well as sourcing issues. They also audit the management processes that are in place within the supplier, e.g. what is the washing cycle concerning cotton, where does the dye come from etc.

Participant 3 states, 'We don't want to be associated with any company that is involved with child labour or organisations that use dyes that pollute rivers'. The question was posed to participant 3 as to whether Pick n Pay would help to improve the conditions or processes of suppliers that were not meeting the criteria and he informed me that they would but not for suppliers overseas. The Pick n Pay Group takes steps to ensure that the entire supply chain is monitored and audited based on strict criteria. This includes the factory and its pollutants, the shipping and logistics – maximising space utilisation to reduce carbon footprint, the distribution centre which monitors distribution drivers' loading periods and store stops are as short as possible. In short, these supply chain audits involve maximising space, improving journey time as well as turnaround time. This results in better time efficiency, lower costs, better energy efficiency, and in turn more profitability. Suppliers are also promised incentives for delivering on time such as minimal waiting. Examples of sustainable initiatives within Pick n Pay include improving LED lighting, reducing wood content, and recycled shopping bags. Energy efficiency initiatives have saved R320 million since 2008 (Pick n Pay Group, 2013). Excess clothing hangers are also collected by City couriers and taken to be recycled. The product lifecycles within Pick n Pay runs in two seasons, summer and winter, and clothing is aimed at being moved out the business in 10 to 12 weeks. Any old clothes that cannot be sold are given to the

Clothing Bank where the product is refurbished and given to small satellite businesses in disadvantaged communities where they are sold. Charities must then approach the Clothing Bank for donations where they are screened for the legitimacy of their business actions. Participant 3 explained that there is an internal audit division that is responsible for auditing every element of the Pick n Pay Groups business. They ensure that Pick n Pay follows processes and due processes as well as the health and safety of the company. Suppliers are measured on a strike rate to ensure that stock is being delivered fast and efficiently and to help mitigate against lost profits. Participant 3 also spoke about social capital investment and whether that can lead to economic returns and how he believes that you can never invest enough in people. He explained that it is hard to quantify this based purely on the individual but rather on the efficiency of the people together. He gave the example of how Pick n Pay uses a system called SAP. SAP relies heavily on data integrity and if your data integrity is not 100%, it will result in a major problem. Participant 3 states, 'Let's use a brand like KOO, if you capture something in the system with SAP and you capture it with a capital K and or a k. or a k, the system will refer to those as three separate locations'. This can lead to issues when it comes to orders being captured differently. This is an example of how training becomes such an important issue. An example of where training is important is when it comes to the job of picking. Participant 3 says the top pickers are picking at 100 cartons an hour while some only pick at 40 cartons an hour. Participant 3 says that Pick n Pay would love to go electronic but there is an issue of employment in South Africa so there is an expectation of managing technology vs. labour. In conclusion, participant 3 agrees that there is an absolute economic benefit to improving the sustainability of their supply chain but was unsure about how to substantiate that. ahe says that by looking at their latest financial results, you can see that they talk about marginal improvement purely because of supply chain efficiencies.

#### Impahla Clothing

The fourth interview conducted was with the managing director of Impahla Clothing Company, which is a South African clothing manufacturer, based out of Cape Town. Participant 4 believes that there is a benefit of investing into sustainable supply chain management practices in the long term. He states, 'In South Africa it is a lot more difficult to take control over your supply chain unless you are a dominant customer'. Participant 4 told me that what he means by that is that if a supplier is mainly reliant on you for their business i.e. 50%-60%, then you can have a massive say in terms of their policies and procedures regarding issues surrounding sustainability in particular. However, Participant 4 informed the interviewer that as a small

company in the clothing industry, there is a lot of work still to be done in South Africa, as suppliers are not interested for the most part in incorporating sustainability into their business practices. Participant 4 explained that this could be because of the vast amount of poverty in South Africa and how many suppliers just simply cannot afford the investment into sustainability. Impahla Clothing believes that through its exposure to the European market, it has learnt to deal with and incorporate many aspects of sustainability within their own business practices. At Impahla Clothing, participant 4 also informed me that they try to aspire to their own standards of sustainability and not the standards of the business environment around them. This standard has largely been a result of exposure to the international markets. Impahla Clothing has tried to maintain its competitive edge and sustainable business practices through adhering to the GRI G4 (Global Reporting Initiative) and as a result report on issues such as material use, stakeholder engagement as well as environmental protection. Impahla is committed to reducing their waste, making use of resources in a responsible manner, advocating workers' rights, as well as the advancement of the welfare of workers and their communities. Impahla believes that partnerships based on transparency, collaboration and mutual respect are essential to making their mission happen (Impahla Clothing, 2014). Impahla Clothing have set about ensuring this through their 12 key principles as set out in their code of conduct. These include:

1. Regular employment is provided
2. Workers employment is voluntary
3. Employees are over the age of 16
4. Contractors do not discriminate
5. Harassment and abuse are not tolerated
6. Freedom of association and collective bargaining are respected
7. Wages, benefits and overtime are set against the countries minimum wage at least and employees are timelessly paid
8. Employee work hours do not exceed 60 hours a week
9. Terminations and other disciplinary actions must adhere to the Code of Good Practice as contained in Schedule 8 of the Labour Relations Act 66 of 1995.
10. Terms and conditions of employment
11. The workplace is healthy and safe
12. Environmental impact is minimized in terms of human health and the environment (Impahla Clothing, 2014).

The PUMA, Adidas, NBC and Excellence in Health and Safety audit Impahla Clothing annually to check and assess Impahla Clothing and any possible concerns their employees, clients, and industry regulatory bodies might have.

Impahla Clothing's supply chain management covers five main aspects; servicing their customers, their people, managing growth, creating and sharing economic growth as well as environmental protection.

## 6. INTERPRETATION OF RESULTS

### Introduction

Chapters 4 and 5 presented all the quantifiable data taken from the annual integrated reports of Woolworths Holdings, the Pick n Pay Group, Impahla Clothing, the Mr. Price Group, the Foschini Group as well as Rex Truform Clothing. Supporting interviews were also conducted with Woolworths Holdings limited, the Pick n Pay group as well as Impahla Clothing Company. The aim of this chapter is to demonstrate if the research is sufficient to answer the research question, 'To determine if there is a relationship between sustainability along the supply chain and a firm's long term economic success within the retail clothing industry of South Africa'. Chapter 5 will also address the propositions, namely:

Proposition 1: Firms within the retail clothing industry of South Africa that improve social sustainability and supplier efficiencies along their supply chains leads to improved economic sustainability.

Proposition 2: Firms that partake and implement Sustainable Supply Chain Management will achieve higher economic performance in the long term than those firms that pursue only one or two of the three components of the triple bottom line.

Chapter 6 also discusses the relationship between the research findings and the literature review to establish if the results are either supported by the literature or if the literature is lacking and requires further development. As discussed in the research methodology, one of the limitations of the study was that there might be participants who are unwilling to take part in the study and this could result in a distorted examination, as the study would no longer be applicable across the retail clothing industry of South Africa. Unfortunately, it was difficult to obtain interviews, and it is apparent that only the companies with appropriate sustainability practices and supply chains were prepared to be interviewed. This implies that the other companies in the sector are not applying sufficient effort to the sustainability and acceptability of their supply chains. As a result, this research paper is not so much as industry analysis as it is a case study analysis of the companies that made their results available and the study only takes into account these results. As stated in the research methodology, 'Case study research investigates a contemporary phenomenon in its real life context' (Yin, 2003). This research will also take an explanatory approach to determine a cause-effect relationship.

In short, the aim of this discussion is to examine the literature review and the results of the research to test the validity of research statement, “To determine if there is a relationship between sustainability along the supply chain and a firm’s long term economic success within the retail clothing industry of South Africa”.

### Results pertaining to proposition 1

Proposition 1: Firms within the retail clothing industry of South Africa that improve social sustainability and supplier efficiencies along their supply chains leads to improved economic sustainability.

The aim of this proposition was to test and establish whether there was evidence or an indication between the improvement of social sustainability and associated supplier efficiencies along a company’s supply chain and whether this would improve the economic sustainability of the firm. The study made use of information provided within the integrated reports of the sample as well as any relevant information that was found through the conducted interviews. The study proposes certain measures of social sustainability to be incorporated into the research and results. Note that these measures would differ depending on the market that the company operates within as well as its geographic location and the particular settings of the organisation. For this study, the following Social indicators were selected:

1. Total number of people employed
2. CSI Spend
3. Investment in people, learning and development
4. BB-BEE rating
5. Work related accidents
6. Share price (Closing)
7. Market Capitalisation

These indicators can be found on table 7 in this study. Hutchins & Sutherland, 2008, claim that until recently the pillar associated with the social dimension of sustainability has not been well defined. There is little literature on the matter and when it has been discussed or analysed, the talking points always surround health and safety issues or legislative issues and neglects crucial points such as culture or the ethical impacts of management decisions. As such the social indicators were examined and the selection was based off of characteristics of Social focus as identified by Ahi & Searcy, 2015 as well as the Social lifecycle assessment as presented by Hutchins & Sutherland, 2008. The social focus of the GRI reporting guidelines were also examined when determining which social sustainability indicators would be

selected. Share price and Market capitalisation were selected because the researcher wished to examine the relationship of the financial aspect and social aspect of the social sustainability pillar. The indicators were also chosen as the researcher wished to use data that could be compared to some of the drivers and barriers towards sustainability within an organisation as presented by Giunipero, Hooker & Denslow, 2012. These barriers included financial benefits as well as competitive advantages over competition and government regulations. Research has also identified pressure from stakeholders on organisations to report on social issues such as human rights, labour practices and product responsibility (Hahn & Kühnen, 2013; Giunipero, Hooker, & Denslow, 2012). Studies have shown a link that CSR does provide a benefit to organisations. An example of this would be Waddock & Graves, 1997, who found that corporate social performance and profitability often display a positive relationship.

#### Number of people employed

| Total number of employees |       |       |       |       |
|---------------------------|-------|-------|-------|-------|
|                           | 2011  | 2012  | 2013  | 2014  |
| <b>Woolworths</b>         | 23304 | 25693 | 23538 | 28368 |
| <b>PicknPay</b>           | 49000 | 42400 | 47900 | 49300 |
| <b>Impahla Clothing</b>   | 192   | 234   | 405   | 452   |
| <b>Mr Price</b>           | 17887 | 17894 | 19384 | 18104 |
| <b>Foschini's</b>         | 15894 | 16503 | 17737 | 17898 |
| <b>Rex Truform</b>        | 633   | 643   | 589   | 585   |

On examination of these numbers, it can initially be stated that most of the companies within this sample have increased their employee count from the period of 2011 to 2014. However, within that period, Pick n Pay reduced its employee count substantially in 2012 and Mr. Price lost around 1000 employees in 2014. Rex Truform is the only company that has seen a decline in employees in the period of 2011 to 2014.

## CSI Spend

| CSI Spend               |                                                                                                                                                                                                                                   |              |              |              |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|--------------|
|                         | 2011                                                                                                                                                                                                                              | 2012         | 2013         | 2014         |
|                         | <i>R 000</i>                                                                                                                                                                                                                      | <i>R 000</i> | <i>R 000</i> | <i>R 000</i> |
| <b>Woolworths</b>       | R370 000                                                                                                                                                                                                                          | R438 000     | R500 100     | R518 000     |
| <b>PicknPay</b>         | R54 400                                                                                                                                                                                                                           | NA           | R40 929      | R47 300      |
| <b>Impahla Clothing</b> | Not reported                                                                                                                                                                                                                      |              |              |              |
| <b>Mr Price</b>         | R11 400                                                                                                                                                                                                                           | R13 000      | R16 700      | R18 800      |
| <b>Foschini's</b>       | R5 300                                                                                                                                                                                                                            | R4 700       | R5 000       | R5 300       |
| <b>Rex Truform</b>      | Rex Truform did not report on their CSI Spend although it is mentioned as a focus area. This conflicts with one of the aims of sustainable reporting which includes corporate social initiative spend disclosures and investment. |              |              |              |

Ahi & Searcy, 2015, propose a sustainable supply chain management metric that falls under the social pillar of sustainability. This is the Volunteer focus (Ahi & Searcy, 2015). The example of the metrics they give is participation in volunteer programs. For this study, this will equate to Corporate Social Initiatives and their individual CSI spend in order to help quantify the data. Based on the results presented in the table, it can be concluded that only Woolworths Holdings and Mr. Price have increased their CSI spend year-end on year-end. In an interview conducted with a participant from Woolworths, they said that a large part of their CSI spend and sustainability focus was achieved through the Good Business Journey. This initiative is governed by the universal definition of sustainability that is to do well for the environment that is economically mature and the social environment. The participant also said that the reason that the Good Business Journey was so successful is that it is implemented across the entire business model. This evidence supports the drivers of sustainability such as competitive advantage as well as incorporating top management (Giunipero, Hooker, & Denslow, 2012). Upon examination that Rex Truform as well as Impahla clothing did not report on their CSI Spend, it supports the notion of corporate size and financial performance as presented by (Hahn & Kühnen, 2013). They state, 'Smaller companies however might have higher marginal costs of disclosure'.

## Investment into people, learning and development

| Investment into people, training and development |                                                 |          |          |          |
|--------------------------------------------------|-------------------------------------------------|----------|----------|----------|
|                                                  | 2011                                            | 2012     | 2013     | 2014     |
|                                                  | R'000                                           | R'000    | R'000    | R'000    |
| <b>Woolworths</b>                                | R58 200                                         | R75 100  | R99 800  | R110 000 |
| <b>PicknPay</b>                                  | R71 800                                         | R80 200  | R89 900  | R92 000  |
| <b>Impahla Clothing</b>                          | Not available                                   | R56      | R120     | R54      |
| <b>Mr Price</b>                                  | R9 900                                          | R25 100  | R30 800  | R33 800  |
| <b>Foschini's</b>                                | R100 800                                        | R114 700 | R110 900 | R117 600 |
| <b>Rex Truform</b>                               | No measurable figures have been made available. |          |          |          |

In an interview conducted with a participant from Pick n Pay, he claimed that there is no greater investment than investing in people. He explained that it is hard to quantify this based purely on the individual but rather on the efficiency of the people together. He gave the example of how Pick n Pay uses a system called SAP. SAP relies heavily on data integrity and if your data integrity is not 100%, it will result in a major problem. Participant 3 states, 'Let's use a brand like KOO, if you capture something in the system with SAP and you capture it with a capital K and or a k. or a k, the system will refer to those as three separate locations' (Mundull, 2015). It is through these training initiatives and efficiencies that companies can derive economic value. When the table is examined, it can be said that all the companies within the sample invest in people, training and development and recognise the importance of this investment. Once again, the only company that did not make their results available is Rex Truform. This again supports the literature as presented by Hahn & Kühnen, 2013.

## B-BBEE rating

| B-BBEE rating           |                                                 |              |      |               |
|-------------------------|-------------------------------------------------|--------------|------|---------------|
|                         | 2011                                            | 2012         | 2013 | 2014          |
| <b>Woolworths</b>       | 4                                               | 4            | 3    | 3             |
| <b>PicknPay</b>         | 8                                               | 8            | 6    | 4             |
| <b>Impahla Clothing</b> | Not available                                   | Not measured | 7    | Non-compliant |
| <b>Mr Price</b>         | 6                                               | 6            | 6    | 5             |
| <b>Foschini's</b>       | 5                                               | 4            | 4    | 4             |
| <b>Rex Truform</b>      | No measurable figures have been made available. |              |      |               |

Once again, it can be seen from the data that the smaller companies, namely: Impahla Clothing and Rex Truform have not reported on their B-BBEE scores during the period of analysis save for Impahla in 2013. This suggests that corporate size and performance does have a role in how organisations report on their sustainability. As mentioned in the literature review, Hahn & Kühnen, 2013, believe that corporate size has often been considered to have a positive affect of the level of sustainable disclosure. This often has to do with the larger organisations having a greater environmental impact. This is also in line with Carter & Rodgers, 2008, who believe that by engaging in stakeholder engagement, firms can improve relationships with consumers and thus reduce the likelihood of associated risks such as consumer boycotts. From the examination of the scores, it seems that Woolworths, Pick n Pay, Mr. Price and the Foschini group have all aimed and succeeded at improving their level of B-BBEE compliance. This evidence is supported by a second interview conducted with a participant from Woolworths, who said that B-BBEE has become a major focus of their business as the majority of their suppliers fall under this criteria and concern. Woolworths Holdings also offer Enterprise development, which is part of their transformation initiative. Woolworths Holdings identify suppliers that fall in line with their values and principals and then provide resources and skills to bring them up to speed and into Woolworths Holdings supply chain. By collaborating with their suppliers, Woolworth Holdings has been able to enforce a certain level of quality and standards in the products they sell. B-BBEE scores are of particular significance in the South Africa context as it regards transformation.

## Work related accidents

| Work related accidents  |                                                 |      |      |      |
|-------------------------|-------------------------------------------------|------|------|------|
|                         | 2011                                            | 2012 | 2013 | 2014 |
| <b>Woolworths</b>       | NA                                              | 778  | 682  | 735  |
| <b>PicknPay</b>         | No measurable figures have been made available. |      |      |      |
| <b>Impahla Clothing</b> | 45                                              | 50   | 45   | 207  |
| <b>Mr Price</b>         | 70                                              | 95   | 84   | 75   |
| <b>Foschini's</b>       | 408                                             | 431  | 306  | 330  |
| <b>Rex Truform</b>      | No measurable figures have been made available. |      |      |      |

Occupational Health and Safety form part of the social focus of a study conducted by Hahn & Kühnen, 2013, and is even considered to be a social indicator in regards to sustainability reporting (Ahi & Searcy, 2015). Health and safety is also listed for all companies within the sample when it comes to their specific codes of conduct. In an interview conducted with a participant of Impahla Clothing, he explained that Impahla Clothing is audited annually by The PUMA, Adidas, NBC and Excellence in Health and Safety annually check and assess Impahla Clothing and investigate what concerns Impahla Clothing employees, clients and industry regulatory bodies might have (Impahla Clothing, 2014). Based on the figures, it could be said that there is a lot of disparity when it comes to the different results of the organisations. No organisation is the same size and therefore, what might seem bad for a large company could in effect be the same for a small number for a small company. Organisations that showed evidence of reducing their work related accidents included Mr. Price and the Foschini Group.

## Share Price (Closing)

| Share Price (Closing)   |                |         |         |         |
|-------------------------|----------------|---------|---------|---------|
|                         | 2011           | 2012    | 2013    | 2014    |
| <b>Woolworths</b>       | R26,73         | R34,04  | R33,79  | R36,73  |
| <b>PicknPay</b>         | R20,07         | R18,33  | R18,94  | R20,55  |
| <b>Impahla Clothing</b> | Not applicable |         |         |         |
| <b>Mr Price</b>         | R63,38         | R94,34  | R116,99 | R156,01 |
| <b>Foschini's</b>       | R84,65         | R123,68 | R112,80 | R107,15 |
| <b>Rex Truform</b>      | R10,00         | R16,00  | R15,00  | R12,00  |

Share price and, more importantly, the change in share price was selected as a social indicator in this study because the aim of the research was to establish whether improving social sustainability and supplier efficiencies

would lead to improved economic sustainability. Through triangulation, it is hoped that a relationship can be established between the different social and economic indicators. Triangulation is broadly defined as "the combination of methodologies in the study of the same phenomenon." Given basic principles of geometry, multiple viewpoints allow for greater accuracy. Similarly, organisational researchers can improve the accuracy of their judgments by collecting different kinds of data bearing on the same phenomenon. (Jick, 1979). Woolworths saw an increase of 37% in their share price. Pick n Pay saw an increase of 2%. As Impahla is not a listed company, no share prices are available. Mr. Price saw an increase of 146% in their share prices, which is by far the largest increase within the sample. The Foschini Group saw an increase of 27% whereas Rex Truform reported an increase of 20%. Note that these increases are the percentage change over the 4-year period total.

## Market Capitalisation

| Market Capitalisation   |                |             |             |             |
|-------------------------|----------------|-------------|-------------|-------------|
|                         | 2011           | 2012        | 2013        | 2014        |
|                         | R'000          | R'000       | R'000       | R'000       |
| <b>Woolworths</b>       | R24 580 000    | R42 095 000 | R54 275 000 | R65 550 000 |
| <b>PicknPay</b>         | R19 581 900    | R9 664 500  | R9 986 100  | R10 835 000 |
| <b>Impahla Clothing</b> | Not applicable |             |             |             |
| <b>Mr Price</b>         | R15 744 000    | R23 561 000 | R29 400 000 | R39 000 000 |
| <b>Foschini's</b>       | R20 480 800    | R29 744 800 | R25 774 600 | R23 787 800 |
| <b>Rex Truform</b>      | R213 700       | R334 400    | R312 500    | R246 200    |

As with the case of share price, market Capitalisation was selected because the researcher believes that this economic indicator that can be used to establish the current economic health of an organisation. Through an analysis and triangulation of this indicator and the social sustainability indicators, it is hoped that a link can be established that proves the proposition: Firms within the retail clothing industry of South Africa that improve social sustainability and supplier efficiencies along their supply chains lends to improved economic sustainability. Publicly listed companies can be considered to be more actively engaged in reporting in order to comply with certain regulations, adopt good practice by competitors, and/or cope with stakeholder pressure (Hahn & Kühnen, 2013; Haddock, 2005).

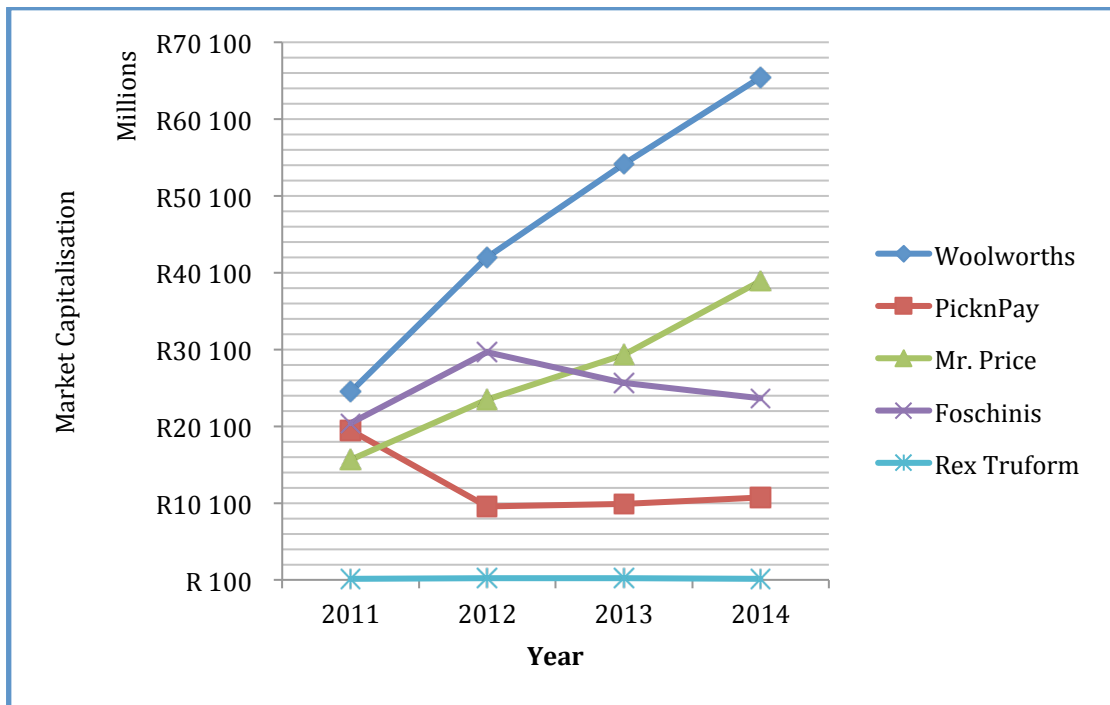
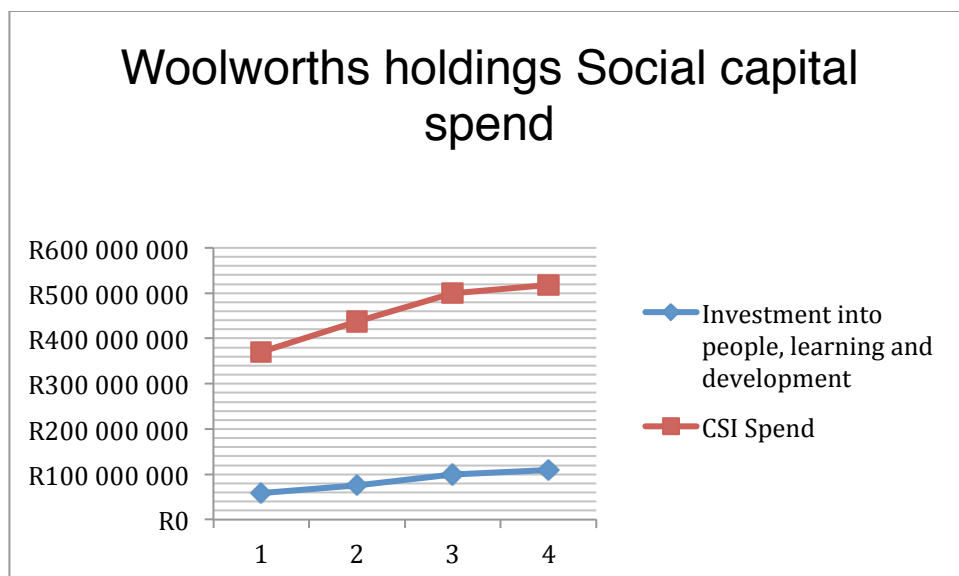


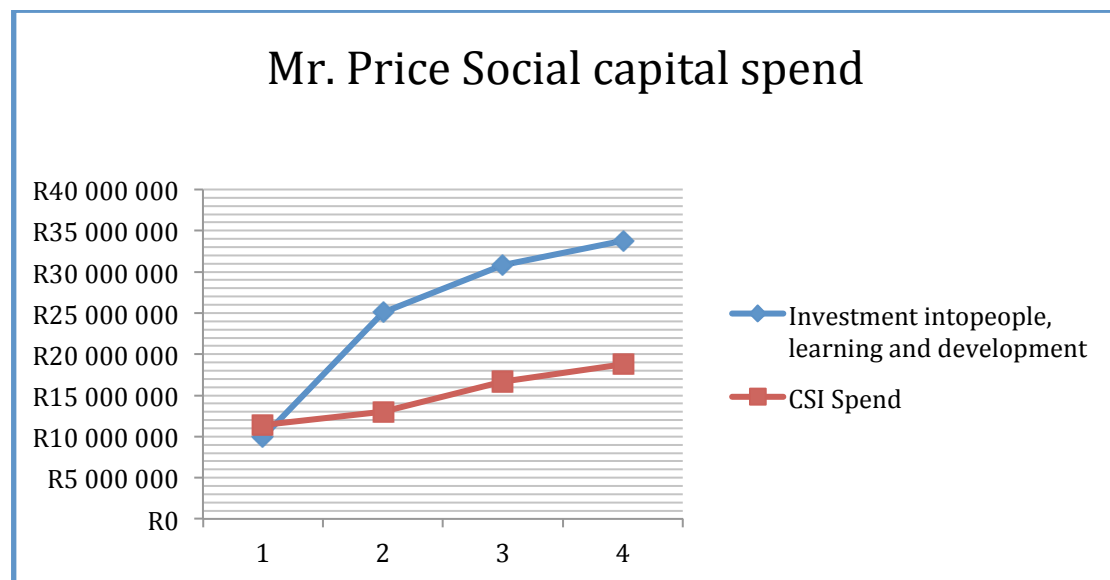
Figure 12: Market Capitalisation of organisations

Based on Figure 12 above, it can be seen that only Woolworths Holdings and Mr. Price have grown their Market Capitalisation year on year. It can therefore be said that these two organisations are the only organisations within the sample that show future growth prospects. Unfortunately, Impahla Clothing, being an unlisted company, did not provide any data in terms of their market value for this portion of the study.



Examining Woolworths Holdings as a stand-alone example, the company has increased their investment into their social capital every year during the period of 2011 to 2014. This social capital includes investment into people;

training and development as well as the corporate social initiative spend. Based on the data collected and the comparison between Market Capitalisation as well as Social Capital Spend, a positive comparison can be drawn. The same can be said for Mr. Price based on their Social Capital Spend presented below.

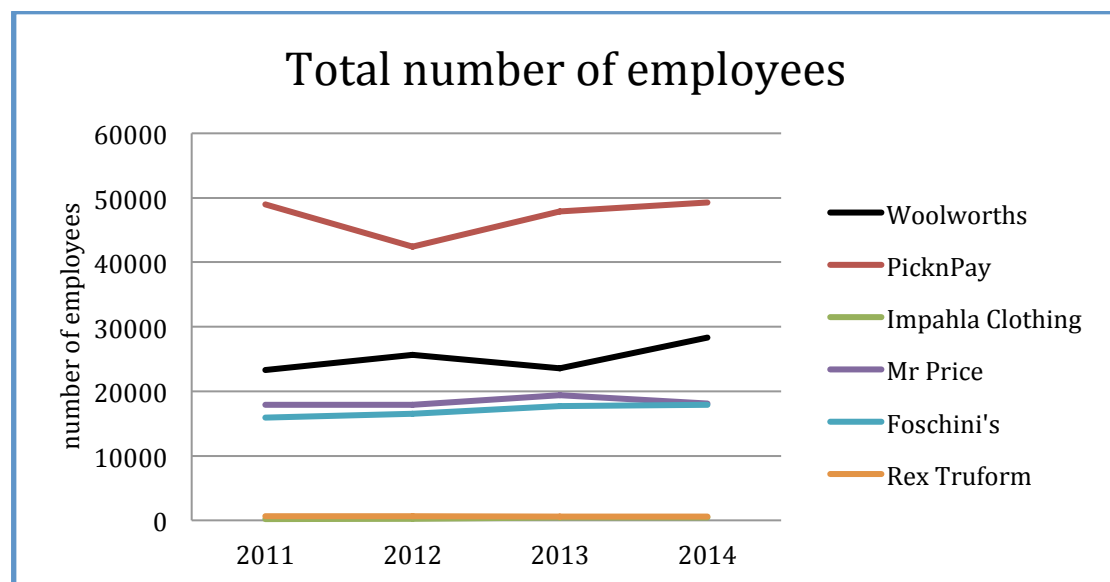


From analysis of figure 12 and the investment into social capital spend, it is in line with the literature of Vachon & Mao, 2008, who claim that there is an increase of organisations that have realised the potential financial benefit through environmental protection and social investment. Organisations as well as industries have begun to focus much of their efforts on corporate social responsibility. The study of Woolworths and Mr. Price prove that this is indeed the case. This is also an example of how the growth of the environmental and sustainability movement, and how companies are realising the importance of improved environmental and social performance (Lamberton, 2000).

When it comes to employee count, the Pick n Pay Group has the largest number of employees within their workforce. However, their market capitalisation also has the largest drop within 1 year of all the companies in the sample. It is believed that there is a lack of understanding amongst business leaders as to what the definition of sustainability is and what it means to a company and its business practices. A dedication to sustainability and to SCM has to be incorporated on a strategic level and in the values of the company. This “orientation” emphasizes top-management support as a key factor for reaching the full potential of SSCM. Being part of the strategic values of a company, orientation also implies to integrate

sustainability in the organization's strategy and strategy formulation for reaching a competitive advantage (Beske & Seuring, 2014).

Possible reasons why this might occur could include that top management and decision makers lack a common knowledge about drivers and issues that are relevant to their organisations and industry. Organisations also do not often share common definitions of language for driving sustainability. This lack of understanding often leads to the goals not being clearly understood within the organisation. Additionally, there is often little understanding of how to measure progress once actions are undertaken (Giunipero, Hooker, & Denslow, 2012). This could be the potential issue concerning the Pick n Pay Group. The table below helps to illustrate this point.



### Conclusion for Proposition 1

Proposition 1 states, 'Firms within the retail clothing industry of South Africa that improve social sustainability and supplier efficiencies along their supply chains leads to improved economic sustainability'. Based on the evidence provided in this report and the results of the study conducted by the researcher, there is evidence of a link between investment into social sustainability and economic sustainability amongst some of the better performing and larger companies within the retail clothing industry of South Africa, as well as evidence of poor economic performance and social sustainability amongst other organisations in the sample. However, this proposition cannot be statistically supported or validated at this time. The results that the proposition could be inferred to show a positive relationship but unfortunately due to the size of the sample and willing participants, the sample was too small to give a fair and accurate representation of the retail clothing industry of South Africa. An issue also arises with this study concerning the reporting of data. Companies may have only chosen select data into the study and this could have resulted in the data being skewed or lacking in certain regards. It is for these reasons that proposition 1: Firms within the retail clothing industry of South Africa that improve social sustainability and supplier efficiencies along their supply chains leads to improved economic sustainability, cannot be validated as further research is required.

### Results pertaining to Proposition 2

Proposition 2: Firms that partake, implement and report on Sustainable Supply Chain Management will achieve higher economic performance in the long term than those firms that pursue only one or two of the three components of the triple bottom line.

The aim of this proposition was to determine whether there was a positive relationship between sustainable supply chain management and higher economic performance of organisations within the retail clothing industry of South Africa. There is much research and literature available as to what characteristics a supply chain contains or should contain as well as what elements/processes make up a supply chain as a whole and should be considered. In the past literature, Harland, 2002, proposes that supply chain management consists of four levels including: Supply policy, Supply Strategy, Supply Management and Supply Operations (Harland, 2002). Govindan, et al., 2015, suggest that sustainable supply chains should contain lean, green and resilience as important characteristics to consider when addressing supply chain performance (Govindan, Azevedo, Carvalho, & Cruz-Machado, 2015). Turker and Altuntus, 2014, present a theoretical sustainable

supply chain management framework that organisations could adopt and incorporate into their business practices (figure 5). This theoretical framework will be used to test whether the organisations within the sample are incorporating sustainable supply chain management into their business practices and then from there, the financial results will be analysed from the sample to test whether there is a correlation.

### Woolworths Holdings

With regard to Woolworths Holdings, the aim of the research was to establish as to whether there was a link between their financial results and the sustainable supply chain management practices Woolworths might use. In order to test this theory, criteria as presented in the literature review by (Turker & Altuntas, 2014) in their sustainable supply chain management framework was examined.

The two main elements to be checked off on the SSCM framework are Supply chain management for risk and performance as well as Supply chain management for sustainable products.

**Supply chain for risk and performance** - According to the results of the interviews as well as the examination of Woolworths Holdings integrated reporting, Woolworths does compensate for risk and performance through supplier assessment plans which are governed by what is known as the Woolworths Holdings code of business principals known as ETI base codes (Mabunda, 2015). This code of business principles supports the literature that an organisation's sustainability initiatives and its corporate strategy must be closely interwoven (Carter & Rodgers, 2008). The supplier code of business principles is in place to mitigate against potential risks including environmental and social risks. This supports Anderson, 2006; sustainability risk management deals with emerging environmental and social justice risks. Suppliers are encouraged to have preventative measures in place in order to counter any identified risks. Suppliers are also audited for compliance to the supplier code of business principals. Should there be no compliance and no pledge to improve compliance, Woolworths terminates business with the said supplier. Woolworths Holdings also looks at improving their supply chain performance by improving quality and dependency of their suppliers. This has been achieved through a collaborative effort between Woolworths, the WWF who advise and guide Woolworths in some of their management and strategy decisions as well as through investment into their suppliers to bring their operations up to the Woolworths standards. This is an example that supports the literature of Vachon & Klassen, 2006, which states, 'managers are forced to deal with social and environmental issues, not only

for their own firm, but also related to their supply chain partners. Firms face a great deal of scrutiny from many diverse stakeholder groups, including governmental agencies, neighbors, workers, and not-for-profit groups. This scrutiny is over and above growing demands from at least some customer segments for more environmentally friendly practices' (Vachon & Klassen, 2006). All of these processes and quality steps are run by the Woolworths Good Business Journey (Woolworths Holdings Limited, 2014). In 2014, "Woolworths invested R284 million into the improvement of their supply chain" (Woolworths Holdings Limited, 2014, p. 45). This supports the literature as presented by (Ageron, Gunasekaran, & Spalanzani, 2012). "Many companies now in fact include stakeholder engagement as part of their integrated reporting. As more customers become aware of their personal environmental impact and in the name of being environmentally friendly, they accept to pay more for green products. By doing this, they encourage and influence companies to adopt more SSCM practices and they ask in return companies to inform them on their sustainable decisions and actions".

[Supply chain management for sustainable products](#) – Nadia Mohammad explained in her interview that one of the main goals of the Good Business Journey is to ensure that the Woolworths brand maintains its sustainability through making sure the products were sustainable for South Africa as well as being authentically South African (Mohammad, 2015). This has been achieved at Woolworths through CSI initiatives like the Good Business Journey which is responsible for maintaining what the Woolworths brand stands for in quality, value and the difference while also ensuring that 10 years from now, their supply chain will still be productive, optimal and the same quality is still available. The Good Business Journey is responsible for ensuring ethical and responsible procurement as well as ensuring Woolworths contribute positively to the environment as well as an underlying factor as to how Woolworths initiates certain CSI foundation projects that lend themselves to teaching South Africans about a sustainable future. Woolworths have aided their suppliers through training and development. This again supports Vachon & Klassen, 2006. In the 2014 financial year alone, "Woolworths spent over 110 million rand on training and maintained a level 3 BBBEE score through commitment to supporting emerging black-owned businesses in the Woolworths supply chain" (Woolworths Holdings Limited, 2014, p. 14).

A major investment and goal of Woolworths Holdings has been sustainable farming. This farming initiative is known as Farming for the Future. There are a number of environmental challenges for agriculture in South Africa including water scarcity and quality issues, poor soil quality in regions of the

country, land tenure security, a decrease in the amount of farmers, the impact of climate change as well as a trend towards urbanisation. All of these issues and challenges has affected food prices and food security in South Africa. However, it must be known that these pressures also affect the manufacturing of clothing as well as the natural resources such as the cotton growing process. Woolworths has recognized these pressures and in an attempt to combat them has introduced and encouraged the move towards sustainable farming practices that encourages the protection of soil, safe water sources and the promotion of biodiversity rural livelihood upliftment while still producing sufficient and nutritious food. The same is required for the production of fibres used for textiles (Woolworths Holdings Limited, 2014). Woolworths also partnered with the National Business Initiative on an energy project. This project took place in South Africa, where Woolworths has engaged 150 of its suppliers to participate in energy audits, which was fully paid for by this NBI/DFID program. The result of this energy audit included cost saving opportunities, one of which would be a R556 000 investment that would translate to a R14 million in savings over the next ten years for the organisation (Woolworths, 2014). In order to ensure that Woolworths adheres to these strategic goals and that the Good Business Journey is implemented across business operations, Woolworths have set up a sustainability and ethics committee, which forms part of the board of directors. The table on the following page provides a checklist for Woolworth's Holdings for the framework as proposed by Turker & Altuntas, (2014).

| SCM for Sustainable Products                                                                                                      |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Product Lifecycle Assessment                                                                                                      |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| - Supplier code of conduct and supplier audits                                                                                    |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| 1) Improving Suppliers                                                                                                            |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| - R110 Million spent on training                                                                                                  |                  | - CSI initiative Farming for the future                                                                                                                                                                                                                                                           |                                                                    |
| 2) Communicating with Suppliers                                                                                                   |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| Collabrotive effort between Woolworths, the WWF and woolworths suppliers to ensure Supplier code of conduct is up to requirements |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| 3) Criteria for suppliers                                                                                                         |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| Environmental                                                                                                                     |                  | Social                                                                                                                                                                                                                                                                                            |                                                                    |
| CSI initiative - Farming for the Future                                                                                           |                  | Investment into transformation - supporting emerging black-owned businesses in the Woolworths supply chain. Woolworths currently supports 53 enterprises and, as at end June 2014, had disbursed R42 million in loans and provided R284 million in business opportunities to these organisations. |                                                                    |
| CSI initiative - Fishing for the Future                                                                                           |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| Animal Welfare Policy                                                                                                             |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| Ongoing strategies to managehigh risk commodities like Cotton                                                                     |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| Reduction of Water use in supply chain where possible                                                                             |                  | Food security (EduPlant), child safety                                                                                                                                                                                                                                                            |                                                                    |
| Waste management                                                                                                                  |                  | Make a difference education programme                                                                                                                                                                                                                                                             |                                                                    |
| Energy efficiency iniatives - Energy audit partnership with NBI                                                                   |                  | MySchool programme                                                                                                                                                                                                                                                                                |                                                                    |
| SCM for Risk and performance                                                                                                      |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| Supplier Assessment Plan                                                                                                          |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| - Supplier code of conduct and Supplier audits                                                                                    |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| 1) Improving Supply Chain performance                                                                                             |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| Dependency                                                                                                                        | Quality          | Speed                                                                                                                                                                                                                                                                                             | Flexibility                                                        |
| Investment into maintain and improving current IT systems                                                                         | Ethical sourcing | Investment in distribution centre capacity in South Africa                                                                                                                                                                                                                                        | Clear cost to sell targets designed to improve operational gearing |
|                                                                                                                                   |                  | New processes to drive efficiencies in existing distribution centres                                                                                                                                                                                                                              |                                                                    |
| 2) Avoiding Risks                                                                                                                 |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| Economic                                                                                                                          |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| 38% reduction in relative consumption of energy in South African stores                                                           |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| Investment of R284 million towards supply chain efficiency                                                                        |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| Supplier energy Audits in collaboration with NBI, saving over R14 million over the next ten years of operation                    |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| Environmental                                                                                                                     |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| Sustainable Denim project resulting in saving of water and recycled plastic waste                                                 |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| Supplier code of conduct to be revised to include more stringent requirements in line with international best practice            |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| Water swardship programs throughout Western Cape                                                                                  |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| Social                                                                                                                            |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| Commitment towards Transformation and BBBEE codes - Support of emerging black owned businesses with Woolworths supply chain       |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |
| Continuously benchmark our employee value proposition (EVP) to maintain competitiveness                                           |                  |                                                                                                                                                                                                                                                                                                   |                                                                    |

Sustainability and Ethics committee

Management System

Table 13: Woolworths Sustainable Supply Chain Management Framework

In relation to the literature, Ahi and Searcy proposed this framework for SSCM (Sustainable supply chain management) that organisations and companies can adhere to in order to improve their SSCM. Its main objective is to enhance the operational efficiency, profitability and competitive position of a firm and its supply chain partners (Min & Zhou, 2002).

#### Pick n Pay Group

As in the scenario with Woolworths Holdings, the aim of the research for the Pick n Pay Group was to establish as to whether there was a link between their financial results and their investment into sustainable supply chain management practices. The findings will also be compared to the criteria as proposed by (Turker & Altuntas , 2014).

**Supply chain for risk and performance** - When one examines the findings from the interview with the participant from Pick n Pay as well as the integrated reporting for the Pick n Pay Group, the following can be said regarding supply chain risk and performance. Pick n Pay does provide a supplier assessment plan in the form of audits and strict guidelines presented by Pick n Pay to suppliers as well as audits from the SSG (Sustainable Safety Group). These audits ensure that criteria regarding the triple bottom line are met as well as issues surrounding child labour and responsible sourcing (Mundull, 2015). These supplier assessment plans support the literature as presented by Muller & Seuring, 2008 and Handfield, Walton, Sroufe, & Melnyk, 2002. The Pick n Pay Group also looks at initiatives that create and sustain jobs and small businesses within their supply chain; examples include the Pick n Pay small business incubator (Pick n Pay Group, 2013). The environmental criteria measured include carbon footprint, fuel policy plans and the age of the fleet being used. These are based off the GRI reporting guidelines (Global Reporting Initiative, 2014). The management processes of suppliers are also strictly audited and suppliers are measured on a strike rate to ensure quality and dependency. Suppliers are motivated to deliver quickly and efficiently by guarantees that should they deliver on time, trucks will not have to queue to unload. Pick n Pay also operate out of a centralised cross document distribution centre out of Cape Town for retail clothing and outsource all their logistics through a delivery company, City Couriers. The interviewee claims that the entire supply chain of Pick n Pay is audited. This audit includes the factories and their various pollutants, the shipping and logistics of the products, maximising space utilisation are key in order to reduce their carbon footprint, the distribution centre monitors distribution drivers loading periods and store stops are made as short as possible. In short, these supply chain audits involve maximising space, improving journey time as well as turnaround time. This results in better time efficiency, lower costs and better energy efficiency and in turn

more profitability. This is an example of a supply chain that makes use of material and information flow risk mitigation as identified by Tang and Nurmaya Musa, 2010. They identified sourcing flexibility risk, supplier selection, outsourcing, supply product quality monitoring and supply capacity as potential supply chain risks.

**Supply chain management for sustainable products** – Pick n Pay has looked at improving their supply chain management for sustainable products through audits conducted in conjunction with the SSG. The Pick n Pay Group looks at improving suppliers in the form of mentorship programmes. The Pick n Pay Group also associate with and do business with 133 local produce suppliers certified against the GLOBAL Good Agricultural Practice (GAP) standard (Pick n Pay Group, 2013). Pick n Pay has also introduced initiatives concerning sourcing their products ethically and responsibly. The Ackerman foundation was established to allow Pick n Pay to invest back into the communities through supporting business initiatives, investing in education, funding bursaries and in particular investing in the support of the previously disadvantaged people and communities. In 2010, Pick n Pay became the first retailer to make a public commitment to stocking Fairtrade products. Fairtrade is the leading certification system for sustainability and poverty alleviation in the world; each certified producer is audited yearly to ensure compliance (Pick n Pay Group, 2013). Pick n Pay also recycle excess clothing hangers from their stores that are collected by City couriers and taken to be recycled. This supported the concept of product end of life as found in the literature review by Shih, 2001; Linton, Klassen, & Jayaraman, 2007. The product lifecycles within Pick n Pay runs in two seasons, summer and winter and clothing is aimed at being moved out the business in 10 to 12 weeks. Any old clothes that cannot be sold are given to the Clothing Bank where the product is refurbished and given to small satellite businesses in disadvantaged communities where they are sold (Mundull, 2015). In the interview process, the participant spoke about social capital investment and how important it is for economic returns as many processes such as picking and buying rely on human capital. As a result, there has been a massive amount of investment into training of Pick n Pay personnel. “Amounts spent on training of staff have increased by 28% from R 71800000 in 2011 to R 91700000 in 2014” (Pick n Pay, 2014, p. 36). The table below provides a checklist for the Pick n Pay Group for the framework as proposed by (Turker & Altuntas, 2014).

| SCM for Sustainable Products                                                                                                                        |                                                                      |                                                                                                                          |                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Product Lifecycle Assessment                                                                                                                        |                                                                      |                                                                                                                          |                                                        |
| - Internal audits from PicknPay Group as well as Sustainable Safety Group                                                                           |                                                                      |                                                                                                                          |                                                        |
| 1) Improving Suppliers                                                                                                                              |                                                                      |                                                                                                                          |                                                        |
| - Mentorship programs and training                                                                                                                  |                                                                      | - CSI initiatives                                                                                                        |                                                        |
| 2) Communicating with Suppliers                                                                                                                     |                                                                      |                                                                                                                          |                                                        |
| Transparent audits                                                                                                                                  |                                                                      |                                                                                                                          |                                                        |
| 3) Criteria for suppliers                                                                                                                           |                                                                      |                                                                                                                          |                                                        |
| Environmental                                                                                                                                       |                                                                      | Social                                                                                                                   |                                                        |
| Recycled clothes hangers as part of waste management strategies                                                                                     |                                                                      | The Ackerman foundation                                                                                                  |                                                        |
| Suppliers audited for pollutants                                                                                                                    |                                                                      | Fairtrade products                                                                                                       |                                                        |
| City Couriers audited for carbon footprint and energy efficiencies                                                                                  |                                                                      | Clothing bank                                                                                                            |                                                        |
|                                                                                                                                                     |                                                                      | Investment into training                                                                                                 |                                                        |
| SCM for Risk and performance                                                                                                                        |                                                                      |                                                                                                                          |                                                        |
| Supplier Assessment Plan                                                                                                                            |                                                                      |                                                                                                                          |                                                        |
| - Internal audits from PicknPay Group as well as Sustainable Safety Group                                                                           |                                                                      |                                                                                                                          |                                                        |
| 1) Improving Supply Chain performance                                                                                                               |                                                                      |                                                                                                                          |                                                        |
| Dependency                                                                                                                                          | Quality                                                              | Speed                                                                                                                    | Flexibility                                            |
| Suppliers are measured on a strike rate                                                                                                             | Buyers only purchase products that's have been screened and audited. | distribution centre monitors<br>distribution drivers<br>loading periods and<br>store stops are made as short as possible | Strict delivery times and time penalties for suppliers |
| 2) Avoiding Risks                                                                                                                                   |                                                                      |                                                                                                                          |                                                        |
| Economic                                                                                                                                            |                                                                      |                                                                                                                          |                                                        |
| Outsource deliveries, auditing for fuel efficiencies                                                                                                |                                                                      |                                                                                                                          |                                                        |
| minimise time on the roads and delivery times                                                                                                       |                                                                      |                                                                                                                          |                                                        |
| Maximising of space utility                                                                                                                         |                                                                      |                                                                                                                          |                                                        |
| Environmental                                                                                                                                       |                                                                      |                                                                                                                          |                                                        |
| Audits screen suppliers for their Carbon footprint, age of their fleet as well as their fuel policies                                               |                                                                      |                                                                                                                          |                                                        |
| Audits also conducted with regard to sourcing and use of dyes or other pollutants                                                                   |                                                                      |                                                                                                                          |                                                        |
| Carbon footprint (CO2e) (tonnes) in 2014 was 582 518 tonnes compared to a total of 602 782 tonnes in 2011. A 10% decrease against the 2010 baseline |                                                                      |                                                                                                                          |                                                        |
| Social                                                                                                                                              |                                                                      |                                                                                                                          |                                                        |
| Child labour practices are screened                                                                                                                 |                                                                      |                                                                                                                          |                                                        |
| Initiatives that create and sustain jobs and small businesses within our supply chain (small business incubator)                                    |                                                                      |                                                                                                                          |                                                        |

Sustainability and Ethics committee

Management System

Table 14: Pick n Pay Sustainable Supply Chain Management Framework

### Impahla Clothing Company

As in the case with the first two organisations of this chapter; Woolworths Holdings and the Pick n Pay Group, the aim of the research for Impahla clothing was to establish as to whether there was a link between their financial results and their investment into sustainable supply chain management practices. These findings will also be compared to the criteria as proposed by (Turker & Altuntas , 2014). It should be noted that Impahla clothing was selected for this study as a supplier in hopes that it would help to establish further insight into industry trend.

**Supply chain for risk and performance** - Upon examination of the interview conducted and the findings from the integrated reports of Impahla clothing, the following can be said for the Impahla clothing company. Impahla clothing provides a supplier assessment plan that falls in line with PUMA's supply chain expectation and product quality standards. (Impahla Clothing, 2014). This supplier assessment plan is known as the PUMA S.A.F.E supplier survey. Impahla Clothing has ensured that all of their non-PUMA suppliers are briefed with the PUMA S.A.F.E code of conduct. The function of this code of conduct is to ensure that suppliers meet the criteria as set out by PUMA guidelines in terms of environmental, social, as well as health and safety concerns. Impahla Clothing monitors these suppliers as well as conduct ad hoc requests for suppliers to provide their results as bench marked against the PUMA S.A.F.E guidelines. From 2013, Impahla Clothing has requested that their local suppliers rate their response to the PUMA S.A.F.E. standards. Through completion of these surveys, their suppliers have helped to identify both strengths and weaknesses in Impahla Clothing local supply chain while proactively managing and mitigating against any risks that may arise. This supports Min & Zhou, 2002, that an integrated concept of supply chain management is to facilitate information exchange among various business entities e.g. suppliers, manufacturers, distributors, third-party logistics providers, and retailers. The PUMA S.A.F.E code of conduct is also a great example of how buying corporations have been held more responsible for their suppliers' practices (Vachon & Mao, 2008).

Impahla Clothing has attempted to improve the quality and dependability of their suppliers through vertical integration. These integrations include:

- Embroidery – Embellishment of logos on garments
- Rebate store – A regulated and controlled store for imported and duty-free fabric that is not available in South Africa

- Sublimation – The all-over printing of garments of franchise sport teams (a fast-growing market)
- Cotton fabric manufacturing – Knitting of cotton fabrics (preferably from the ‘Cotton Made in Africa’ program (a fair trade initiative) in order to control the supply of this crucial raw material)
- Screen-printing and heat transfers – Addition of branding aspects on garments
- Technical fabric importation – The importation of high-spec fabrics not available in South Africa (Impahla Clothing, 2014).

These points support the literature that upstream and downstream partners and their implications play a major role in supply chain performance (Ageron, Gunasekaran, & Spalanzani, 2012).

Impahla Clothing having also acquired a sock factory further supports this literature. Through investing into improved technology, they hope to reduce bottlenecks in supply efficiencies and improve and maintain their performance accuracy of 95%. Whilst on an educational tour of a client’s many factories near Shanghai, Impahla learnt about several low cost production line modifications to improve efficiency. These have subsequently been implemented at their factories and facilities. In Impahla Clothing’s integrated report it states, “New technology adds value to products and processes, improves our efficiency and ensures we remain cost competitive” (Impahla Clothing, 2014). What is interesting is that Impahla recognize that with the introduction of new technologies, so job creation becomes a concern. Impahla Clothing has tried to mediate this through ensuring a healthy balance between the two, namely new technology and job creation. This is an important aspect to consider when we think of the South African context and the large amount of unemployment.

**Supply Chain management for sustainable products** – Impahla Clothing recognise the importance of high quality products from their suppliers and believe in only sourcing product that is of a high quality and is from a dependable, safe source. This supports the material flow risk of product monitoring/quality and supply capacity (Tang & Nurmaya Musa, 2010). This literature is further supported by the fact that Impahla Clothing makes use of input material that has been approved by PUMA. Approximately 90% of their input material is sourced from PUMA-approved suppliers (Impahla Clothing, 2014). Impahla Clothing has spent a total of R39.64 million in 2014 on their suppliers, more than half of which was spent on yarn, fabric, branding material and finished products. This is evidence of direct investment into suppliers and supports Anderson, 2006; Rodgers & Carter, 2008. “Before

components sourced from alternative suppliers can be taken up in the supply chain, samples have to be sent to the PUMA-approved laboratories at the Nelson Mandela Bay University in Port Elizabeth for Restricted Substance Testing (RST). Only once these components have been approved will Impahla allow them in their products” (Impahla Clothing, 2014). These material and fabric audits also form part of Impahla Clothing’s code of conduct guidelines. The PUMA S.A.F.E. guidelines also help to ensure that product lifecycle assessments take place and that issues surrounding environmental, social, health, and safety are discussed. This supports the consideration of the product life cycle as presented by Giunipero, Hooker, & Denslow, 2012.

Impahla Clothing aims to purchase their material locally as opposed to foreign markets but given that they are accountable to strict requirements as set out by PUMA and ADDIDAS, Impahla Clothing only spent 15% of their supplier budget on locally sourced product in 2014 (Impahla Clothing, 2014). More than half of this was spent in 2011. Impahla Clothing encourages best practice so that suppliers might produce an excellent standard with regard to their products, whilst ensuring a safe working environment and complying with legislation. Impahla clothing is prepared to pay premium prices for product that meets the European Union chemical standards and for product that has been safely and responsibly sourced, as they believe this helps to protect the Impahla brand name. Impahla Clothing reports that they try to meet and go beyond standards set out in their code of conduct as well as their contractual obligations. “An example for the management of their materials would be how they have reduced their lead-time to 96 days from a previous lead-time of 121 days” (Impahla Clothing, 2014, p. 26). This is well within their contractual obligation of 120 days. The table on the following page provides the framework for Impahla Clothing as proposed by Turker & Altuntas, 2014.

| SCM for Sustainable Products                                                                                                    |  |                                                                                            |  |
|---------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------|--|
| Product Lifecycle Assessment                                                                                                    |  |                                                                                            |  |
| PUMA S.A.F.E. Code of conduct, Impahla Clothing Code of conduct                                                                 |  |                                                                                            |  |
| 1) Improving Suppliers                                                                                                          |  |                                                                                            |  |
| NA                                                                                                                              |  |                                                                                            |  |
| 2) Comunicating with Suppliers                                                                                                  |  |                                                                                            |  |
| Collaboration between PUMA guidelines and what is expected from suppliers. Suppliers given PUMA S.A.F.E guideline pocket books. |  |                                                                                            |  |
| 3) Criteria for suppliers                                                                                                       |  |                                                                                            |  |
| Environmental                                                                                                                   |  | Social                                                                                     |  |
| Samples sent to PUMA approved labs at Nelson Mandela Bay University for restricted Substance testing                            |  | Annual external audits conducted by PUMA, Adidas and the NBC include human rights reviews. |  |

| SCM for Risk and performance                                                                                                                                    |         |                                                                                                                          |             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------|-------------|
| Supplier Assessment Plan                                                                                                                                        |         |                                                                                                                          |             |
| PUMA S.A.F.E. Code of conduct, Impahla Clothing Code of conduct                                                                                                 |         |                                                                                                                          |             |
| 1) Improving Supply Chain performance                                                                                                                           |         |                                                                                                                          |             |
| Dependency                                                                                                                                                      | Quality | Speed                                                                                                                    | Flexibility |
| vertical integration of processes such as embroidery, cotton fabric manufacturing, screen printing and heat transfers,sublimation, technical fabric importation |         | Improved technology to reduce bottle necks and inefficiencies. Introduction of LEAN manufacturing to improve efficiency. |             |
| 2) Avoiding Risks                                                                                                                                               |         |                                                                                                                          |             |
| Economic                                                                                                                                                        |         |                                                                                                                          |             |
| Vertical integration of processes such as embroidery, cotton fabric manufacturing, screen printing and heat transfers,sublimation, technical fabric importation |         |                                                                                                                          |             |
| Improvement of Lead time.                                                                                                                                       |         |                                                                                                                          |             |
|                                                                                                                                                                 |         |                                                                                                                          |             |
| Environmental                                                                                                                                                   |         |                                                                                                                          |             |
| In 2012, solar photovoltaic installed on roof of Maitland factory to reduce dependance on carbon based electricity.                                             |         |                                                                                                                          |             |
| Carbon emissions offset through trees planted with certified carbon-trading programme managed by Food & Trees for Africa.                                       |         |                                                                                                                          |             |
|                                                                                                                                                                 |         |                                                                                                                          |             |
| Social                                                                                                                                                          |         |                                                                                                                          |             |
| 14 out 80 non accredited suppliers completed voluntary PUMA S.A.F.E email survey. This is an increase of 9 suppliers in 2013.                                   |         |                                                                                                                          |             |
| 99% of Imphala Clothing products sold under contract contain human right clauses. All employees provided with occupational health and safety training           |         |                                                                                                                          |             |

Management System

Table 15: Impahla Clothing Sustainable Supply Chain Management Framework

### Mr. Price Group

As noted, the aim of the research was to establish whether there was a link between their financial results and their investment into sustainable supply chain management practices for Mr. Price Group. These findings will also be compared to the criteria as proposed by Turker & Altuntas (2014).

**Supply chain for risk and performance** – Clothing retail is a highly dynamic sector of the market that involves property, design, technology, logistics, fashion as well as popular culture. The retail industry is challenging due to many retailers facing market saturation and increased commoditisation, with many struggling with new multi-channel strategies to increase and maintain sales in a period of low economic growth. At the same time, retailers are under increased pressure to consider the environmental and social impacts of their operations. Based on the information made available in the integrated reports of the Mr. Price Group, the following can be deduced with regard to supply chain risk and performance. Mr. Price does account for risk where they have identified areas within their supply chain as having the most significant environmental impact. These include, “during the process of production and transportation, as well as during the customer washing and dying of the apparel and textile products” (Mr price Group Limited, 2014, p. 27). This supports the literature that focal companies of supply chains might be held responsible for the environmental and social performance of their suppliers through stakeholder pressure (Seuring & Muller, 2008). The Social, Ethics, Transformation and Sustainability Committee has been created to manage these risks and opportunities. This policy supports Harland, 2002, and the concept of Sustainable supply chain management supplier policies. Mr. Price’s supplier code of conduct requires compliance from their suppliers with regard to South African environmental legislature, but has acknowledged that further work is required to ensure that the code of conduct complies with international legislation, particularly in countries where environmental degradation has not been properly addressed (Mr price Group Limited, 2014, p. 27). This is in line with ISO certification as a driver of sustainability (Handfield, Walton, Sroufe, & Melnyk, 2002). The Mr. Price Group has helped to improve their supply chain and their relationship with their suppliers through increasing direct imports by 53% to 16% of total imported merchandise, thus reducing import costs and lead times. This is an example of material flow risk as discussed by Tang & Nurmaya Musa, 2010. The Mr. Price Group has identified that customers are moving towards mobile and PC based interfaces when it comes to their online shopping and as such, have acknowledged that brands need to create a world where brands fuse the physical and digital worlds. This is known as the ‘Omni

channel'. The Mr. Price Group has identified this as an opportunity and have stated, "The Group's target customers have fully embraced these new disruptive technologies. New-generation shoppers want to engage with retailers who are at the forefront of technology, both in store and online, and interact in a world without walls. Several exciting initiatives are underway to ensure that the Group meets and exceeds such expectations" (Mr price Group Limited, 2014, p. 28). This is a further example of risk management, Anderson, 2006, as well as competitive advantage (Giunipero, Hooker, & Denslow, 2012). The Red Cap foundation, which forms part of the Mr. Price Group CSI, created the JumpStart Manufacturing programme. The aim of this programme is to help develop the skills of uneducated youth in the clothing and footwear manufacturing industry, thereby meeting the needs of both the youth as well as the industry. Some of the achievements of the JumpStart program included the provision of 717 job placements for unemployed youth in South Africa. These placements were either within the group or other businesses that partnered with the programme throughout the years. The programme was implemented in 2007 and functions through the collaboration of the National Treasury and the Jobs fund. Since its inception, the programme has generated 2061 placements at a cost of R1750 per placement (Mr price Group Limited, 2014). This supports the research of investment into social capital as identified by Hahn & Kühnen, 2013.

Supply Chain management for sustainable products – The Mr. Price Group recognises the importance of sourcing locally manufactured apparel as this benefits the group through lowering manufacturing costs as well as reducing lead times along the supply chain, thus saving time and money. This is an example of transport and resource optimisation as identified by Anand & Grover, 2015. The Mr. Price Group says in their report that they will source their raw materials locally from manufactures and suppliers whenever possible but has also said that due to the large amount of demand the Mr. Price Group requires, this is not always possible. The East, and in particular China are a large part of the Mr. Price sourcing strategy. "The company is currently reviewing its resourcing strategy to enable quick response and is working with strategic suppliers to develop key manufacturing skills". (Mr price Group Limited, 2014, p. 30). The Groups Enterprise development investment is an example of how the organisation has invested in local suppliers in hopes of improving and building on the current manufacturing capabilities of the South African clothing retail supply. This is achieved through a combination of loan, early payment (to assist with cash flow) and skill development (through Red Cap Foundation's Jumpstart Programs) and is dependent on the needs of the individual supplier, their level of supplier performance and capacity (Mr price Group Limited, 2014, p. 25). This

supports the supplier strategy portion of sustainable supply chain management as recommended by Harland, 2002.

Four consolidation centres were also established in the East. In order to ensure that the Mr. Price Group maintains a socially responsible environment, they have joined the Ethical Trading Initiative (ETI) and Supplier Data Exchange (SEDEX) to encourage socially responsible practices as a part of their supply chain practices (Mr price Group Limited, 2014, p. 33). The Foundation of good corporate governance was also established to promote a socially responsible environment. This could be an example of how Mr. Price hopes to improve their transparency through sustainability reporting (Hahn & Kühnen, 2013). The risks and potential implications of climate change and their direct and indirect impacts on raw materials used in their products manufacturing process have also seen attention from the Mr. Price Group (Carter & Rodgers, 2008). The Mr. Price Group acknowledges that proper research that is appropriate to the needs of the retail clothing industry is required in order to address these risks. “Through the participation with the National sustainable textile and apparel cluster, the Group hopes to produce product lifecycle assessments to assist the textile industry to make informed decisions regarding the fibres that’s are socially and environmentally appropriate for local production, while still assisting retailers to make appropriate textile and design decisions as a part of their business that allow financial stability”. (Mr price Group Limited, 2014, p. 27).

Based on this information from the integrated reports and other relevant documentation and literature, the table on the following page provides the framework for the Mr. Price Group as proposed by Turker & Altuntas, 2014.

|                                                                                                                                                                                                                                                                                                |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------------|-------------------|
| SCM for Sustainable Products                                                                                                                                                                                                                                                                   |                                                  |                                                                                                                                                 |                                | The Social, Ethics, Transformation and Sustainability Committee | Management System |
| Product Lifecycle Assessment                                                                                                                                                                                                                                                                   |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| Mr Price’s supplier code of conduct                                                                                                                                                                                                                                                            |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| 1) Improving Suppliers                                                                                                                                                                                                                                                                         |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| The Enterprise Development investment                                                                                                                                                                                                                                                          |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| 2) Communicating with Suppliers                                                                                                                                                                                                                                                                |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| Consolidation centres constructed in the East to improve communications                                                                                                                                                                                                                        |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| 3) Criteria for suppliers                                                                                                                                                                                                                                                                      |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| Environmental                                                                                                                                                                                                                                                                                  |                                                  | Social                                                                                                                                          |                                |                                                                 |                   |
| Participation in the National Sustainable Textile and Apparel Cluster will produce life cycle assessments that will assist the South African textile industry to make informed decisions regarding the fibres that’s are socially as well as environmentally appropriate for local production. |                                                  | Ethical Trading Initiative (ETI) and Supplier Data Exchange (SEDEX) to encourage socially responsible practices as a part of their supply chain |                                |                                                                 |                   |
|                                                                                                                                                                                                                                                                                                |                                                  | Foundation of Good Corporate Governance                                                                                                         |                                |                                                                 |                   |
| SCM for Risk and performance                                                                                                                                                                                                                                                                   |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| Supplier Assessment Plan                                                                                                                                                                                                                                                                       |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| Mr Price’s supplier code of conduct                                                                                                                                                                                                                                                            |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| 1) Improving Supply Chain performance                                                                                                                                                                                                                                                          |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| Dependancy                                                                                                                                                                                                                                                                                     | Quality                                          | Speed                                                                                                                                           | Flexibility                    |                                                                 |                   |
| Technology development enabling multiple communication channels.                                                                                                                                                                                                                               | National Sustainable textile and apparel cluster | Increase of direct imports to 16% Omnichannel creating new retail platform                                                                      | Review of resourcing strategy. |                                                                 |                   |
| 2) Avoiding Risks                                                                                                                                                                                                                                                                              |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| Economic                                                                                                                                                                                                                                                                                       |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| Identified new consumer platforms and utilised tecnology to create 'Omnichannel', thereby creating new platforms                                                                                                                                                                               |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| Environmental                                                                                                                                                                                                                                                                                  |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| Inproving of direct imports, thereby reducing carbon emissions                                                                                                                                                                                                                                 |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| National Sustainable textile and apparel cluster                                                                                                                                                                                                                                               |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| Social                                                                                                                                                                                                                                                                                         |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| Jumpstart Manufacturing programme                                                                                                                                                                                                                                                              |                                                  |                                                                                                                                                 |                                |                                                                 |                   |
| Redcap Foundation                                                                                                                                                                                                                                                                              |                                                  |                                                                                                                                                 |                                |                                                                 |                   |

Table 16: Mr. Price Group Sustainable Supply Chain Management Framework

## The Foschini Group Limited

**Supply chain for risk and performance** - The Foschini Group reports on what they refer to as natural capital, which are the natural resources that the company uses for its production of goods. Their environmental performance is measured and monitored by their 'Green Team', which is comprised of various senior managers from across the different areas of the business. "The Sustainability steering committee is responsible for the integration and coordination of sustainability initiatives across the group" (Foschini Group, 2014, p. 29), which in turn responds to the Social and Ethics committee. This supports literature by Harland, 2002. The Foschini Group's sustainability strategy focuses on five main areas, which include: Supply Chain, People, Environment, Socio-Economic development as well as Governance. The Foschini Group claims to not be a resource-intensive company, although they do recognise that environmental and resource issues have the potential to impact on business activities, for example through new legislative requirements, changing resource prices, shifts in consumer expectations and impacts on their supply chain and distribution activities (Foschini Group, 2014, p. 16). The Foschini Group procures merchandise from numerous countries, and requires that all with whom it does business know about TFG's commitment to promote and respect internationally accepted human rights, as well as its values which represents the highest standards of quality, integrity, excellence, compliance with the law and respect for the unique customs and cultures in communities where it procures merchandise (The Foschini Group, 2014). Requirements for suppliers are governed by the Foschini Group's purchase order terms and conditions and its standard terms and conditions, which cover issues such as quality assurances and other document checks which were not included in the integrated reports of the Foschini Group.

Material issues that the Foschini Group has identified as part of their supply chain sustainability risks include supply chain localisation, Supplier environmental, social and governance (ESG) performance, optimising freight and logistics operations (The Foschini Group, 2014, p. 20). These material issues support the literature as presented by Tang & Nurmaya Musa, 2010, which deals with material flow risk and Transport and resource optimisation as presented by Anand & Grover, 2015. Each of these material issues are discussed in detail in the following points:

- Supply chain localisation – The Foschini Group believes that an effective and successful domestic supply chain requires involvement at the coalface. The Group acquired Prestige Clothing in 2012, thus providing substantial Quick Response manufacturing capabilities in two locations, namely Maitland & Caledon. Having developed the expertise in sustainable

quick response capabilities, PrestigeClothing has seen a substantial increase in efficiencies at plant level and due to their improved value offering to their retail customers, has resulted in a greater demand for their capacity and capabilities. This in turn has led to increased employment and a far more scalable and sustainable domestic manufacturing operation (The Foschini Group, 2014) for the Group. This expertise has allowed the Foschini Group to invest in local manufacturing to continue this successful model and create a scalable and sustainable supply chain that embraces lean manufacturing and quick response principles.

- Supplier environmental, social and governance (ESG) performance – As mentioned above, the Foschini Group does consider local manufacturing to be important and an essential aspect of their sustainability strategy. However due to the lack of suppliers at a local level as well as the unstable Rand price, the Group does source and import from the middle as well as the Far East. The Group realises that their influence over suppliers ESG varies across suppliers. Local suppliers are easily accessible and rely on the Foschini Groups procurement while overseas suppliers are far away and procurement levels are low. The Foschini Group does have a supplier take on process, which accounts for ESG criteria and applies across all suppliers.
- Optimising freight and logistics operations – The Foschini Group recognises the importance and significance of carton utilisation (used for packaging merchandise for distribution) and efficiencies. The Foschini Group measures fuel use and logistics and is currently in negotiation with forwarding and clearing agents in order to improve the efficiency and visibility of their merchandise from source to store (The Foschini Group, 2014, p. 21).

**Supply Chain management for sustainable products** – The Foschini Group recognises the environmental and social impacts of upstream activities such as fabric processing, cotton growing, other raw materials and local and imported garment production. This supports the literature by Vachon & Klassen, 2006, which says that rather than simply evaluating basic material or component criteria, such as cost, quality and delivery, supply chain managers must now address a complex array of factors that encompass the product and the process on both the upstream and downstream side of the supply chain (Vachon & Klassen, 2006). As mentioned above, the Foschini Group claims that whilst it does its best to source from and monitor the ESG suppliers, it can only really monitor this from a local level as their level of influence is limited overseas as the South Africa market is small in global terms. This is evidence of how corporate size and financial performance can limit the extent to which sustainability is incorporated into the supply chain of

an organisation (Hahn & Kühnen, 2013). The table below helps to illustrate the extent of sustainable supply chain management that the Foschini Group has implemented based on the framework by Turker & Altuntas, 2014.

| SCM for Sustainable Products                                                                                                                                                                                                                                                                                                                                                 |         |                                           |             | Social and Ethics committee | Management System |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------|-------------|-----------------------------|-------------------|
| Product Lifecycle Assessment                                                                                                                                                                                                                                                                                                                                                 |         |                                           |             |                             |                   |
| Foschini Group's purchase order terms and conditions                                                                                                                                                                                                                                                                                                                         |         |                                           |             |                             |                   |
| 1) Improving Suppliers                                                                                                                                                                                                                                                                                                                                                       |         |                                           |             |                             |                   |
| Quick Response manufacturing capabilities                                                                                                                                                                                                                                                                                                                                    |         |                                           |             |                             |                   |
| 2) Communicating with Suppliers                                                                                                                                                                                                                                                                                                                                              |         |                                           |             |                             |                   |
| NA                                                                                                                                                                                                                                                                                                                                                                           |         |                                           |             |                             |                   |
| 3) Criteria for suppliers                                                                                                                                                                                                                                                                                                                                                    |         |                                           |             |                             |                   |
| Environmental                                                                                                                                                                                                                                                                                                                                                                |         | Social                                    |             |                             |                   |
| The Foschini Group recognises the environmental and social impacts of upstream activities such as fabric processing, cotton growing, other raw materials and local and imported garment production. However as most of their suppliers are overseas, the Foschini Group says they have little influence over their suppliers but do try to source ethically and responsibly. |         |                                           |             |                             |                   |
| SCM for Risk and performance                                                                                                                                                                                                                                                                                                                                                 |         |                                           |             |                             |                   |
| Supplier Assessment Plan                                                                                                                                                                                                                                                                                                                                                     |         |                                           |             |                             |                   |
| Sustainability steering committee                                                                                                                                                                                                                                                                                                                                            |         |                                           |             |                             |                   |
| 1) Improving Supply Chain performance                                                                                                                                                                                                                                                                                                                                        |         |                                           |             |                             |                   |
| Dependancy                                                                                                                                                                                                                                                                                                                                                                   | Quality | Speed                                     | Flexibility |                             |                   |
| Investment into local manufacturing to create more scalable and sustainable supply chain that promotes lean manufacturing and quick response principles                                                                                                                                                                                                                      |         | Quick Response manufacturing capabilities | NA          |                             |                   |
| 2) Avoiding Risks                                                                                                                                                                                                                                                                                                                                                            |         |                                           |             |                             |                   |
| Economic                                                                                                                                                                                                                                                                                                                                                                     |         |                                           |             |                             |                   |
| Optimisation of logistics, carton utilisation                                                                                                                                                                                                                                                                                                                                |         |                                           |             |                             |                   |
| Environmental                                                                                                                                                                                                                                                                                                                                                                |         |                                           |             |                             |                   |
| Supplier environmental, social and governance (ESG) performance                                                                                                                                                                                                                                                                                                              |         |                                           |             |                             |                   |
| Social                                                                                                                                                                                                                                                                                                                                                                       |         |                                           |             |                             |                   |
| Quick Response manufacturing capacities have increased employment.                                                                                                                                                                                                                                                                                                           |         |                                           |             |                             |                   |

Table 17: The Foschini Group Sustainable Supply Chain Management Framework

### Rex Truform Clothing Group Limited

As the above cases mention, the aim of the research Rex Truform Clothing Group Limited was to establish as to whether there was a link between their financial results and their investment into sustainable supply chain management practices. These findings will also be compared to the criteria as proposed by Turker & Altuntas , 2014.

**Supply chain for risk and performance** – The Rex Truform Clothing Group has established a Social and Ethic Committee. “The role of this committee is to ensure that the company follows best practice measures when it comes to matters relating to social and economic development, the environment and health and safety, good corporate citizenship, consumer relationships and labour and employment regarding the company” (Rex Truform Clothing Company Limited, 2014, p. 44). Rex Truform have identified suppliers as one of their major stakeholders in their business operations and engage their suppliers in order to ensure a good relationship amongst the parties and to ensure a long mutually beneficial relationship whilst ensuring their suppliers maintain a high ethical standard. Rex Truform have identified that the ability to source appropriately priced merchandise timeously, of which failure would result in loss of profitability and turnover growth. “This is mitigated and monitored by continuously analysing supply chain processes (including key financial measures) with a view to identifying inefficiencies and thereby implementing improvements” (Rex Truform Clothing Company Limited, 2014, p. 43).

The group acknowledges directly through electricity, fuel and materials both consumed in its operations and indirectly through impacts associated with the production, use and end-of-life disposal of the products it sells. Rex Truform acknowledges that the impacts of initiatives have not been measured (Rex Truform Clothing Company Limited, 2014, p. 31). The report goes on to say that main area of fuel consumption relates to freight services, which is provided by third parties. Fuel management in respect thereof is the responsibility of the service provider.

**Supply Chain management for sustainable products** – Unfortunately, no information was made available in their report with regard to this topic. This is unfortunate and a result of only having access to the integrated reports of the organisations and not further insight.

|                                                                                                                                                                                                        |         |        |             |                            |                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------|-------------|----------------------------|-------------------|
| SCM for Sustainable Products                                                                                                                                                                           |         |        |             | Social and Ethic Committee | Management System |
| Product Lifecycle Assessment                                                                                                                                                                           |         |        |             |                            |                   |
| Non Applicable                                                                                                                                                                                         |         |        |             |                            |                   |
| 1) Improving Suppliers                                                                                                                                                                                 |         |        |             |                            |                   |
| Non Applicable                                                                                                                                                                                         |         |        |             |                            |                   |
| 2) Communicating with Suppliers                                                                                                                                                                        |         |        |             |                            |                   |
| Ensure a long mutually beneficial relationship whilst ensuring their suppliers maintain a high ethical standard.                                                                                       |         |        |             |                            |                   |
| 3) Criteria for suppliers                                                                                                                                                                              |         |        |             |                            |                   |
| Environmental                                                                                                                                                                                          |         | Social |             |                            |                   |
| Non Applicable                                                                                                                                                                                         |         |        |             |                            |                   |
| SCM for Risk and performance                                                                                                                                                                           |         |        |             |                            |                   |
| Supplier Assessment Plan                                                                                                                                                                               |         |        |             |                            |                   |
| Non Applicable                                                                                                                                                                                         |         |        |             |                            |                   |
| 1) Improving Supply Chain performance                                                                                                                                                                  |         |        |             |                            |                   |
| Dependancy                                                                                                                                                                                             | Quality | Speed  | Flexibility |                            |                   |
| Suppliers mitigated and monitored by continuously analysing supply chain processes (including key financial measures) with a view to identifying inefficiencies and thereby implementing improvements. |         |        |             |                            |                   |
| 2) Avoiding Risks                                                                                                                                                                                      |         |        |             |                            |                   |
| Economic                                                                                                                                                                                               |         |        |             |                            |                   |
| Suppliers mitigated and monitored by continuously analysing supply chain processes (including key financial measures) with a view to identifying inefficiencies and thereby implementing improvements. |         |        |             |                            |                   |
| Environmental                                                                                                                                                                                          |         |        |             |                            |                   |
| Responsibility of third party                                                                                                                                                                          |         |        |             |                            |                   |
| Social                                                                                                                                                                                                 |         |        |             |                            |                   |
| Non Applicable                                                                                                                                                                                         |         |        |             |                            |                   |

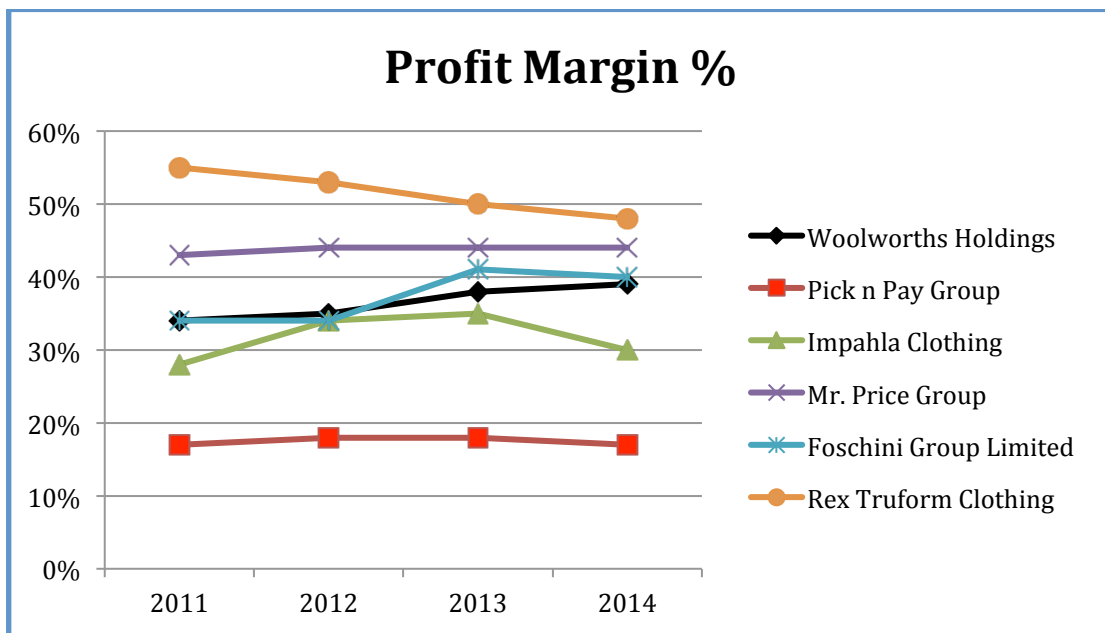
Table 18: Rex Truform Clothing Sustainable Supply Chain Management Framework

### Financial Ratios

Based on the information presented so far, it can be established that these firms all partake and display some elements or characteristics of sustainable supply chain management as presented by Turker and Altuntus, 2014. All organisations within the sample display aspects of sustainable supply chain management for sustainable products as well as for sustainable supply chain management for risk and performance. However, only Woolworths Holdings, the Pick n Pay Group and the Mr. Price Group seem to have a recognizable management system in place. This supports Handfield, Walton, Sroufe, 2002 as well as Melnyk, 2002. This could be attributed to the size of the companies as is the reasoning behind Hahn & Kühnen, 2013, but it is not established that this is in fact the reason.

As stated in the literature review, 'Organisations are faced with a wide range of topics on which they could report. Relevant topics are those that may reasonably be considered important for reflecting the organisation's economic, environmental and social impacts, or influencing the decisions of stakeholders, and, therefore, potentially merit inclusion in the report (Cappuyns, Vandenbulcke, & Ceulemans, 2015). To establish a clear picture of how the retail supply chain performs the dimensions of performance should include both financial performance and non-financial performance (Anand & Grover, 2015). For this report the following financial ratios were selected; Profit margin, operating margin, Earnings after tax margin, debt to equity ratio as well as the current ratio. These ratios were selected in order to help to understand each one of the company's unique financial positions and measure, monitor their performance relative to historical and external benchmarks, and adhere to guidelines as set out by the GRI (Global Reporting Initiative, 2014).

## Profit margin ratio



The profit margin (gross profit/ total revenue)( was selected because it is a profitability ratio and the researcher wanted to try to establish the financial security of the company. A low profit margin could indicate that the firm has suffered in sales, managing of its expenses, underpricing of their products as well as an indicator that the profitability of the firm is not very secure. BloombergBusiness believes that the profit margin and operating profit margin are the most important financial ratios or indicators of a organisations health (Hall, 2008). These ratios are also significant as they compare levels of cash resources with current liabilities as the measure of cash obligations (White, Sondhi, & Fried, 1997).

**Woolworths Holdings** – Based on the profit margin ratios of Woolworths Holdings as presented, Woolworths Holdings has grown steadily by 5% over the past four years to a profit margin percentage of 39%. This is a relatively high profit margin and could indicate that Woolworths has a good handle and control over their costs and expenses.

**Pick n Pay Group** – The profit margins presented for the Pick n Pay Group indicate a very different story than that of Woolworths Holdings. Over the past 4 years, Pick n Pay has managed to fluctuate between 17% and 18%. This could indicate that while business is stable, profitability is not in fact growing.

**Impahla Clothing** – The profit margins of Impahla clothing indicates that over the past 4 years, their profit margins were on the rise, however in 2014, their profit margin dropped by 5%. This could indicate that their sales decreased. However on examination of their income statement, their cost of sales increased dramatically in the 2014 period.

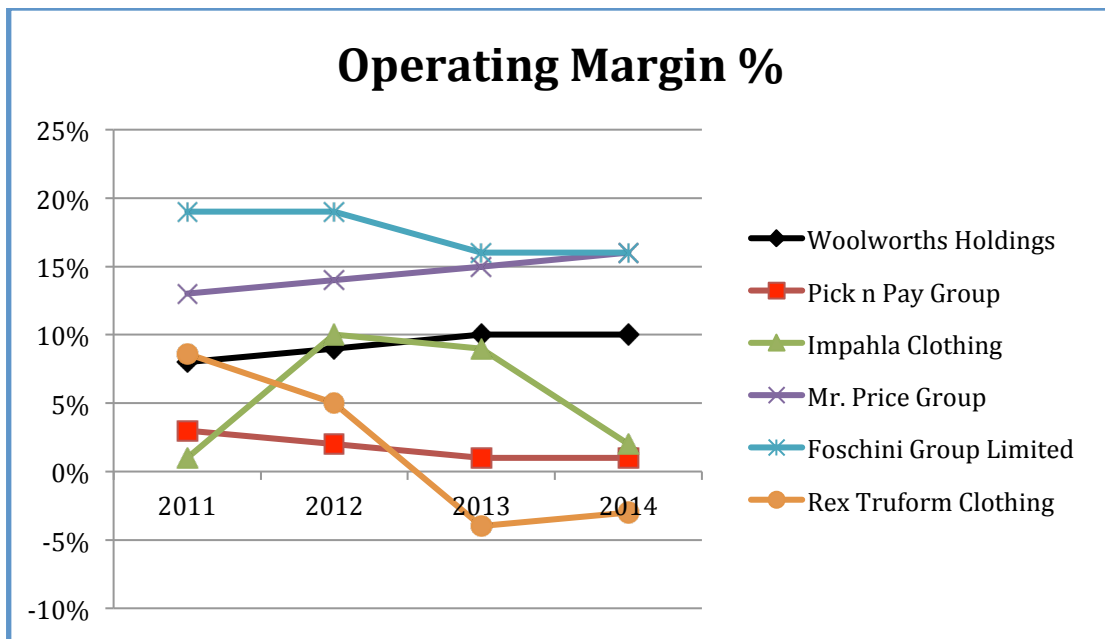
**Mr. Price Group** - The Profit Margin for the Mr. Price Group indicates that whilst stable at 44%, the company has not increased its profit margin in the 4-year period. This could potentially indicate a strong sustainable business that has control over its costs and expenses.

**The Foschini Group** – When we analyse the results of the Foschini Group and their profit margin % over the 4-year period, we notice that the Foschini Group has grown their profit margin by 6% to 40%. This indicates strong sales and expense management.

**Rex Truform Clothing** – On an analysis of Rex Truform's profit margin %, we notice that their profit margin has in fact decreased by 7%. This could indicate that the company needs to get control over their expenses and that they may have experienced a decrease in sales.

The profit margin is quite useful in this study because the sample is all part of the same industry and should have similar business models, however each company's results paint a contrasting story and further information is required in order to make a fair evaluation.

## Operating Profit ratio



The operating margin (operating income/ net sales) is a ratio that is used to determine a firm's pricing strategy as well as their overall operation efficiency. Operating margin is a measurement of what proportion of a company's revenue is left over after paying for variable costs of production such as wages, raw materials, etc. (Investopedia, 2015). However, this margin excludes the effects of investments (income from affiliates or asset sales), financing (interest expense) as well as tax position (White, Sondhi, & Fried, 1997). The researcher believes that this ratio would be important because it could help to determine how much companies were investing into more sustainable resources as well as the costs of production. A healthy operating margin is required for a company to be able to pay its fixed costs so it would follow that a company with a high operating profit margin would incur less financial risk.

**Woolworths Holdings** – Based on the Operating profit margins of Woolworths Holdings, Woolworths Holdings operating profit margin has increased overall by 2% in the period of 2011 up to and including 2014. This indicates that they are increasing their operating profit steadily and could mean the company is becoming more financially stable.

**Pick n Pay Group** – The Pick n Pay Group's operating profit margin has in fact decreased from 3% in 2011 to 1% in 2014. This could indicate that while their profit margin ratio has remained stable from 2011 to 2014; their

expenses on raw materials as well as their costs of goods could have increased. This indicates that Pick n Pay is not very financially stable.

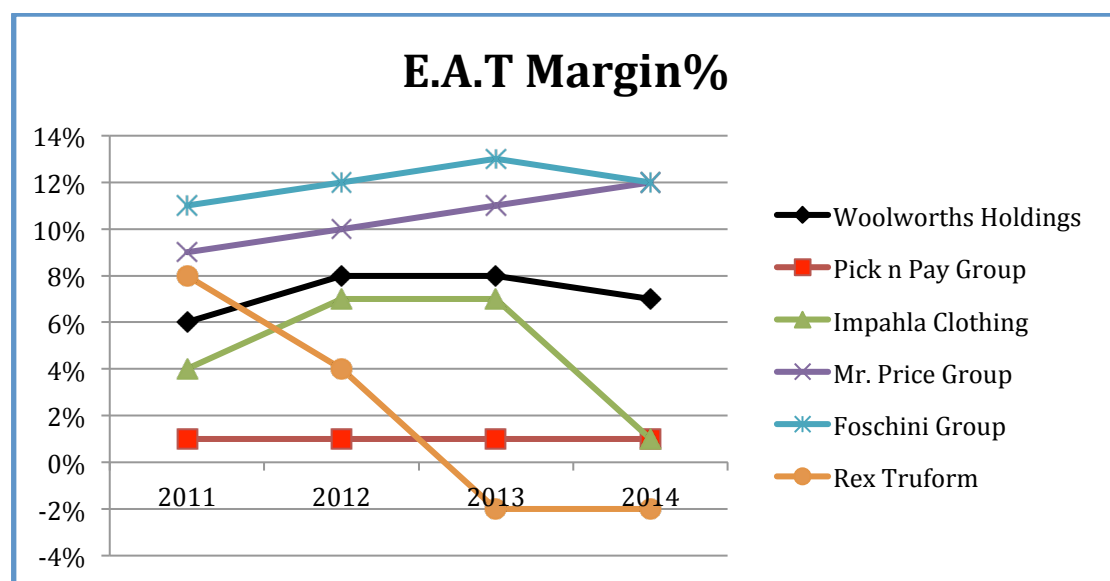
**Impahla Clothing** – Impahla Clothing’s operating profit margin started out on 1% in 2011, increased to 10% in 2012, decreased in 2013 to 9% and then in 2014 decreased further to 2%. However, this decrease is accounted for in their integrated report as they invested in extending their supply chain through vertical integration as well as the establishment of the Kit creator programme and product development division. However, that being established, Impahla clothing is not in a very financially secure position as it currently stands according to their reports.

**Mr. Price Group** – On examination of the Mr. Price Group operating margin, we can see that their margin has increased every year with an overall increase of 3% over the 4-year period. This could indicate that Mr. Price has a good pricing strategy and is able to pay all their operating costs.

**The Foschini Group** – The Foschini Group’s operating margin has declined over the 4 year time period by 3% overall. This indicates that their operating costs went up, which could be the result of an increase in variable costs of production.

**Rex Truform Clothing** – Rex Truform Clothing Limited experienced the worst decreases in operating margins. This is evident by the fact that based on the data; they are unable to pay for their fixed costs. This potentially indicates that Rex Truform Clothing Limited is not financially stable.

### Earnings after tax margin



The earnings after tax ratio (Net profit/ Revenue) are an important ratio to consider because it informs investors the percentage of income a company earns per rand of sales. As Hall (2008), emphasises the profit margin ratio, this ratio is important because it helps to establish how financially successful a company is after costs and sales have been taken into account.

**Woolworths Holdings** – In 2011, Woolworths Holdings had an E.A.T profit margin of 6%. This margin increased to 8% in 2012 and 2013 respectively and in 2014 decreased to 7%. This indicates that Woolworths Holdings is still in good financial standing, as they have remained consistent over the 4-year period.

**Pick n Pay Group** – Pick n Pay has remained stable at 1% during the 4-year period. While this is consistent as in the case of Woolworths Holdings, this indicates that Pick n Pay has a very low E.A.T margin. When this is compared with the decrease as shown in their operating profit margin, it shows that Pick n Pay may not be in a good financial standing.

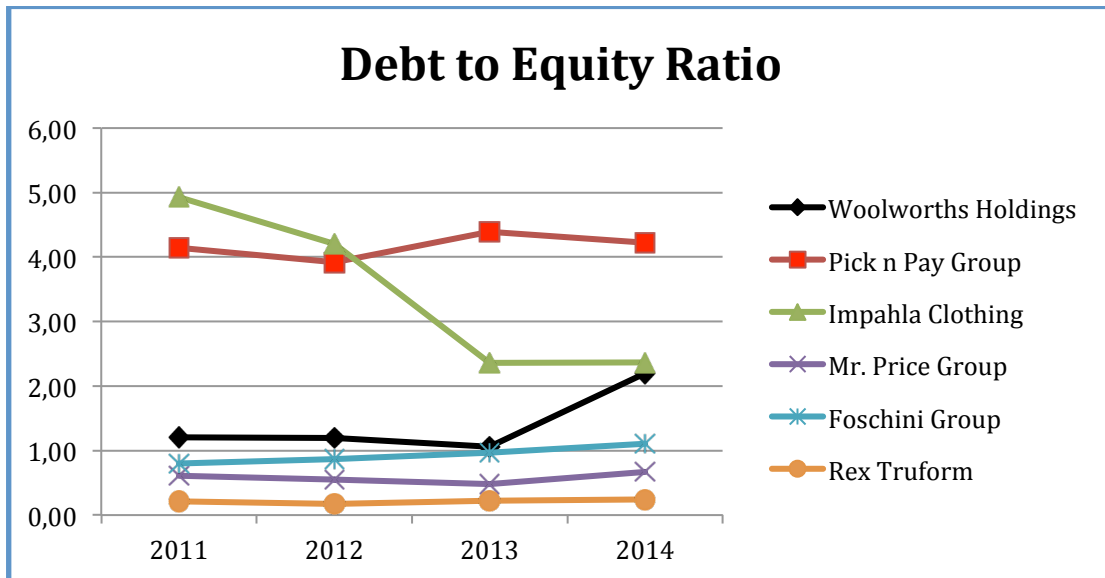
**Impahla Clothing** – Impahla Clothing started with a 4% E.A.T profit margin in 2011, which grew to 8% in 2012 and 2013. It has since decreased to 1% in 2014. As in the case with their operating profit margin, this margin could be the result of their investment into assets in 2014. However, this still places Impahla clothing under financial strain.

**Mr. Price Group** – In 2011, the Mr. Price Group had an E.A.T profit margin of 9%. This margin has since increased to 12% in the period of 2011 to 2014. This indicates that the Mr. Price Group has improved their E.A.T profit margin through an increase of sales while managing to control their cost of sales.

**The Foschini Group** – The Foschini Group has managed to maintain their E.A.T profit margin to within 1 % over the 4-year period and this indicates that they have increased their sales with the increase in cost of sales. This could indicate that the Foschini Group is financially sustainable in this regard.

**Rex Truform Clothing** – Once again, when it comes to E.A.T profit margins, Rex Truform has had the worst performance within the sample. In 2011, Rex Truform had an E.A.T profit margin of 8%. This has decreased by 10% in the 4-year period to a profit margin of -2% in 2014. This indicates that Rex Truform has made a loss in 2013 and 2014, which is evident from table 9.6 in the study.

## Debt to Equity ratio



The debt to equity ratio (Total liabilities/ Total equity) is an important ratio because it helps to establish and enable investors to understand the amount of financial advantage a company has. It indicates how much debt a company is using to finance their assets. This is of course relative to their equity. “Long term debt and solvency analysis evaluate the level of risk borne by a firm, changes over time, and risk relative to comparable investments” (White, et al., 1997, p. 162) This ratio is important for investors and for understanding a company’s financial standing because if a company has a high debt to equity ratio, it could indicate that a company could have potentially earned more returns without this additional financing. If the earning outweighs the debt cost, then this earning results in greater profits for shareholders. Alternatively, if the debt outweighs the returns on the debt, then shareholders could take a financial loss.

**Woolworths Holdings** – Woolworths Holding debt to equity ratio has grown from 1,21 in 2011 to 2,2 in 2014. This a large ratio and indicates that Woolworths Holding has been aggressive with financing their growth and that their financial risk is rather high.

**Pick n Pay Group** - An examination of the debt to equity ratio of the Pick n Pay Group shows that their debt to ratio is much higher than that of Woolworths Holdings. In 2011, Pick n Pay’s ratio was 4,14. This decreased to 3,92 in 2012 and then increased again in 2013 to 4,39. In 2014, their debt to equity ratio decreased to 4,22. These finding could indicate that the Pick n Pay Group has been using a large amount of debt to fund their operations and that the company is taking a high financial risk.

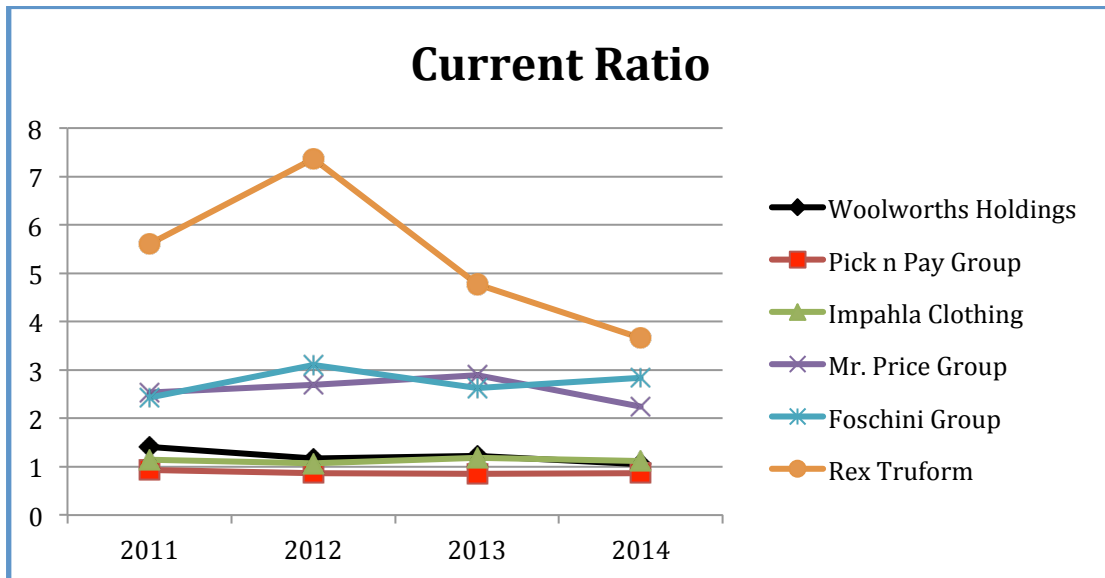
**Impahla Clothing** – Impahla Clothing also have a high debt to equity ratio when their results are examined. In 2011, their debt to equity ratio was 4,93. This decreased to 4,2 in 2012. In 2013, this ratio decreased further to 2,36 and in 2014 rose to 2,37. This indicates that in 2011, Impahla Clothing was using a large amount of debt to fund their operations but have improved this ratio by 2,56. This is a substantial improvement.

**Mr. Price Group** – In 2011, the Mr. Price Group had a debt to equity ratio of 0,61. This ratio decreased in 2012 to 0,55 and decreased again on top of that to 0,48 in 2013. In 2014, the Mr. Price Group had a debt to equity ratio of 0,67. The Mr. Price Group has a very low debt to equity ratio, which could indicate that their earnings will result in greater profits for shareholders as the majority of the business is funded through shareholders and investors. This suggests that the business is financially stable as there is little risk involved.

**The Foschini Group** – The Foschini Groups debt to equity ratio has risen steadily from 0,8 in 2011 to 1,11 in 2014. This indicates that the company has steadily taken on more debt to fund their business operations over the 4-year period. While their debt to equity ratio is still very low, it could indicate that the company is growing less financially stable.

**Rex Truform Clothing** – Rex Truform Clothing has a very low debt to equity ratio over the 4-year period for the study. In 2011, they reported a debt to equity ratio of 0,21. This ratio remained low and grew to 0,24 in 2014. This low level of debt to equity indicates that from a risk perspective, Rex Truform is sustainable. However, this could also indicate that the organisation is not financing to increase their operations. This is evident in table 9,6 where it can be seen that Rex Truform Clothing Limited's revenue has decreased while their cost of sales has in fact increased.

## Current Ratio



The current ratio (Current assets/ Current liabilities) is a liquidity ratio that measures a company's ability to pay short-term and long-term obligations (Investopedia, 2015). This ratio is important because it works with current assets and the ability of a firm to pay off their obligations immediately. This ratio is also known as the working capital ratio. This ratio can be used as a rough guideline to a company's financial health. The higher the ratio, the greater ability a company has to pay back their obligations with their assets. This essentially means that the asset value is higher than that of the liability value.

**Woolworths Holdings** – In 2011, Woolworths Holdings had a current ratio of 1.4. This ratio has since decreased to 1.05 in 2014. This indicates that while Woolworths Holdings current ratio has decreased, they are still able to meet all of their financial obligations.

**Pick n Pay Group** – Pick n Pays Current Ratio is very different to that of Woolworths Holdings. In 2011, Pick n Pay had a current ratio of 0.93. This has since decreased further to 0.87. This could indicate that the overall health of the Pick n Pay Group is not too good as at the time of the reports, they would not be able to pay back all their financial obligations.

**Impahla Clothing** – The Current Ratio of Impahla Clothing has remained relatively stable from 2011 where their ratio was 1.14. This ratio has decreased over the 4-year period to 1.12. This could indicate that Impahla Clothing is in a good financial position as they have the ability to pay back all of their obligations.

**Mr. Price Group** – In 2011, the Mr. Price Group reported a current ratio of 2,53. This ratio has since shrunk during the 4-year period to 2,24 in 2014. This indicates that the Mr. Price Group is able to meet all of their financial long term as well as short-term obligations. This also could indicate that the group is in good financial health.

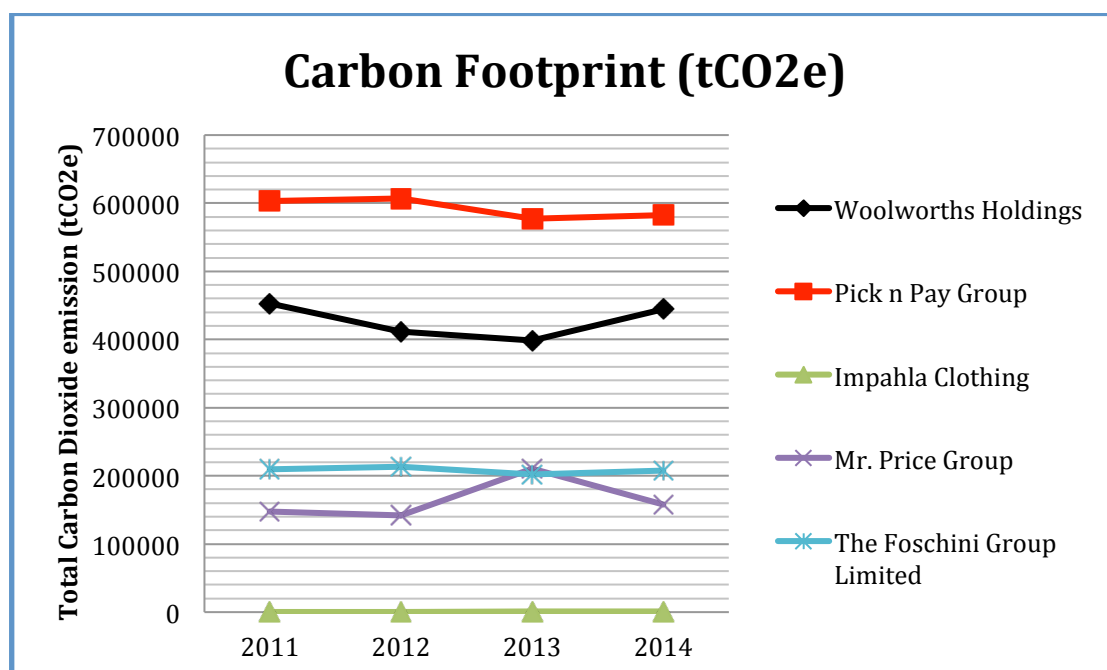
**The Foschini Group** – The Foschini Group had a current ratio of 2,43 in 2011. This ratio increased over the 4-year study period to 2,84 in 2014. This indicates that the Foschini Group is able to meet all of their short term and long-term financial obligations. However, it should be noted that while the Foschini Group is able to meet their obligations, other factors can affect the liquidity of the organisation such as debtor and creditor days and inventory turn over time. However, an acid test ratio was conducted to examine further and yielded a 1,99 ratio indicating the ability of the Foschini Group to pay back their obligations.

**Rex Truform Clothing** – Rex Truform reported a current ratio of 5,61 in 2011. This ratio has since decreased to 3,66 in 2014. This indicates that Rex Truform is able to meet all of their short term and long-term financial obligations. This was further verified through an acid ratio test for 2014, which resulted in an acid test ratio of 1,68, which indicates that Rex Truform is able to meet their financial obligations.

#### **Environmental ratios**

Sustainable Supply Chain Management requires a broadened approach of Supply Chain Management. It should emphasise economic, ecological and social aspects of business practices and theory (Svensson, 2007). As the social aspects of SSCM were discussed in proposition 1 and the financial aspects have just been discussed, it is only logical that environmental indicators should now be examined. The following environmental indicators were also selected to form part of this study to try and establish a connection between the financial results and the environmental results of the company: Total Carbon dioxide footprint, as well as the water use as measured by each organisation within the study sample.

## Total Carbon dioxide footprint



**Woolworths Holdings** – Woolworths Holdings reported the following information on their Carbon dioxide emissions, which, can be found, on table 3,5. In 2011, Woolworths Holdings reported a carbon footprint of 452 996,73 tCO<sub>2</sub>e. This number decreased in 2012 to 411 522,35. In 2013, Woolworths Holdings Carbon footprint decreased to 398 568 tCO<sub>2</sub>e but then in 2014, their carbon footprint increased to 444 249,8 tCO<sub>2</sub>e.

**Pick n Pay Group** – The Pick n Pay Group had the following Carbon footprint measurements for the periods of 2011 to 2014. In 2011, they had a Carbon footprint of 6027822 tCO<sub>2</sub>e. This changed in 2012, where, they reported a measurement of 607156 tCO<sub>2</sub>e. In 2013, Pick n Pay had a Carbon footprint of 577289 tCO<sub>2</sub>e. 2014 saw the Pick n Pay Group report a total Carbon footprint of 582518 tCO<sub>2</sub>e.

**Impahla Clothing** – Impahla clothing reported the following Carbon footprint measurements: In 2011, Impahla clothing reported a Carbon footprint of 237 tCO<sub>2</sub>e. In 2012, this decreased to 232 tCO<sub>2</sub>e. In 2013, Impahla Clothing reported a Carbon footprint that had grown to 550 tCO<sub>2</sub>e. This number grew again in 2014 to 759 tCO<sub>2</sub>e.

**Mr. Price Group** – In 2011, the Mr. Price Group reported a Carbon dioxide emission or footprint of 147592 tCO<sub>2</sub>e. This decreased in 2012 to 141485 tCO<sub>2</sub>e. In 2013, Mr. Price reported a massive rise in carbon dioxide

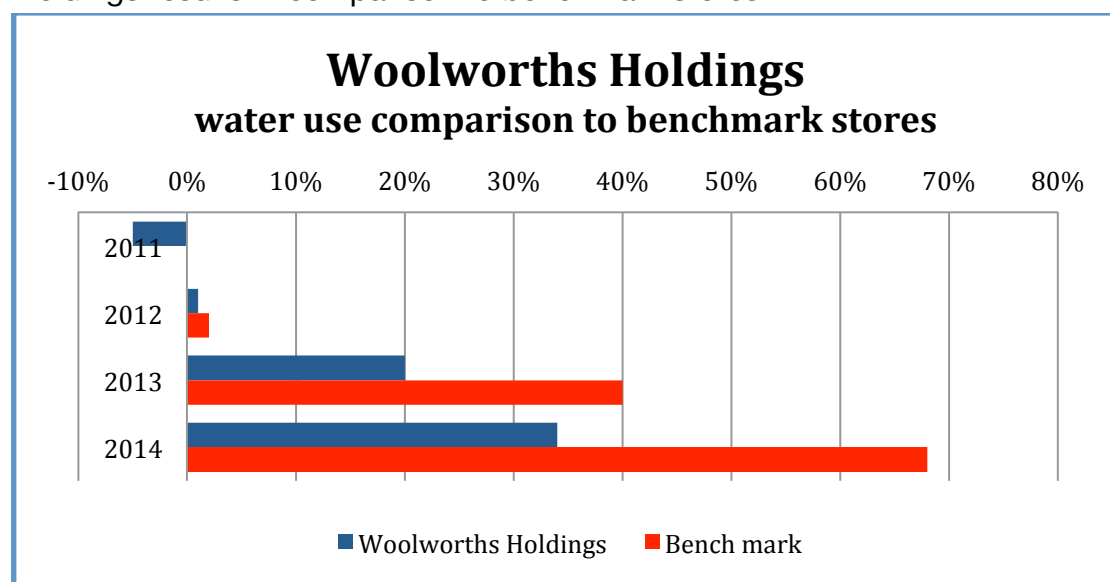
emissions to a level of 210786 tCO<sub>2</sub>e. This again decreased to 157639 tCO<sub>2</sub>e in 2014.

**The Foschini Group** – The Foschini Group has seen a steady decrease in their CO<sub>2</sub> emissions based on their integrated reports. In 2011, the Foschini Group reported a CO<sub>2</sub> emission of 209368 tCO<sub>2</sub>e. This increased to 213424 tCO<sub>2</sub>e in 2012. However, in 2013, they reported a decrease, which resulted in an emission count of 201837 tCO<sub>2</sub>e. This dropped further in 2014 to 207332 tCO<sub>2</sub>e.

**Rex Truform Clothing** – No information was made available in the data to indicate that Rex Truform Clothing Limited has reported any Carbon footprint data.

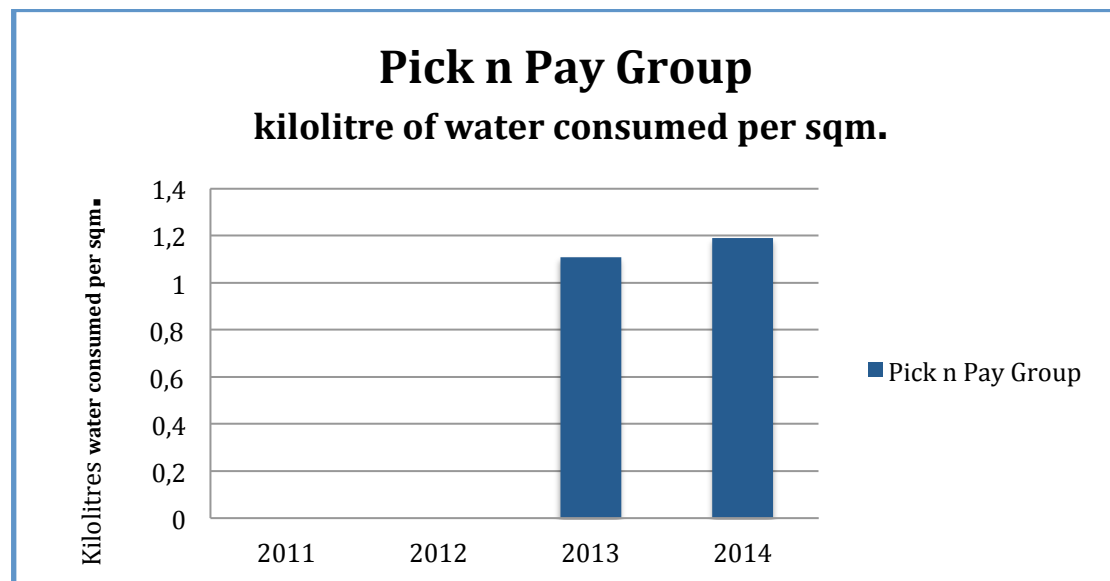
#### Water use as measured by company

**Woolworths Holdings** – Woolworths Holdings have measured their water use through the reduction in relative consumption from benchmark stores at Woolworths Holdings. In 2011, Woolworths had a water reading of -5% consumption which, shows that their water use went up in comparison to the benchmark that was set. In 2012, Woolworths had a relative consumption of 1%. In 2013, this number grew to 20% and continued to grow in 2014 to a relative consumption of 34%. The graph below illustrates Woolworths Holdings results in comparison to benchmark stores.

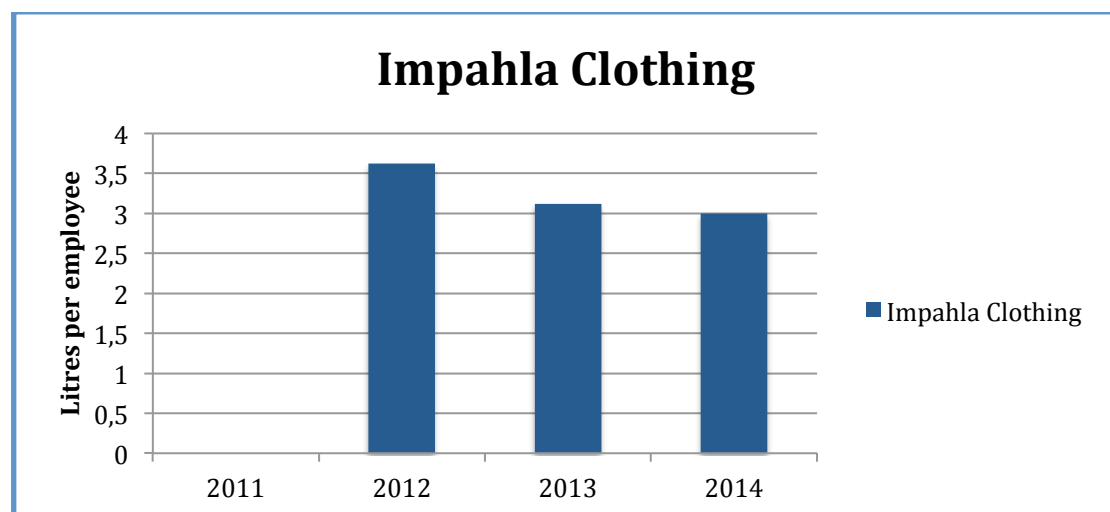


**Pick n Pay Group** – The Pick n Pay Group measured their water consumption through kiloliters' of water consumed per square meter. Unfortunately, no information was made available in Pick n Pay's integrated reports for the years 2011 and 2012. In 2013, Pick n Pay reported a kilolitre of water use per sqm to be 1,11 kilolitres. In 2014, they reported a water use per sqm of 1,19

kiloliters. The graph below helps to illustrate the Pick n Pay Groups water use.

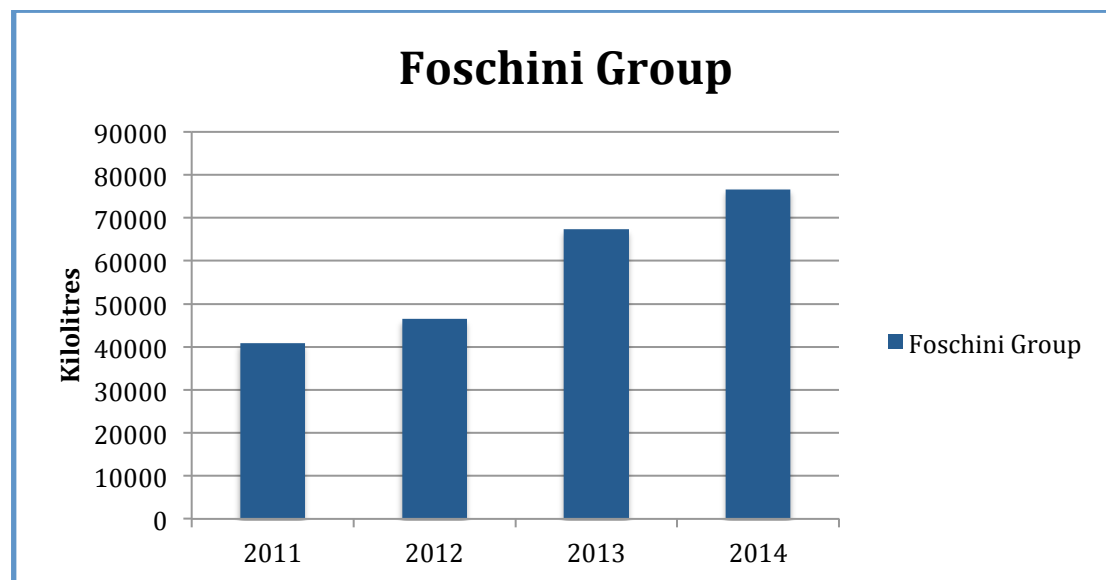


**Impahla Clothing** – Impahla Clothing measured their water use through water efficiency per employee (Litre). No information was made available in 2011. In 2012, Impahla Clothing had a water efficiency per employee of 3.62 litres. In 2013, Impahla Clothing had a water efficiency per employee of 3,12 litres per employee. In 2014, this water efficiency measurement decreased further to 3-litres per employee.



**Mr. Price Group** – No information was provided as to the water use of the Mr. Price Group.

**The Foschini Group** – The Foschini Group chose to measure their water consumption using kilolitres. In 2011, they reported a kilolitre use of 40830 KL. This increased in 2012 to 46449 KL. In 2013, the Foschini Group reported a water use of 67302 KL. In 2014, they reported a Kilolitre use of 76618 KL. The graph below illustrates their reporting on water use.



**Rex Truform Clothing** – Rex Truform Clothing Limited did not provide any data of this nature in their reports.

It should be noted that what is interesting is that all the organisations reported their water use through different means. This supports the literature by Cappuyns, Vandenbulcke, & Ceulemans, 2015. This literature claims that Organizations are faced with a wide range of topics on which they could report. The aim of the GRI therefore is to provide guidelines that organisations can report on.

### Conclusion for Proposition 2

Proposition 2 states, ‘Firms that partake and implement Sustainable Supply Chain Management will achieve higher economic performance in the long term than those firms that pursue only one or two of the three components of the triple bottom line’.

The first aim of the proposition was to examine and test, based on the integrated reports and supporting interviews, whether organisations within the sample implemented a Sustainable Supply Chain Management framework as set out by Turker & Altuntas, 2014. From the data collected, Woolworths Holdings, the Pick n Pay Group, Impahla Clothing and the Mr. Price Group all provided data and examples of business practices that

present and support all the characteristics of the SSCM framework provided by Turker & Altuntas, 2014. The Foschini Group showed compliance with certain aspects of SSCM but not enough data could be drawn. Rex Truform Clothing Limited did not meet the criteria of the framework.

From the financial results presented in the integrated reports and through a financial analysis of the organisations within the sample, only Woolworths Holdings Limited and the Mr. Price Group showed overall improvement in their financial results including Market Capitalisation. It was also found through proposition 1 that Woolworths Holdings and the Mr. Price Group increased their social capital spend and there seemed to be a correlation between improved social capital and economic improvement. Woolworths Holdings and the Mr. Price Group incorporate SSCM as defined by Turker & Altuntas, 2014. This SSCM framework incorporates and addresses all three pillars of sustainability or the triple bottom line (Rodgers & Carter, 2008). Therefore, it can be said that Woolworths Holdings and the Mr. Price Group partake and implement sustainable supply chain management, and have in fact achieved higher economic performances than firms who only pursue one or two of the three components of the triple bottom line. However, while these organisations seem to support proposition two, the Pick n Pay Group also incorporates SSCM but their Market Capitalisation has decreased which contradicts proposition 2.

Based on the evidence presented as well as the findings within this report, because the sample that was able to participate in this study was too small to give a fair representation of the entire Retail Clothing industry of South Africa, proposition 2 cannot be extrapolated to the whole industry at this time. The study is also limited because sustainability needs to be measured across all the levels of the organisation and requires further analysis that can only be gathered through an 'insider' perspective. While based on the evidence, there can be little disagreement as to the benefits associated with incorporating sustainable supply chain management practices into business operations, it is as yet hard to evaluate and establish any long term, tangible and measureable variables from sustainable supply chain management practices. It is for this reason that the proposition, 'Firms that partake and implement Sustainable Supply Chain Management will achieve higher economic performance in the long term than those firms that pursue only one or two of the three components of the triple bottom line' cannot be validated without further research.

## 7. CONCLUSION AND RECOMMENDATIONS

### Introduction

This chapter will conclude the study of the relationship between sustainable supply chain management and long-term economic success in the retail clothing industry of South Africa between the periods of 2011 to 2014. From the literature and findings, it can be agreed that sustainability is an important topic for most organisations, especially the retail clothing industry (Schneider & Wallenburg, 2012). “Previously, logistics and supply chain management examined topics such as the environment, safety, and human rights in a standalone fashion, without consideration of the potential interrelationships among these and other aspects of social responsibility” (Carter & Jennings, 2002). This quest for sustainability is already beginning to transform the competitive landscape, which will force companies to change how they think about products, technologies, processes and business models (Longoni & Cagliano, 2015). This is largely due to the fact that consumers now have a growing awareness of organisations and how they operate in terms of the triple bottom line, namely, economic, environmental as well as social, and what affects these elements might have on business activities. As such, the number of organisations contemplating the integration of environmental practices into their strategic policies and daily operations is continuously increasing. Because of the extended supply chains in modern business operations, sustainable supply chain management (SSCM) has started to attract increasing attention from both academics and practitioners in recent years (Turker & Altuntas, 2014). The aim of this study was to test organisations within the study and see if they implement a SSCM framework as presented by Turker & Altuntas, 2014, and if this links to long-term economic success. This study proved very informative although the results were not as expected.

### Conclusions of the study

Based on the research of this study and from the results and findings, Sustainable Supply Chain Management is becoming an increasingly recognised and adopted strategy for organisations within the retail clothing industry. All the organisations within the sample showed evidence of sustainability as a concern of their business strategy and practice. However, although they all claimed that sustainability was an important factor when considering their supply chain and business processes, only two of the organisations within the sample displayed significant investment into all three pillars of sustainability, as well as displaying evidence of a fully adopted SSCM as defined by Turker & Altuntas, 2014, and growing the economic side

of the business. This economic success was measured according to market capitalisation and numerous financial ratios.

Of the sample in the study, only Woolworths Holdings Limited and the Mr. Price Group improved year-end on year-end financially, based on profit margin ratios, operational ratios, earnings after tax ratios, debt to equity ratios and current ratios as well as market capitalisation. These financial indicators were based on guidelines established by the Global Reporting Initiative, 2014. These financial indicators were also selected for this study, as it was believed that this would help to give an overall financial snapshot analysis of the financial position of companies within the organisation for the period of study.

Woolworths Holdings and the Mr. Price Group were the only two organisations that displayed and presented increased evidence of investment into social capital. The social indicators that were selected included: number of employees, corporate social initiative spend, investment into people, training & development, B-BBEE rating, as well as work related accidents. These social indicators were selected, as they were the only indicators that could be quantified within this study.

Environmental indicators included carbon dioxide emissions as well as water footprints by each organisation. While there are many other environmental indicators that could be used, only these two were consistent across the entire sample. These indicators are considered important for this study because in the retail clothing industry, water use and carbon dioxide emissions could be seen as energy intensive practices that have the greatest potential to offset costs. Examples of where this has occurred include Dupont, Novartis and 3M. Enhanced efficiencies in water and energy usage over the years have led to a cost reduction of \$2 billion at DuPont, \$50 million at Novartis, and \$82 million at 3M. In addition, the greenhouse gas emissions went down by 66% at DuPont ( Chakravarty, 2014).

Having examined the findings and results, there is a rationale behind the notion that improved sustainable supply chain management does lead to improved economic sustainability and returns. However the propositions 1 and 2 could not however be validated at this time for the study. The reasons behind this are that first and foremost, the study is simply too small to give a fair representation of the entire supply chain industry for the retail clothing industry of South Africa. This was pointed out in the research methodology as a limitation of the study and as such, the convergent validity and reliability is not efficient to validate both propositions 1 and 2.

## Recommendations

It was hoped that this study would be significant in that it was hoped the results would help to provide guidance and financial incentives for management and other important parties involved in the supply chain of the retail clothing industry to adopt sustainable supply chain management practices into their business strategies.

It is evident that there is a connection between sustainable business practices and financial sustainability in the retail clothing industry and therefore managers and other decision makers should continue to conduct research into their own operations and sustainable business practices. Research suggests that through the incorporation of sustainable business, organisations can gain a competitive advantage, reduce their environmental impact, and improve supplier and supply chain efficiencies through responsible triple bottom line sustainable practices. Through the incorporation of these sustainable practices, organisations reduce their risk of environmental fines, economic sanctions and wasted resources and capital. Social capital has also been identified as a major opportunity for organisations to invest in (Mundull, 2015). Investments into training and people development can result in cost saving, employee satisfaction and a positive image in regards to consumer awareness.

Based on these findings and concepts, it is recommended that organisations should continue to adapt or incorporate sustainable supply chain management into their organisations and supply chain strategies. This is based off the findings of a positive relationship between investment into social capital and market capitalisation as well as stakeholder perception.

## Suggestions for further research

Limitations of this research included firstly that the sample was too small to give fair representation for the findings of the retail clothing industry of South Africa. A suggestion for further research would be to increase the scope of the study to include more organisations into the study to try to improve the reliability and validity of the study. Due to the difficulty in obtaining

participation from companies in the clothing sector, it is recommended that this could be done across different industries and sectors of the economy in order to gather a larger sample while also testing to see the different levels of sustainability incorporated within each industry. The study also found that the sustainable supply chain management framework as presented by Turker & Altuntas, 2014, was limited in that the results found could only be based on data collected through integrated reports and willing participants of the study. This means that the results could potentially be limited. This could be

remedied through more comprehensive research into one particular organisation and through unrestricted access into all information privy to that particular organisation. This would be a useful study because the financial results of some of the organisations were grouped with other aspects of the business such as food products and financial services such as in the case of Woolworths Holdings Limited. The GRI sustainability framework also found the metrics chosen for this framework were not designed to primarily measure and address the supply chain context of an organisation in particular. This suggests that further research could be developed into identifying metrics that could be measured that address only the supply chain context and are not influenced by outside business processes.

Sustainable supply chain management comprises multiple stakeholders and entities but should always emphasize economic, ecological and social aspects of business practices and theory (Svensson, 2007). Therefore, because of the sheer size of the supply chain, the research possibilities are endless. In summation, based on this study, this researcher in particular suggests the following research suggestions:

#### Research into multiple levels of supply chain processes

*This could be accomplished through identifying key processes involved along a supply chain as well as research into multiple stakeholders across the entire supply chain and not solely the focal organization.*

#### Continued research into a larger sample

*A larger sample would allow data to be more statistically reliable. However, this study would be limited in the South African context as the market size is small to begin with.*

#### More comprehensive research into one organisation

*This would be beneficial, as it would allow the study to be more focused. However as found in the study, the researcher found it extremely difficult to obtain inside access and information from the sample.*

#### Research into development of particular supply chain metrics

*As it stands, numerous metrics cover all aspects of supply chain measurement depending on the industry as no two supply chains are the same. Research and development into metrics that could be applied across multiple industries and supply chains could prove beneficial.*

## 8. REFERENCES

- Ageron, B., Gunasekaran, A., & Spalanzani, A. (2012). Sustainable supply management: An empirical study. *International Journal of Production Economics*, 168-182.
- Ahi, P., & Searcy, C. (2013). A comparative literature analysis of definitions for green and sustainable supply chain management. *Journal of Cleaner Production*, 52, 329 - 341.
- Ahi, P., & Searcy, C. (2015). An analysis of metrics used to measure performance in green and sustainable supply chains. *Journal of Cleaner Production*, 86, 360-377.
- Al-Mudimigh, A. S., Zairi, M., & Ahmed, A. M. (2004). Extending the concept of supply chain: The effective management of value chains. *International Journal of Production Economics*, 309-320.
- Al-Mudimigh, A. S., Zairi, M., & Ahmed, A. M. (2004). Extending the concept of supply chain: The effective management of value chains. *International Journal of Production Economics*, 309-320.
- AL., E. &. (1999). Brand Equity, Consumer Learning and Choice. *Marketing Letters*, Vol 10, No 3, 301-318.
- Anand, N., & Grover, N. (2015). Measuring retail supply chain performance. *Benchmarking: An International Journal*, 22, 135-166.
- Anderson, D. R. (2006). The Critical Importance of Sustainability Risk Management. *Risk Management*, 53 (4).
- Bansal, P., & Roth, K. (2000). Why companies go green: a model of ecological responsiveness. *Academy of Management Journal*, 43 (4), 71–736.
- Bansal, T. (2010). *Network for Business Sustainability*. Retrieved 10 7, 15, from [http://nbs.net/wp-content/uploads/Primer\\_Business\\_Sustainability.pdf](http://nbs.net/wp-content/uploads/Primer_Business_Sustainability.pdf)
- Berns, M., Townend, A., Khayat, Z., Balagopal, B., Reeves, M., Hopkins, M., et al. (2009). The business of sustainability. *MIT Sloan Management Review*, 1-82.

Brundtland, G. H. (1987). *Report of the World Commission on environment and development: "our common future."* United Nations.

Bryman, A. (2012). *Social research methods* (4th Edition ed.). Oxford: Oxford university press.

Bush, S R, Oosterveer, P, Bailey, M, et al. (2015) Sustainability governance of chains and networks: a review and future outlook. *Journal of Cleaner Production*, 107, 8-19.

Calder, B. J., Phillips, L. W., & Tybout, A. M. (1982). The Concept of External Validity. *Journal of Consumer Research, Inc.* , 240-244.

Cao, M. &. (2011). Supply chain collaboration: Impact on collaborative advantage and firm performance. *Journal of Operations Management* , 29 (3), 163-180.

Cao, M., & Zhang, Q. (2011). Supply chain collaboration: Impact on collaborative advantage and firm performance. *Journal of Operations Management*, 29(3), 163-180.

Cappuyns, V., Vandenbulcke, C., & Ceulemans, K. (2015). Economic and Environmental Performance Indicators in Belgian GRI Reports. *Environmental Management and Sustainable Development*, 4, 206-227.

Carter, C. R. (2005). Purchasing social responsibility and firm performance The key mediating roles of organizational learning and supplier performance. *International Journal of Physical Distribution & Logistics Management*, 35 (3), 177-194.

Carter, C. R., & Jennings, M. M. (2002). Logistics social responsibility: An integrative framework. *Journal of business logistics*, 145-180.

Carter, C. R., & Rodgers, D. S. (2008). A framework of sustainable supply chain management: moving toward new theory. *International Journal of Physical Distribution & Logistics Management*, 38 (5), 360-387.

Chakravarty, A. K. (2014). Sustainable Supply Chains. In A. K. Chakravarty, *Supply Chain Transformation* (pp. 273-305). Berlin: Springer Berlin Heidelberg.

Ciliberti, F., Pontrandolfo, P., & Scozzi, B. (2008). Investigating corporate social responsibility in supply chains: a SME perspective. *Journal of Cleaner Production*, 16, 1579–1588.

Corbett, C. J., & Klassen, R. D. (2006). Extending the horizons: environmental excellence as key to improving operations. *Manufacturing and Service Operations Management*, 8, 5–22.

Darnall, N., (2006). Why firms mandate ISO 14001 certification. *Business & Society* 45 (3), 354–381.

de Britoa, M. P., Carbone, V., & Blanquart,, C. M. (2008). Towards a sustainable fashion retail supply chain in Europe: Organisation and performance. *International Journal of Production Economics*, 534–553.

Eisenhardt, K. M. (1989). Building theory from case study research. *Academy of Management Review*, 14, 532-550.

Eng, T. Y. (2005). The influence of a firm's cross-functional orientation on supply chain performance. *Journal of Supply Chain Management*, 41, 4-16.

Ergon Associates Ltd. (2006). *BCI scoping research on labour and social issues in global cotton cultivation*. BCI steering committee, London.

Foschini Group. (2011). *Foschini Group Integrated Annual report*. The Foschini Group.

Foschini Group. (2012). *Foschini Group Integrated Annual report*. The Foschini Group.

Foschini Group. (2013). *Foschini Group Integrated Annual report*. The Foschini Group.

Foschini Group. (2014). *Foschini Group Integrated Annual report*. The Foschini Group.

Gimenez, C., Sierra, V., & Rodon, J. (2012). Sustainable operations: Their impact on the triple bottom line. *International Journal of Production Economics*, 140, 149-159.

Giunipero, L. C., Hooker, R. E., & Denslow, D. (2012). Purchasing and supply management sustainability: Drivers and barriers. *Journal of Purchasing & Supply Management*, 18, 258-269.

Global Reporting Initiative. (2014). G4 Sustainability Reporting Guidelines. 1-269.

Golicic , S. L., & Smith, C. D. (2013). A meta-analysis of environmentally sustainable supply chain management practices and firm performance. *Sustainable SCM Practices and Performance* , 78-95.

Govindan, K., Azevedo, S. G., Carvalho, H., & Cruz-Machado, V. (2015). Lean, green and resilient practices influence on supply chain performance: interpretive structural modeling approach. *International Journal of Environmental Science and Technology*, 12, 15-34.

Haddock, J. (2005). Consumer influence on internet - based corporate communication of environmental activities: the UK food sector. *British Food Journal*, 107, 792-805.

Hahn, R., & Kühnen, M. (2013). Determinants of sustainability reporting: a review of results, trends, theory, and opportunities in an expanding field of research. *Journal of Cleaner Production*, 59, 5-21.

Hall, D. (2008, August 21). *Five ways to increase profit margins*. Retrieved December 30, 2015, from Bloomberg Business: [www.bloomberg.com](http://www.bloomberg.com)

Handfield, R., Walton, S. V., Sroufe, R., & Melnyk, S. (2002). Applying environmental criteria to supplier assessment: A study in the application of the Analytical Hierarchy Process. *European Journal of Operational Research*, 141 (1), 70-87.

Haniffa, R., & Cooke, T. E. (2005). The impact of culture and governance on corporate social reporting. *Journal of Accounting and Public Policy*, 24, 391-430.

Harland, C. (2002). The purchasing strategy process. In: Day J,. In Gower (Ed.), *Gower handbook of purchasing management* (3 ed., pp. 23-36). Aldershot.

Hart, S. (1995). A natural resource based view of the firm. *Academy of Management Review*, 20 (4), 986-1014.

Hassini, E., Surti, C., & Searcy, C. (2012). A literature review and a case study of sustainable supply chains with a focus on metrics. *International Journal of Production Economics*, 140, 69-82.

Hoffman, A. (2008). *From Heresy to Dogma*. San Francisco, CA: New Lexington Press.

Hutchins, M. J., & Sutherland, J. W. (2008). An exploration of measures of social sustainability and their application to supply chain decisions. *Journal of Cleaner Production*, 16, 1688–1698.

Impahla Clothing. (2011). *Integrated Annual report*. Impahla Clothing.

Impahla Clothing. (2012). *Integrated Annual report*. Impahla Clothing.

Impahla Clothing. (2013). *Integrated Annual report*. Impahla Clothing.

Impahla Clothing. (2014). *Integrated Annual report*. Impahla Clothing.

Institute of Directors Southern Africa. (2009). *King Report on Corporate Governance in SA*. Retrieved 2016, from institute of Directors Southern Africa: <http://www.iodsa.co.za/?kingIII>

Investopedia. (2015, September 11). *Operating Margin Definition*. Retrieved September 11, 2015, from Investopedia: <http://www.investopedia.com/terms/o/operatingmargin.asp>

Investopedia. (2015, September 14). *Current Ratio Definition*. Retrieved September 14, 2015, from [www.investopedia.com](http://www.investopedia.com/terms/c/currentratio.asp): <http://www.investopedia.com/terms/c/currentratio.asp>

Jick, T. D. (1979). Mixing Qualitative and Quantitative Methods: Triangulation in Action. *Administrative Science Quarterly*, 24, 602-611.

Johannesburg Stock Exchange. (2014). *SRI Index Background and Criteria*. Retrieved 2016, from JSE: <https://www.jse.co.za/content/JSERulesPoliciesandRegulationItems/Background%20and%20Criteria%202014.pdf>

Journal of Cleaner Production. (2008). Sustainability and supply chain management e An introduction to the special issue. *Journal of Cleaner Production*, 16, 1545 - 1551.

Koplin, J., Seuring, S., & Mesterharm, M. (2006). Incorporating sustainability into supply management in the automotive industry—the case of the Volkswagen AG. *Journal of Cleaner Production*, 15 ((11-12)), 1053–1062.

KPMG. (2011, July). Issues Monitor: Sharing Knowledge on Topical Issues in Retail Industry. 10. Amstelveen: KPMG.

Lamberton, G. (2000). Accounting for sustainable development – a case study of city farm. *Critical Perspectives on Accounting*, 11, 583-605.

Lee, J. W., Kim, J. M., & Kim, J. E. (2016). Antecedents of Adopting Corporate Environmental Responsibility and Green Practices. *Journal of Business Ethics*, 1-13.

Lee, S. (2015). The effects of green supply chain management on the supplier's performance Abstract through social capital accumulation. *Supply Chain Management: An International Journal*, 20 (1), 42 - 55.

Li, Y., Zhao, X., Shi, D., & Li, X. (2014). Governance of sustainable supply chains in the fast fashion industry. *European management Journal*, 823-836.

Linton, J. D., & Jayaraman, V. (2005). A conceptual framework for product life extension. *International Journal of Production Research*, 43, 1807–1829.

Linton, J. D., Klassen, R., & Jayaraman, V. (2007). Sustainable supply chains: An introduction. *Journal of Operations Management*, 1075–1082.

Linton, J., Klassen, R., & Jayaraman, V. (2007). Sustainable supply chains: An introduction. *Journal of Operations Management*, 25, 1075–1082.

Longoni, A., & Cagliano, R. (2015). Environmental and social sustainability priorities. *International Journal of Operations & Production Management*, 35, 216-245.

Mabunda, M. (2015, February 10). Woolworths Holdings sustainable supply chain management interview. (G. Whyte, Interviewer)

Markley, M., & Davis, L. (2007). Exploring future competitive advantage through sustainable supply chains. *International Journal of Physical Distribution & Logistics Management*, 763 - 774.

McElroy, M. W., & van Engelen, J. M. (2012). Corporate Sustainability Management: The Art and Science of Managing non-Financial Performance. *Earthscan*.

Michaelis, M., & Coates, J. F. (1994). Creating integrated performance systems: the business of the future. *Technology Analysis & Strategic Management*, 2, 245–250.

MIn, H., & Kim, I. (2012). Green supply chain research: past, present, and future. *Logistics research* , 39-47.

Min, H., & Zhou, G. (2002). Supply chain modeling: past, present and future. *Computers & Industrial Engineering*, 231-249.

Mohammad, N. (2015, March 26). Woolworths Holding sustainable supply chain management interview 2. (G. Whyte, Interviewer)

Montiel, I., & Delgado-Ceballos, J. (2014). Defining and Measuring Corporate Sustainability: Are We There Yet? *Organization & Environment*, 27, 113–139.

Mr Price Group limited. (2011). *Integrated Annual report. Mr Price Group Limited.*

Mr Price Group limited. (2012). *Integrated Annual report. Mr Price Group Limited.*

Mr Price Group limited. (2013). *Integrated Annual report. Mr Price Group Limited.*

Mr Price Group limited. (2014). *Integrated Annual report. Mr Price Group Limited.*

Muller, M., & Seuring, S. (2008). From a literature review to a conceptual framework for sustainable supply chain management. *Journal of Cleaner Production*, 16, 1699–1710.

Mundull, R. (2015, May 8). Pick n Pay Group sustainable supply chain management interview 3. (G. Whyte, Interviewer)

Payman, A., & Searcy, C. (2015). An analysis of metrics used to measure performance in green and sustainable supply chains. *Journal of Cleaner Production*, 86, 360-377.

Pick n Pay Group. (2013). *Pick n Pay sustainable living report.* Pick n Pay Group.

Pick n Pay. (2011). *Integrated Annual report.* Pick n Pay.

Pick n Pay. (2012). *Integrated Annual report.* Pick n Pay.

Pick n Pay. (2013). *Integrated Annual report.* Pick n Pay.

Pick n Pay. (2014). *Integrated annual report*. Pick n Pay.

Research Methods Knowledge Base. (2006, 10 20). *Inferential statistics*. Retrieved 10 16, 2015, from Research Methods Knowledge Base: <http://www.socialresearchmethods.net/kb/statinf.php>

Rex Truform Clothing Company Limited. (2011). *Rex Truform Clothing Company Limited Integrated Annual report*.

Rex Truform Clothing Company Limited. (2012). *Rex Truform Clothing Company Limited Integrated Annual report*.

Rex Truform Clothing Company Limited. (2013). *Rex Truform Clothing Company Limited Integrated Annual report*.

Rex Truform Clothing Company Limited. (2014). *Rex Truform Clothing Company Limited Integrated Annual report*.

Rodgers, D. S., & Carter, C. R. (2008). A framework of sustainable supply chain management: moving toward new theory. *International Journal of Physical Distribution & Logistics Management*, 38 (5), 360-387.

Sarkis, J. (2003). A strategic decision framework for green supply chain management. *Journal of Cleaner Production*, 11, 397–409.

Schneider, L., & Wallenburg, C. M. (2012). Implementing sustainable sourcing—Does purchasing need to change? *Journal of Purchasing & Supply Management*, 18, 243–257.

Sen, A. (2008). The US fashion industry: A supply chain review. *International Journal of Production Economics*, 114, 571–593.

Seuring, S. (2012). A Review of Modeling Approaches for Sustainable Supply Chain Management. *ResearchGate*, 1-38.

Seuring, S. (2013). A review of modeling approaches for sustainable supply chain management . *Decision Support Sytems* , 1513-1520.

Seuring, S. (2013). A Review of Modeling Approaches for Sustainable Supply Chain Management. *Decision Support Systems*, 1513 -1520.

Seuring, S. A. (2008). Assessing the rigor of case study research in supply chain management. *Supply Chain Management: An International Journal*, 13, 128–137.

Seuring, S., & Gold, S. (2013). Sustainability management beyond corporate boundaries: from stakeholders to performance. *Journal of Cleaner Production*, 56, 1-6.

Seuring, S., & Muller, M. (2007). Integrated chain management in Germany identifying schools of thought based on a literature review. *Journal of Cleaner Production*, 15, 699-710.

Seuring, S., & Muller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. *Journal of cleaner Production*, 16, 1699–1710.

Shih, L. H. (2001). Reverse logistics system planning for recycling electrical appliances and computers in Taiwan. *Resource Conservation and Recycling*, 32, 55–72.

Slawinski, N., & Bansal, P. (2010). Short on time: managing the time paradox in business sustainability. *Academy of Management Best Papers Proceedings*.

Stock, J. R., & Boyer, S. L. (2009). Developing a consensus definition of supply chain management: a qualitative study. *International Journal of Physical Distribution & Logistics Management*, 39, 690 - 711.

Stuart, I., McCutcheon, D., Handfield, R., McLachlin, R., & Samson, D. (2002). Effective case research in operations management: a process perspective. *Journal of Operations Management*, 20, 419-433.

Svensson, G. (2007). Aspects of sustainable supply chain management (SSCM): conceptual framework and empirical example. *Supply Chain Management: An International Journal*, 12, 262 - 266.

Tang, C. S. (2006). Robust strategies for mitigating supply chain disruptions. *International Journal of Logistics Research and Applications: A Leading Journal of Supply Chain Management*, 9 (1), 33-45.

Tang, O., & Nurmaya Musa, S. (2010). Identifying risk issues and research advancements in supply chain risk management. *International Journal of Production Economics*, 133, 25-34.

The Foschini Group. (2014, 11 26). *Supply Chain and Human Rights Statement*. Retrieved 10 5, 2015, from The Foschini Group:

<http://www.tfglimited.co.za/Sustainability/Supply%20Chain%20and%20Human%20Rights%20Statement%20/>

The Foschini Group. (2014). *Sustainability Overview*. The Foschini Group.  
The Institute of Directors in Southern Africa. (2009). *King code of governance for South Africa 2009*. The Institute of Directors in Southern Africa.

The Open University. (n.d.). 6 Methods of data collection and analysis. *PDF*. USA: The Open University.

Tice, J., Ahouse, L., & Larson, T. (2005). Lean production and EMSs: aligning environmental management with business priorities. *Environmental Quality Management*, 15, 1-12.

Tsai, W., & Ghosal, S. (1998). Social capital and value creation: the role of intrafirm networks. *Academy of management Journal*, 41 (4), 464-476.

Tsoufias, G., & Pappis, C. (2008). A model for supply chains environmental performance analysis and decision-making. *Journal of Cleaner Production*, 16, 1647–1657.

Turker, D., & Altuntas, D. (2014). Sustainable supply chain management in the fast fashion industry: An analysis of corporate reports. *European Management Journal*, 32, 837–849.

United Nations. (1992). United Nations Conference on Environment & Development AGENDA 21. *United Nations Sustainable Development*. Rio de Janerio: United Nations.

Vachon, S. (2012). Technological Capacity and Environmental Performance: A Research Note Using Country Level Data . *Journal of Operations and Supply Chain management* , 21-28.

Vachon, S., & Klassen, R. D. (2006). Extending green practices across the supply chain. *International Journal of Operations & Production Management*, 26 (7), 795 - 821.

Vachon, S., & Mao, Z. (2008). Linking supply chain strength to sustainable development: a country-level analysis. *Journal of Cleaner Production*, 16, 1552–1560.

Waddock, S. A., & Graves, S. B. (1997). The corporate social performance-financial performance link. *Strategic management journal*, 18 (4), 303-319.

WCED (World Commission on Environment and Development). (1987). *Our Common Future*. Oxford, UK: Oxford University Press.

White, G. I., Sondhi, A. C., & Fried, D. (1997). *The analysis and use of financial statements* (2nd Edition ed.). John Wiley & Sons, INC.

Windsor, D. (2006). Corporate social responsibility: three key approaches. *Journal of management studies*, 43 (1), 93-114.

Winter, M. A., & Knemeyer, M. (2013). Exploring the integration of sustainability and supply chain management. *International Journal of Physical Distribution & Logistics Management*, 43 (1), 18 - 38.

Winter, M., & Knemeyer, M. A. (2013). Exploring the integration of sustainability and supply chain management Current state and opportunities for future inquiry. *International Journal of Physical Distribution & Logistics Management* , 18-38.

Wolf, J. (2014). The Relationship Between Sustainable Supply Chain Management, Stakeholder Pressure and Corporate Sustainability Performance. *Journal of Business Ethics* , 317-328.

Woolworths Holding Limited. (2011). *Integrated Annual report*. Woolworths Holding Limited.

Woolworths Holding Limited. (2012). *Integrated Annual report*. Woolworths Holding Limited.

Woolworths Holding Limited. (2013). *Integrated Annual report*. Woolworths Holding Limited.

Woolworths Holding Limited. (2014). *Integrated Annual report*. Woolworths Holding Limited.

Woolworths Holdings Limited. (2014). *Good business journey report*.

Woolworths. (2014, August 20). *National Business Initiative and Woolworths partner to drive energy efficiency through the supply chain*. Retrieved September 12, 2014, from National Business Initiative: <http://www.nbi.org.za/Pages/Details.aspx?NBWeb=e586ac5b-bcad-49be-ba41-81b0f1fa2ba3&NBList=64654bc6-d34d-4582-999b-0778898cb878&NBItem=146>

Yin, R. K. (2003). *Case Study Research: Design and Methods* (3rd Edition ed.). CA: Sage Publications.