

UNIVERSITY OF KWAZULU-NATAL

**Closed-loop supply chain opportunities for SMME retailers in the
South African fashion industry**

By

Chenai Muhwati

209521787

**A thesis submitted in partial fulfilment of the requirements for the degree of
Doctor of Philosophy**

School of Management, IT and Governance

College of Law and Management Studies

Supervisor: Dr Roger Hans Theodore Salisbury

2021

DECLARATION

I, Chenai Muhwati declare that

- (i) The research reported in this dissertation/thesis, except where otherwise indicated, is my original research.
- (ii) This dissertation/thesis has not been submitted for any degree or examination at any other university.
- (iii) This dissertation/thesis does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons.
- (iv) This dissertation/thesis does not contain other persons' writing, unless specifically acknowledged as being sourced from other researchers. Where other written sources have been quoted, then:
 - a) their words have been re-written but the general information attributed to them has been referenced;
 - b) where their exact words have been used, their writing has been placed inside quotation marks, and referenced
- (v) Where I have reproduced a publication of which I am an author, co-author or editor, I have indicated in detail which part of the publication was actually written by myself alone and have fully referenced such publications.
- (vi) This dissertation/thesis does not contain text, graphics or tables copied and pasted from the Internet, unless specifically acknowledged, and the source being detailed in the dissertation/thesis and in the References sections.

Signature: 

Date: 26/08/2021

ACKNOWLEDGEMENTS

Pursuing a degree at this level can feel both physically and mentally taxing. As such, it is not a path to walk alone. It is on that note that I would like to show immense gratitude and appreciation for all the individuals that stood by my side through it all and especially for God's constant blessings upon my life.

I would more specifically like to thank all who participated in the study. You helped make the data collection an enjoyable phase of the study.

I would also like to thank my supervisor, Dr. Hans Salisbury, who has seen me through several degrees. Thank you for your faith, patience, attention to detail and for always believing in my abilities. I would also like to thank your wife, Frances, for her support and especially for the PhD comics that brought many laughs. I will forever be grateful to you both.

I would not have been able to consider beginning or continuing this journey if it were not for my amazing parents. Your kindness and unconditional love are unmatched. You prayed for me and you encouraged me. I appreciate you and I honour you. Ndinotenda vabereki vangu.

I am also thankful for my husband, Julian. You are a remarkable soul. I am grateful for all the encouraging words you have continuously spoken and for having you as my sidekick through it all.

Thank you to my sisters, Kudzai and Tendai, and to my brothers-in-law, Wavell and Victor. Thank you for rallying behind me, even in the most challenging moments. To my nephew, Joshua and to the three nieces I gained during this journey, Ruru, Jay and Tana, you all are the most precious gifts an aunt could ever ask for.

ABSTRACT

Enhancing the social and environmental sustainability of the fashion industry's supply chain has become an important topic in recent commercial and scholarly discussions. Consequently, closed-loop supply chains are emerging as opportunities for stakeholders to extend their roles and reduce post-consumption waste. This circular approach has been pioneered by large international retailers in developed countries, with research focused on their perspectives. As a result, SMME stakeholders have been neglected, but they contribute substantially to South Africa's emerging economy.

This study addresses the gap in the literature by investigating the potential for closed-loop supply chains for South African based SMME retailers in the fashion industry. Furthermore, consumer perceptions of this approach had not been probed in African countries. Research also shows that younger consumers are more inclined to support sustainable practices. As a result, this study selected to explore the responses of university students as potential consumers and supporters of the activities of closed-loop supply chains to evaluate possible market opportunities.

As an accessible, emerging economy committed to introducing more sustainable practices, South Africa provided a suitable location for the study. The study used a mixed methods approach to better establish the presence of opportunities through evaluating perceptions, from multiple stakeholders, regarding the collection, recovery and redistribution of used fashion. Qualitative data were collected using interviews conducted with twelve SMME retailers of new and used fashion, one Cut, Make and Trim stakeholder, and one non-profit organisation. Quantitative data were gathered from questionnaires answered by 300 university students from the University of KwaZulu-Natal.

The findings reveal that there are opportunities for SMME retailers to adopt and coordinate closed-loop supply chains in South Africa. They also reveal that there is consumer willingness to participate in the activities of these systems. Based on these findings, the study provides a comprehensive decision support model to enable SMME retailers and their partners to exploit the opportunities presented by closed-loop supply chains, despite the limitations of their relatively small size and their operation in a developing country.

TABLE OF CONTENTS

DECLARATION.....	ii
ACKNOWLEDGEMENTS.....	iii
ABSTRACT.....	iv
TABLE OF CONTENTS.....	v
LIST OF ABBREVIATIONS.....	xiv
LIST OF FIGURES.....	xvi
LIST OF TABLES.....	xviii
CHAPTER ONE: INTRODUCTION.....	1
1.1. Introduction.....	1
1.2. Background of study.....	3
1.3. Research problem.....	5
1.4. Research questions.....	7
1.5. Research objectives.....	9
1.6. Overview of research methods.....	10
1.7. Significance	11
1.8. Justification.....	11
1.9. Limitations of the study.....	12
1.10. Chapter overview.....	13
CHAPTER TWO: LITERATURE REVIEW OF SUSTAINABLE FASHION INDUSTRY SUPPLY CHAINS.....	16
2.1. Introduction.....	16
2.2. Characteristics of the fashion industry.....	17

2.2.1. Short product life-cycles.....	18
2.2.2. High volatility.....	19
2.2.3. Low predictability.....	19
2.2.4. High impulse purchasing.....	20
2.3. Fashion industry supply chain management.....	20
2.3.1. Fast fashion.....	21
2.3.2. Agility.....	23
2.4. Sustainability in the fashion industry.....	25
2.4.1. Economic sustainability.....	27
2.4.2. Social sustainability.....	28
2.4.3. Environmental sustainability.....	31
2.5. Sustainable supply chain management.....	34
2.5.1. Transparency in reporting.....	37
2.6. SMME adoption of sustainable supply chain practices.....	38
2.6.1. Challenges of adoption.....	39
2.6.1.1. Macro-economic factors.....	40
2.6.1.2. Micro-economic factors.....	41
2.6.1.3. Psychological factors.....	42
2.7. Consumer engagement in sustainable supply chain practices.....	42
2.8. Relevance to the gap in literature.....	44
2.9. Conclusion.....	46
CHAPTER THREE: LITERATURE OF CLOSED-LOOP SUPPLY CHAIN MANAGEMENT	47
3.1. Introduction.....	47
3.2. Closed-loop supply chain management.....	48

3.2.1. The activities of closed-loop supply chains.....	51
3.2.1.1. Collection of used products.....	51
3.2.1.2. Reverse logistics.....	52
3.2.1.3. Re-Marketing.....	54
3.3. Closed-loop supply management in the fashion industry.....	55
3.4. Risks of closed-loop supply chain management activities.....	59
3.4.1. Product obsolescence.....	59
3.4.2. Product design.....	60
3.4.3. Sale and redistribution.....	61
3.4.4. Consumer engagement.....	62
3.4.5. Uncertainty.....	64
3.5. Theories of perceptions of closed-loop supply chain activities.....	64
3.5.1. Model of predicted effects.....	65
3.5.2. Theoretical framework of consumer perceptions of closed-loop supply chains..	67
3.6. SMME adoption of closed-loop supply chain practices.....	70
3.7. The gap in literature.....	72
3.8. Conclusion.....	74
CHAPTER FOUR: RESEARCH METHODOLOGY.....	76
4.1. Introduction.....	76
4.2. Review of purpose and research objectives.....	76
4.2.1. Research objectives.....	77
4.3. Research design.....	81
4.4. Research approaches/ paradigms.....	83
4.5. Study site.....	86

4.6. Target population.....	88
4.7. Sample.....	89
4.7.1. Sampling and sample size.....	90
4.7.2. Response rate.....	93
4.8. Data collection.....	94
4.8.1. Secondary data.....	94
4.8.2. Questionnaires.....	95
4.8.2.1. Questionnaire design.....	97
4.8.2.2. In-depth interviews.....	99
4.8.2.3. Conducting the interviews.....	100
4.9. Data analysis.....	102
4.10. Data quality control.....	103
4.11. Ethical considerations.....	105
4.12. Conclusion.....	105
CHAPTER FIVE: QUANTITATIVE RESEARCH FINDINGS AND ANALYSES.....	107
5.1. Introduction.....	107
5.2. Response rate.....	108
5.3. Kolmogorov-Smirnov test.....	108
5.4. Cronbach's Alpha.....	114
5.5. Demographic Information.....	115
5.5.1. Gender.....	115
5.5.2. Age of respondents.....	116
5.5.3. Highest level of education.....	117
5.6. Consumer behaviour.....	119

5.6.1. Annual fashion expenditure.....	119
5.6.2. Percentage of annual fashion expenditure spent on used fashion.....	120
5.6.3. Fashion purchase motivation.....	121
5.6.4. Consumer disposal of used fashion products.....	123
5.7. Research objective two: To determine the extent to which product knowledge would impact the adoption of closed-loop supply chain management.....	125
5.7.1. Testing for significant differences.....	128
5.7.1.1. Mann-Whitney U test.....	128
5.7.1.2. Kruskal-Wallis test: Grouping variable- Highest level of education.....	130
5.8. Research objective three: To assess the extent to which perceived benefits would influence the adoption of closed-loop supply chain management activities.....	131
5.8.1. Testing for significant differences.....	134
5.8.1.1. Mann-Whitney U test.....	134
5.8.1.2. Kruskal-Wallis test: Grouping variable- Highest level of education.....	135
5.9. Research objective four: To analyse how perceived risks would affect the adoption of closed-loop supply chain management.....	137
5.9.1. Testing significant differences.....	139
5.9.1.1. Mann-Whitney U test.....	139
5.9.1.2. Kruskal-Wallis test: Grouping variable- Highest level of education.....	140
5.10. Research objective five: To determine how consumer frame of reference would impact closed-loop supply chain management adoption.....	142
5.10.1. Attitudes and perceived behavioural norms.....	142
5.10.1.1. Mann-Whitney U test.....	144
5.10.1.2. Kruskal-Wallis test: Grouping variable- Highest level of education....	145
5.10.2. Subjective norms.....	147

5.10.2.1. Mann-Whitney U test.....	148
5.10.2.2. Kruskal-Wallis test: Grouping variable- Highest level of education....	150
5.11. Research objective six: To evaluate support for the activities of closed-loop supply chain management systems from relevant stakeholders.....	151
5.11.1. Types of used products university students are more likely to purchase.....	151
5.11.2. Types of used products university students are less likely to purchase.....	152
5.11.3. Motivating factors for product return activities.....	153
5.11.4. Purchasing recovered fashion.....	155
5.11.5. Sources from which university students are more likely to purchase used fashion.....	157
5.11.6. Student support for closed-loop supply chain activities.....	159
5.12. Conclusion.....	160
CHAPTER SIX: QUALITATIVE RESEARCH FINDINGS AND ANALYSES.....	162
6.1. Introduction.....	162
6.2. Response rate.....	163
6.3. Organisation profiles.....	163
6.4. Consumer base profiles and product offerings.....	168
6.5. Research objective two: To determine the extent to which product knowledge would impact the adoption of closed-loop supply chain management.....	170
6.5.1. Theme one: Sustainable supply chain management.....	170
6.5.1.1. Category one: Adoption of sustainable practices.....	171
6.5.1.2. Category two: Ethical consumption practices in South Africa.....	178
6.6. Research objective three: To assess the extent to which perceived benefits would influence the adoption of closed-loop supply chain management activities.....	186
6.6.1. Theme two: Sustainability benefits of closed-loop activities.....	186

6.6.1.1. Category one: Perceived benefits of reuse, remanufacturing and recycling	187
6.6.1.2. Category two: Perceived benefits of used product collection initiatives	196
6.7. Research objective four: To analyse how perceived risks would affect the adoption of closed-loop supply chain management.....	199
6.7.1. Theme three: The risks of closed-loop supply chain management activities....	199
6.7.1.1. Category one: Perceived risks of used product collection initiatives.....	200
6.7.1.2. Category two: Perceived risks of product recovery.....	203
6.8. Research objective six: To evaluate support for the activities of closed-loop supply chain management systems from relevant stakeholders.....	207
6.8.1. Theme four: Most suitable activities for the South African market.....	208
6.8.1.1. Category one: Limitations.....	211
6.8.1.2. Category two: Recommendations.....	217
6.9. Conclusion.....	226
CHAPTER SEVEN: DISCUSSION OF FINDINGS.....	228
7.1. Introduction.....	228
7.2. Overview of demographic and organisational profiles.....	228
7.2.1. Respondent profiles.....	229
7.2.2. Participant profiles.....	229
7.3. Research objective one: To assess the sustainability contributions of closed-loop supply chain management in the fashion industry.....	230
7.4. Research objective two: To determine the extent to which product knowledge would impact the adoption of closed-loop supply chain management.....	231
7.4.1. Consumer familiarity and expertise.....	231
7.4.2. Participant familiarity and expertise.....	234

7.5. Research objective three: To assess the extent to which perceived benefits would influence the adoption of closed-loop supply chain management activities.....	236
7.5.1. Respondent perceived benefits.....	236
7.5.2. Participant perceived benefits.....	237
7.6. Research objective four: To analyse how perceived risks would affect the adoption of closed-loop supply chain management.....	238
7.6.1. Respondent perceived risks.....	239
7.6.2. Participant perceived risks.....	240
7.7. Research objective five: To determine how consumer frame of reference would impact closed-loop supply chain management adoption.....	243
7.7.1. Respondent responses.....	243
7.8. Research objective six: To evaluate support for the activities of closed-loop supply chain management systems from relevant stakeholders.....	244
7.8.1. Respondent support.....	245
7.8.2. Participant support.....	247
7.9. Conclusion.....	252
CHAPTER EIGHT: DECISION SUPPORT MODEL FOR SMME RETAILER ADOPTION OF CLOSED-LOOP SUPPLY CHAINS.....	254
8.1. Introduction.....	254
8.2. Proposed model.....	254
8.3. Contributions.....	263
8.4. Conclusion.....	264
CHAPTER NINE: CONCLUSION AND RECOMMENDATIONS.....	265
9.1. Introduction.....	265
9.2. Revisiting the research.....	266

9.3. Conclusions.....	267
9.3.1. Research objective one: To assess the sustainability contributions of closed-loop supply chain management in the fashion industry.....	267
9.3.2. Research objective two: To determine the extent to which product knowledge would impact the adoption of closed-loop supply chain management.....	268
9.3.3. Research objective three: To assess the extent to which perceived benefits would influence the adoption of closed-loop supply chain management activities.....	269
9.3.4. Research objective four: To analyse how perceived risks would affect the adoption of closed-loop supply chain management.....	269
9.3.5. Research objective five: To determine how consumer frame of reference would impact closed-loop supply chain management adoption.....	270
9.3.6. Research objective six: To evaluate support for the activities of closed-loop supply chain management systems from relevant stakeholders.....	270
9.3.7. Research objective seven: To develop a model for closed-loop supply chain management adoption by SMME retailers in South Africa.....	271
9.4. Recommendations.....	272
9.4.1. A model of closed-loop fashion supply chain adoption in South Africa.....	275
9.5. Contributions of the study.....	278
9.6. Limitations of the study.....	279
9.7. Future Research.....	280
REFERENCE LIST.....	283
APPENDIX A: INFORMED CONSENT FORMS.....	320
APPENDIX B: INTERVIEW GUIDES.....	330
APPENDIX C: QUESTIONNAIRE.....	342
APPENDIX D: LETTER TO GATEKEEPERS.....	353
APPENDIX E: ETHICAL CLEARANCE APPROVAL LETTERS.....	356

LIST OF ABBREVIATIONS

AGOA	African Growth and Opportunity Act
ATC	Agreement on Textiles and Clothing
CAFTA-DR	Central America Free Trade Agreement
CLSC	Closed-loop Supply Chain
CLSCM	Closed-loop Supply Chain Management
CMT	Cut, Make and Trim
CSR	Corporate Social Responsibility
ESSP	External Social Sustainability Practices
E-commerce	Electronic Commerce
EOL	End-of-life
EOU	End-of-use
EU	European Union
HSSREC	Humanities and Social Sciences Research Ethics Committee
ILO	International Labour Organisation
ISO	International Organisation for Standardisation
ISSP	Internal Social Sustainability Practices
MMP	Markdown Money Policy
NPO	Non-profit organisation
NDP	National Development Plan
NSSD	National Strategy for Sustainable Development
R-CTFL	Retail Clothing, Textile, Footwear and Leather

SARS	South African Revenue Service
SCOR	Supply Chain Operations Reference
SDGs	Sustainable Development Goals
SHDB	Social Hotspots Database
SMME	Small, Medium and Micro Enterprise
SPSS	Statistical Package for Social Sciences
TBL	Triple Bottom Line
TPB	Theory of Planned Behaviour
TPR	Theory of Perceived Risk
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USA	United States of America
WISP	Western Cape Industrial Symbiosis Programme
WTO	World Trade Organisation

LIST OF FIGURES

Figure 3.1: A generic form of forward and reverse logistics.....	49
Figure 3.2: Fashion brand product end-of-life strategies.....	57
Figure 3.3: Model of predicted effects.....	65
Figure 3.4: Theoretical framework of consumer perceptions of closed-loop supply chains.....	68
Figure 4.1: Blueprint for the study.....	82
Figure 4.2: Map of South Africa's nine provinces since 1996, showing provincial capitals and major cities.....	87
Figure 5.1: Annual fashion expenditure.....	120
Figure 5.2: Percentage of annual fashion expenditure spent on used fashion.....	121
Figure 5.3: Fashion purchase motivation (males n=99).....	122
Figure 5.4: Fashion purchase motivation (females n=201).....	123
Figure 5.5: Disposal of used fashion (females n=201).....	124
Figure 5.6: Disposal of used fashion (males n=99).....	125
Figure 5.7: Types of used products university students are more likely to purchase.....	152
Figure 5.8: Types of used products university students are less likely to purchase.....	153
Figure 5.9: Returning used fashion for reuse, remanufacturing or recycling (females n=201)...	154
Figure 5.10: Returning used fashion for reuse, remanufacturing or recycling (males n=99).....	155
Figure 5.11: Purchasing recovered fashion (females n=201).....	156
Figure 5.12: Purchasing recovered fashion (males n=99).....	157
Figure 5.13: Sources from which university students are more likely to purchase used fashion	159
Figure 5.14: Student support for closed-loop supply chain activities.....	160

Figure 8.1: Decision support model for SMME retailer adoption of closed-loop fashion supply chains in South Africa.....262

Figure 9.1: Model for SMME retailer adoption of closed-loop fashion supply chains in South Africa..... 278

LIST OF TABLES

Table 4.1. Summary of the mixed methods observed in the study.....	85
Table 4.2: Summary of sampling and sample size.....	91
Table 4.3: Response rate.....	94
Table 5.1: Kolmogorov-Smirnov test.....	109
Table 5.2: Cronbach’s Alpha test.....	114
Table 5.3: Gender distribution.....	116
Table 5.4: Age distribution.....	117
Table 5.5: Educational levels of respondents.....	118
Table 5.6: Product knowledge.....	126
Table 5.7: Testing for significant differences between the product knowledge of males and females.....	128
Table 5.8: Testing for significant differences in product knowledge among the educational levels	130
Table 5.9: Perceived benefits.....	132
Table 5.10: Testing for significant differences between the perceived benefits of males and females.....	134
Table 5.11: Testing for significant differences in perceived benefits among the educational levels	136
Table 5.12: Perceived risks.....	137
Table 5.13: Testing for significant differences between the perceived risks of males and females	139
Table 5.14: Testing for significant differences in perceived risks among the educational levels	141
Table 5.15: Attitudes and behavioural norms.....	143
Table 5.16: Testing for significant differences between the attitudes and behavioural norms of males and females.....	144

Table 5.17: Testing for significant differences in the attitudes and behavioural norms of the educational levels.....	146
Table 5.18: Subjective norms.....	147
Table 5.19: Testing for significant differences between the subjective norms of males and females.....	149
Table 5.20: Testing for significant differences in subjective norms among the educational levels.....	150
Table 6.1: Organisation and participant profiles.....	167
Table 6.2: Theme one: Sustainable supply chain management.....	171
Table 6.3: The perceived benefits of closed-loop supply chains.....	186
Table 6.4: The risks of closed-loop supply chain management activities.....	199
Table 6.5: Limitations and recommendations for adoption.....	210
Table 7.1. Most suitable closed-loop supply chain recovery and redistribution methods.....	247

CHAPTER ONE: INTRODUCTION

1.1. Introduction

The fashion industry is primarily dominated by forward-driven supply chains (Brydges, 2021, p. 1; Ellen MacArthur Foundation, 2017, p. 19). As a result, the market for used fashion products commonly exists separately from that of new products. With growing attention on the need for sustainable supply chain practices, some international retailers, such as Filippa K, are exploring the sustainability opportunities presented by merging these two markets (Hvass, 2016, p. 22). Using closed-loop supply chain management (CLSCM) strategies, such companies employ reverse logistics to recover value from used products (Cannella, Bruccoleri and Framinan, 2016, p. 35). To facilitate this, consumers are encouraged to return their used fashion products to be remanufactured, recycled or reused as secondhand goods (Cannella et al., 2016, p. 22; Brydges, 2021, p. 2). Existing studies on CLSCM frequently reference the activities of large retailers (e.g. Sandvik, 2017). While literature that examines the sustainable supply chain strategies of Small, Micro and Medium-sized Enterprises (SMMEs) is growing (e.g. Fetter, 2019, p. 154), studies of SMME retailer coordinated closed-loop supply chain (CSLC) activities are limited and omit developing countries, such as South Africa. More recent literature (e.g. Abbey, Meloy, Guide and Atalay, 2015, p. 489) also lacks empirical evidence of the inter-dependency of supply chain stakeholders and consumers in successful CLSCM systems.

This study addresses the identified gaps in the literature and investigates the potential adoption of SMME fashion retailer facilitated CLSCM practices in South Africa. The qualitative section of the study targeted SMME retailers of both new and secondhand fashion, across South Africa, along with other stakeholders with an interest and knowledge of the industry's operations. The study's focus was on retailers that include university students as part of their target market. A majority of such students are Generation Y or Millennials (born between 1981 and 1996), and Generation Z (born between 1997 and 2012) (Beresford Research, 2021, para. 2). Combined, these age groups make up a substantial portion of South Africa's current and future consumers

(Pillay, 2020, para. 4-5). Wang (2017, p. 9) and Liu and Hei (2021, p. 17) also note Generations Y and Z are both environmentally and socially aware. In addition, studies such as Alm, Beery, Eiblmeier and Fahmy (2021, p. 61) argue for a role that universities have to enable future progress towards sustainability through educating students. As a result, it was necessary to establish the current perceptions of students to determine the extent of such progress in South Africa. It was also necessary to interview stakeholders that target such students to establish actual demand and disposal habits that can impact the adoption of CLSCM activities.

An exploratory study of university students' perceptions of the products and services of CLSCs provided a better understanding of possible market opportunities for the different products. University of KwaZulu-Natal was selected due to its accessibility to the researcher, and also because it is a top-rated, culturally and demographically diverse institution (University of KwaZulu-Natal, 2017, p.1-15). The university was selected not only due to its top rankings, internationally and within South Africa (University of KwaZulu-Natal, 2021, p. 10-11), but also due to sustainability being rooted in the university's strategic plan, and in the efforts of both staff and students (Poku, 2021, para. 3-4). There has also been an increase in student interest in sustainability focused postgraduate research topics, as reflected in University of KwaZulu-Natal's (2022, p. 1) online library archives of theses and dissertations. A search for '*sustainability*' in the database showed 936 dissertations and theses for the period 2020-2022, as opposed to 955 between 1990 and 1999. As a result, students from this institution were asked to take part in the study and complete questionnaires that evaluated their willingness to participate in the activities of circular supply chains. Both the qualitative and quantitative findings were integrated to establish a model for the facilitation and adoption of CLSCM activities by SMME fashion retailers in South Africa, in order to advance end-to-end sustainability.

1.2. Background of study

In recent years, the sustainability of the global fashion industry has been criticised for many reasons. The industry, which supplies apparel (clothing), footwear, bags and accessories (Cimatti, Campana and Carluccio, 2017, p. 393), has been identified as a significant contributor to the world's total pollution (Paraschiv, Tudor and Petrariu, 2015, p.1282; Ditty, 2015, p.11). The steady increase in the amount of waste it produces is largely attributed to the influx of cheap short life-cycle, fast fashion products on the market (Bau, 2016, p. 1). The industry is also highly criticised for the social weaknesses of its low-cost strategies. The widespread use of sweatshops, which consistently violate workers' basic rights and employ child labour, has contributed extensively to its international condemnation (Ditty, 2015, p. 8; Chandran, 2016, para. 5). As a result, stakeholders that include consumers and non-profit organisations (NPOs), such as the Fashion Revolution (Ditty, 2015, p. 21) and the Ellen MacArthur Foundation (2020, para. 7) emphasise a need for end-to-end supply chain sustainability, visibility, accountability, and transparency.

There are various strategies for achieving a sustainable industry. For example, to attain environmental sustainability, large retail brands such as Woolworths and Cape Union Mart are some of the first in South Africa to employ eco-friendly designs using biodegradable or recycled materials (Smal, 2016, p. 2). Sustainability strategies also include CLSCM practices that extend the roles of retailers, consumers and other supply chain stakeholders. International retailers using these approaches include Patagonia, Filippa K and Boomerang (Strähle, 2017, p. 130). South African fashion industry stakeholders actively engaging in some of the activities of CLSCM include Rewoven (Rewoven, 2020, para. 1). CLSCM involves the organisation, coordination and management of a supply chain to ensure that the greatest value is extracted from products throughout their life-cycles. These systems are enabled by the administration of consumer returns of used goods (Govindan, Soleimani and Kannan, 2015, p. 603). This makes consumers essential stakeholders, as they contribute to both the back and front-end activities of these systems (Wang, Hazen and Mollenkopf, 2018, p.481). They contribute to the front-end by returning their purchased and consumed products (Abbey and Guide, 2017, p. 378) instead of

disposing of them as waste. The varying types and quantities of products returned by consumers significantly affect the successes of the operations, manufacturing and logistics functions of these supply chains (Lehr, Thun and Milling, 2013, p. 4106). Consumers also contribute to the back-end activities as buyers of recovered products (Hvass, 2016, p. 41). Despite their roles, Abbey et al. (2015, p. 489) specify that literature that investigates consumer participation in these systems is limited.

South Africa was selected as a suitable study site. As a developing country, that Bakari (2017, p. 3) describes as having economic activities that resemble those of developed nations, South Africa presents a unique environment for the study of CLSCM. It battles with high unemployment and illiteracy rates that contribute to many of its citizens living below the poverty line (Bakari, 2017, p. 3; Ranchhod, 2019, para. 1). This results in a significant number of citizens also being informally employed. For those formally employed, wages do not always match the yearly increases in inflation (Hattingh, Magnus and Ramlakan, 2016, p. 2). According to Hattingh, Magnus and Ramlakan (2016, p. 2), the economy's challenges are reflected in the price sensitive buying behaviours of its consumers. Nonetheless, significant segments of the South African population are highly brand-conscious (Marais, 2015, p. 2).

South Africa has a preponderance of SMMEs that add significant value to the country's economy and help to address the country's economic challenges. South Africa's National Development Plan (NDP) aims to eliminate poverty and decrease inequality by 2030. Through this plan, the country's goal is to ensure that 90% of the 11 million jobs, needed to assist with these aims, come from SMMEs (Small Enterprise Development Agency, 2016, p. 33; Bhorat, Asmal, Lilenstein and van der Zee, 2018, p. 2). Many of the SMME stakeholders in Africa operate in the textiles sector, due to its labour-intensive nature (Allen, 2017, para. 1-7). The informal and formal economic activities of businesses of the fashion industry are, therefore, revered for their contributions to job creation and, in particular, for a labour force that is largely comprised of women (African Development Bank Group, 2018, para. 5). In spite of their value to African countries, such as South Africa, SMMEs, particularly retailers, in the continent's emerging

economies do not feature in studies that examine circular fashion supply chain activities. This dearth of research prompted this study.

1.3. Research problem

The fashion industry makes a significant contribution to South Africa's economic activity. The locally recognised Retail Clothing, Textile, Footwear and Leather (R-CTFL) supply chain was, in 2020, reported to have a total gross domestic product contribution of R74 billion (South African Government News, 2020, para. 7). Key South African based large retail industry stakeholders include: The Foschini Group (TFG), Woolworths, Truworths and Edcon (Veitch, 2017, para. 3). SMME retailers also hold a significant and valuable position in the operations of the country's industries (Bruwer, 2020, p. 148), with several emerging brands such as Selfi, Pichulik and MaXhosa by Laduma contributing to this position in South Africa's fashion industry (Collison, 2017, para. 1-6).

In recent years, cheap imports and the entrance of globally successful retailers such as H&M and Zara have amplified the competitiveness of the industry and threatened the market positions of local stakeholders (Crotty, 2017, para. 1). In addition, these international retailers have entered the South African market with an international reputation for proactively executing supply chain practices that allow them to be leaders in achieving agility (Gabrielli, Baghi and Codeluppi, 2013, p. 206; Ndlendele, 2017, para. 3). Some of them have also pioneered the adoption of retailer facilitated CLSCM (Hvass, 2013, p. 111). Since 2013, such sustainable supply chain management practices have become essential in the fashion industry, following global outrage over the fatal collapse of the Rana Plaza factory in Bangladesh (Chandran, 2016, para. 31-35; Ditty, 2015, p. 4).

The fundamental benefits of adopting CLSCM could be especially practical to the local fashion industry, and consistent with the South African government's national efforts to attain sustainable economic development. The South African government also has a mandate to preserve the

operations of SMMEs and reduce their failure rates (Small Enterprise Development Agency, 2018, p. 10), particularly in light of the economic effects of the coronavirus (COVID-19) pandemic in 2020 (McKinsey & Company, 2020, p. 10). Globalisation and a growing demand for sustainable supply chain stakeholders, for example, through the United Nations' 17 Sustainable Development Goals (SDGs) (Oriade, Osinaike, Aduhene and Wang, 2020, p. 2; United Nations, 2020, para. 1), puts pressure on SMMEs to apply more sustainable practices in order to remain competitive (Fetter, 2019, p. 154). Due to their assumed current limited application in African developing countries, CLSCM activities, therefore, present innovative avenues for SMME retailers in South Africa to achieve a globally recognisable competitive advantage. In addition, CLSCM has the potential to create new economic opportunities (Bhatia, Jakhar, Mangla and Gangwani, 2020, p. 2) and to develop new markets for reprocessed products (Chow and Li, 2018, p. 235). This is essential for increasing South Africa's employment rate and is evident in emerging projects such as the Western Cape Industrial Symbiosis Programme (WISP) that helps ease the adoption of circularity and sustainability within SMMEs (GreenCape, 2020, para. 1-3).

The South African Revenue Service (SARS) has been trying to curb the illegal importation of secondhand products (Tswanya, 2017, para. 5-8). Through an integration of the activities of local primary and secondary market activities, circular economies have the potential to help reduce the current informal market's reliance on illegal imports to sustain operations. The evaluation of different recovery methods (recycling, remanufacturing and reuse) can also allow stakeholders to better manage and strategically extract value from the volumes of used fashion products that currently exist in the market.

With the use of product recovery methods to discourage waste and the inefficient use of resources, CLSC activities can further combat consumerism's harmful environmental effects and minimise raw material costs (Meyer, Niemann, Mackenzie and Lombaard, 2017, p. 4-5). Matthews (2015, p. 6) also predicted that as natural resources become scarce, the cost of sourcing such resources will become high. Adopting CLSCM would enable SMME stakeholders

to create robust supply chains through circulating existing resources. This would likely protect them from incurring such risks in the future.

The sustainability contributions of CLSCM are evident, as previously discussed. It is further apparent in the global direction towards end-to-end accountability, for example, through the United Nations' SDGs. To support this, there is a need for South African based research that investigates the local viability of these activities. In order to explore the benefits and risks of these systems, such an investigation requires the contributions of multiple stakeholders. The application of CLSCM is also based on the extent to which local stakeholders are knowledgeable and have experience with both sustainable practices and circular ones. This also extends to consumers, whose personal frame of reference can affect their behaviour and acceptance of circular activities significantly. University students, particularly Generations Y and Z, constitute a substantial portion of current and future consumers, so potentially, supply chain stakeholders can benefit greatly by learning to understand how to address the diverse perceptions inherent in these markets. An appreciation of these opportunities led to this study and to the identification of a need for a CLSC decision support model that combines the perceptions of multiple stakeholders.

1.4. Research questions

The research questions are guided by the literature on sustainable supply chain management and that of CLSCM, for example, from studies such as Abbey et al. (2015, p. 492). More specifically, the study is also directed by a theoretical framework developed by Wang, Wiegerinck, Krikke and Zhang (2013, p. 873). These authors established seven variables for determining consumer perceptions of remanufactured products in CLSCM systems. The theoretical framework was based on a detailed review of literature. Wang et al. (2013, p. 867) combined the theory of planned behaviour (TPB), the theory of perceived risk (TPR) and literature on perceived benefits and product knowledge. From this, variables were identified that either have a positive or

negative impact on consumer willingness to purchase the products of CLSCM systems. These variables are as follows:

1st variable; Product knowledge: Based on the consumer's familiarity and expertise with the product, and can impact their purchase attitude and intention. This can also influence the level of perceived risks associated with the product.

2nd variable; Perceived benefits: The benefits associated with the product that can influence consumer purchase attitude and purchase intention. These benefits may be social, environmental or personal.

3rd variable; Perceived risks: The risks associated with the product that can influence purchase attitude and decrease willingness to acquire the product. Risks include: financial risk, performance risk and social risk.

4th variable; Consumer frame of reference (subjective norms, purchase attitudes, and perceived behavioural norms): A consumer's personal frame of reference may influence the extent to which they find the action of purchasing remanufactured products beneficial or risky. This can include subjective norms that stem from how the consumer believes those close to them would prefer they behaved.

Based on a review of the literature, the researcher concluded that some of the variables incorporated in this framework are applicable to other stakeholders in the supply chain. They can also be used to explore perceptions of front-end activities of CLSCM, such as the collection of used products, and other activities such as the recycling and reuse of products. As a result, the framework was adapted to aid in evaluating the perceptions of both respondents and participants of the study.

The main research question, *'What opportunities exist for the adoption of CLSCM activities by SMME retailers in South Africa's fashion industry?'* was divided into the following questions in order to direct the research process:

1. What contributions can CLSCM make towards sustainability?
2. To what extent would product knowledge impact the adoption of CLSCM?
3. To what extent would perceived benefits influence the adoption of CLSCM activities?
4. How would perceived risks affect the adoption of CLSCM?
5. How would consumer frame of reference impact CLSCM adoption?
6. To what extent are the activities of CLSCM systems supported by relevant stakeholders?
7. Can a model be developed for CLSCM adoption by SMMEs in South Africa?

1.5. Research objectives

The main research objective is, *'To assess opportunities for the adoption of CLSCM activities by SMME retailers in South Africa's fashion industry'*. This was divided into the following research objectives pursued in this study:

1. To assess the sustainability contributions of CLSCM in the fashion industry.
2. To determine the extent to which product knowledge would impact the adoption of CLSCM.
3. To assess the extent to which perceived benefits would influence the adoption of CLSCM activities.
4. To analyse how perceived risks would affect the adoption of CLSCM.
5. To determine how consumer frame of reference would impact CLSCM adoption.
6. To evaluate support for the activities of CLSCM systems from relevant stakeholders.

7. To develop a model for CLSCM adoption by SMME retailers in South Africa.

1.6. Overview of research methods

The problem statement and the study's objectives informed the research design. As a result, a mixed methods approach was employed for this exploratory study. The approach combines both quantitative and qualitative research methods. The quantitative research was conducted with students from the University of KwaZulu-Natal, a majority of which were either Generation Y or Z. The qualitative research, on the other hand, was conducted with SMME retailers that serve university students. It also included additional stakeholders that are well informed of the operations of the South African fashion industry supply chain. Included were one Cut, Make and Trim (CMT) stakeholder that is both an SMME and manufactures for SMMEs, along with one non-profit organisation that is not only knowledgeable of the practices of SMMEs, but also actively campaigns for social and environmental reform within the South African fashion industry. Non-probability sampling techniques were utilised to select samples for both research approaches. Convenience sampling was used in the selection of the University of KwaZulu-Natal, as a convenient and appropriate location for approaching university students as consumer respondents.

To collect the data, the researcher personally distributed questionnaires to university students and conducted in-depth interviews with the participants of the qualitative study. The quantitative data were cleaned, coded and analysed using descriptive and inferential statistics in the SPSS™ package. Conversely, the qualitative data were transcribed using Otter™, and thematic analysis was employed using NVivo™. Data quality control measures were utilised in order to maintain the reliability and validity of the study. Ethical practices were also observed throughout the research process. Finally, the study's findings were consolidated and a model was developed to aid in the adoption of CLSCM practices coordinated by SMME retailers in the South African fashion industry.

1.7. Significance

The body of literature that focuses on the sustainability of the fashion industry continues to increase. However, to the researcher's knowledge, this study is the first to analyse the potential role that used fashion products can have towards improving the sustainability of primary SMME retailers in a developing country such as South Africa. This study contributes to existing literature by investigating how such establishments can extend their sustainability initiatives beyond the confines of forward-driven supply chains. It further suggests how they might fulfil this extended role. Moreover, there is a possibility for SMME retailers to broaden their current supply chains to include additional partners. These partners could aid in the collection, reprocessing and redistribution of recovered products. This can assist in the creation of jobs in a country that is battling with high unemployment. The study therefore also includes the perceptions of retailers of used fashion to further determine their potential role. The study's investigation of university students, as a significant current and future market, further emphasises the value of their contributions, as consumers in these systems. Such consumers are also highlighted as more demanding of stakeholder accountability and sustainability (Wang, 2017, p. 9; Liu and Hei, 2021, p. 19; Marques, Marques and Ferreira, 2020, p. 2), which may impact how business should operate in the future. This study therefore contributes by evaluating the perceptions of multiple stakeholders to determine the extent to which CLSCM could be successful in South Africa and to highlight the conditions that would support consumer and retailer participation. Despite the presence of international case studies (e.g. Hedegård, Paras and Gustafsson, 2016, p. 1), this study provides a foundation for South Africa's local stakeholders to ascertain if these activities are feasible in their operations. Accordingly, a model was developed to support this process.

1.8. Justification

With the world becoming more globalised, the fashion industry in South Africa needs to sustain its operations by being more internationally competitive. Being at the forefront of sustainable

development can support this objective. Without this study, South African based SMME fashion retailers may not be provided with information that is relevant to their local operating environments. They may also not be offered a perspective that refers to their business sizes and the related opportunities and limitations they may experience in adoption. As the study further evaluates market perceptions, along with the perceptions of an internal and external stakeholder, the findings allow for more insight into the phenomenon. The model and recommendations will help these enterprises determine how to successfully establish these globally competitive systems in the context of an African developing economy.

1.9. Limitations of the study

Limitations of the study can be attributed to the sampling methods used. The sample was taken from one developing African country. Findings could differ in other African states. However, this study is a useful reference for future research to be conducted in other regions on the continent. The researcher also identified stakeholders based in only five of South Africa's nine provinces. As a result, the findings of the study may not be representative of SMME fashion retailers nationwide. Nonetheless, this presents an opportunity for additional research that analyses and compares stakeholders in other areas. The study focused on student consumers in one university. However, it was reasoned that since this institution is one of the top-rated contact universities in South Africa, and attracts a culturally and economically diverse student body (University of KwaZulu-Natal, 2017, p. 5-16), the findings would be a reasonable representation of South African students' perceptions in general. In addition, research shows that younger markets are more inclined to support sustainable practices in retailers (Wang, 2017, p.9; Liu and Hei, 2021, p. 19). As a result, this sample was considered adequate for an exploratory study of this nature.

1.10. Chapter overview

Chapter One

Chapter One introduces the study. It provides a background to the phenomenon and gives detail of the research problem that prompted the study. Chapter One describes the study's objectives and identifies the theoretical framework used in their design. An overview of the research methods observed in the study is given. The chapter further details the significance and justification for the study. It concludes by presenting the limitations of the research and a chapter overview.

Chapter Two

Chapter Two presents the first literature review. It gives a summary of the characteristics that promote the fashion industry's use of agile and fast fashion strategies. It then details the sustainability limitations of these strategies that have encouraged reform in the global fashion industry's operations. The literature on sustainable supply chain management is presented and reviewed. The sustainable practices of SMMEs are also reviewed in this chapter. The review examines the coordination of sustainable practices by SMME retailers in developing African nations and the challenges experienced in such activities. The characteristics of Generation Y and Z consumers were further detailed in terms of their consumption habits, as a majority of this study's questionnaire respondents were in these age cohorts.

Chapter Three

Chapter Three highlights gaps in the literature. It first presents a review of the literature of CLSCM. In addition, it indicates the challenges of adopting these supply chains. The chapter further looks at the application of circular systems in the fashion industry. The review points out

the presence of a limited body of knowledge that examines CLSCM systems coordinated by SMME retailers. Detail of the gap that currently exists in the literature concludes this chapter.

Chapter Four

Chapter Four details the research design of the study. An illustration of this blueprint is provided. The research approaches applied in the study are discussed. The chapter also details the target populations of the study and the sampling techniques observed. The research instruments used are described, and the data collection processes are explained. The data analysis methods applied are further discussed, along with the data quality control methods used. The chapter concludes by presenting the ethical considerations of the study.

Chapter Five

Chapter Five details the quantitative findings of the study. These are presented and analysed in accordance with the research objectives.

Chapter Six

The qualitative findings are presented and analysed in this chapter. The relevant research objectives that guided this section are observed.

Chapter Seven

Chapter Seven presents the discussion of the findings of both the qualitative and quantitative research presented in Chapters Five and Six. The research objectives of the study are used to

guide this process. The chapter identifies key areas in the findings that inform consumer and retailer perceptions of CLSCM activities.

Chapter Eight

Chapter Eight presents the decision support model developed to aid SMME fashion retailers in their decisions to adopt CLSCM in South Africa, as an African developing economy.

Chapter Nine

Chapter Nine completes the study. It presents the conclusion and recommendations made. A model is also developed based on the discussion presented in Chapter Seven and the implementation model in Chapter Eight.

CHAPTER TWO: LITERATURE REVIEW OF SUSTAINABLE FASHION INDUSTRY SUPPLY CHAINS

2.1. Introduction

Developments in the fashion industry have resulted in the use of more market responsive business models. Fast fashion, for example, has been successfully adopted by globally competitive brands such as Zara and H&M (Gabrielli, Baghi and Codeluppi, 2013, p. 206). Such strategies have enabled these companies to optimise their profitability by being agile and responsive to the changing needs of consumers (Aftab, Yuanjian, Kabir and Barua, 2018, p. 217). These best practices are now being adopted by stakeholders all over the world. However, the sustainability challenges of such business models have become more apparent and have motivated the need for sustainable practices, such as CLSCM. With improved agility, the life-cycles of fashion products are considerably shorter, which has encouraged continuous consumption. The sourcing of inexpensive materials of inferior quality has further increased the affordability of these products and contributed to the growth of textile and apparel production, consumption and waste (Bick, Halsey and Ekenga, 2018, p. 2). In addition, the social sustainability of these models has been challenged by increasing exposure of the substandard working conditions provided by a significant number of outsourced partners (Khurana, 2016, p. 108). The growing pressure for more accountability and transparency within the industry is causing a shift towards incorporating more sustainable supply chain practices. In addition, the spotlight on post-consumption activities has also encouraged stakeholders to explore the sustainability benefits of CLSCM and motivated this study.

The first chapter provided an introduction and overview of the research. Chapters Two and Three will both comprise detailed and comprehensive reviews of the literature of the fashion industry's supply chains and of CLSCM. Literature reviewed in these sections was derived from both global and South African sources. This chapter provides a background to the literature presented in Chapter Three. It explores literature on the fashion industry supply chain. It looks at the

characteristics of the industry and its products. It then summarises the factors that challenge the industry's economic, social and environmental sustainability. The chapter further highlights sustainable supply chain management literature and looks at the characteristics of two of this study's key stakeholders: SMMEs and consumers. The discussion on consumers further focuses on the behaviours of Generations Y and Z consumers, who form the majority of the university students that participated in the study. The information provided in this chapter gives the reader detailed insights into the challenges that are leading to the exploration and execution of CLSCM by fashion industry stakeholders. Through the two chapters, the researcher provides insight into the current gaps in literature that prompted this study. This chapter provides a background to the following research objective:

- Research objective one: To assess the sustainability contributions of CLSCM in the fashion industry.

2.2. Characteristics of the fashion industry

The nature of the modern fashion industry has contributed significantly to the complexities of its supply chain and its challenges with sustainability. Christopher, Lowson and Peck (2004) provided a useful foundation for researchers to better understand the characteristics of the fashion industry and how these have influenced modern supply chain strategies. According to the authors, fashion *'encompasses any product or market where there is an element of style which is likely to be short-lived'* (Christopher, Lowson and Peck, 2004, p. 1). A more recent definition by Barnard (2020, p. 2) defines it as *'either creative to the point of being an 'art', enabling individuals and cultures to express their inner feelings and personalities, or exploitative to the point of criminality, forcing people to work and spend more than is healthy for them or society'*. While both these definitions initially appear to be similar, the latter proceeds to show a growing interest in the sustainability effects of the modern industry. Bhardwaj and Fairhurst's (2010, p. 166) examination of the evolution of the fashion industry reveals that definitions such as those provided by Christopher, Lowson and Peck (2004) and Barnard (2020) are contemporary. The

authors explain that prior to the mid-1980s, fashion stakeholders employed a simpler, more standardised approach which allowed for the mass production of classic products. However, the industry was forced to evolve as consumers became more fashion aware and their ways of life changed. According to Ditty (2015, p. 6), the current fashion industry now '*shapes wider trends, beliefs, attitudes, behaviours, identity and culture*'. Zirkevych (2018, p. 489-490) discusses two distinct segments of the modern fashion pyramid, which now ranges from *haute couture* (luxury fashion) to mass produced, affordable and trendy fast fashion products. These cater for the diverse needs of modern consumers.

Christopher, Lawson and Peck (2004, p. 2) summarised the modern fashion industry using four characteristics: *short product life-cycles, high volatility, low predictability and high impulse purchasing*. More recent studies by Oran (2019, p. 1090) and Rafi-UI-Shan, Grant, Perry and Ahmed (2018, p. 7) refer to similar features. These are discussed in the sections that follow.

2.2.1. Short product life-cycles

According to Joy and Peña (2017, p. 35), the products of the fashion industry are designed to suit the temporary demands and moods of consumers. These are influenced by the trends and styles that are popular at that moment (Hur and Cassidy, 2019, p. 2). Consumers are now more motivated to purchase more than they did before the year 2000 (Niinimäki, Peters, Dahlbo, Perry, Rissanen, and Gwilt, 2020, p. 189). Consequently, these products are commonly produced to have short life-cycles that do not last longer than a few months or weeks (Seifert, Siemsen, Hadida and Eisingerich, 2015, p. 9). Due to the higher possibility of trend and style obsolescence, supply chain stakeholders are tasked with needing to ensure that their sensitivity to the market is heightened through stocking smaller quantities of fashion items at a time (Aftab et al., 2018, p. 212-213).

2.2.2. High volatility

The high volatility of the fashion industry is largely a result of the presence of a number of internal and external factors that influence the demands, moods and tastes of consumers. According to Roy, Hiran and Hiran (2019, p. 20-21), these may include: fashion designers, the media and culture. Chang (2017, p. 53) and Nash (2019, p. 2-3) discuss how popular culture and greater information accessibility have facilitated shifts in what is demanded by consumers. Such factors have further increased the number of seasons the fashion industry has in its calendar. Traditionally, seasons were limited to two seasons per year, Spring - Summer, and Fall - Winter, (Aftab et al., 2018, p. 212), and the industry was more stable and predictable. However, fast developing trends have influenced the industry to change at the same pace (McMaster, Nettleton, Tom, Xu, Cao and Qiao, 2020, p. 6).

2.2.3. Low predictability

Low predictability arises from the high number of trends that are available at any given point to cater for the varying needs of consumers (Nenni, Giustiniano, and Pirolo, 2013, p. 3). Retailers are now also offering a wider product variety, which reduces supply chain stakeholder ability to accurately forecast and predict demand (Aftab et al., 2018, p. 212). Mehrjoo and Pasek (2014, p. 297) indicate that providing consumers with an assortment of products that, for example, range in style and colour, can be satisfactory to them but has the potential to challenge the performance of the supply chain. Shen and Li (2015, p. 1173) explain that this can cause variability in sales and increase the supply chain's vulnerability to high levels of unsold inventory. According to Seifert et al. (2015, p. 9), such low predictability makes it challenging to rely on demand forecasts. Strategies that reduce lead times, in order to increase flexibility and time-to-react to changes in demand, have been recognised as valuable to supply chain stakeholders of the modern industry (Seifert et al., 2015, p. 4).

2.2.4. High impulse purchasing

The dynamic, unique and highly impulsive nature of fashion consumers has prompted several studies across various disciplines that include: psychology, marketing and supply chain management (e.g. Khan, Hui, Chen and Hoe, 2016; Joy, Sherry, Venkatesh, Wang and Chan, 2012, p. 277). Studies have shown that consumers are often stimulated by in-store promotions and the presentation of fashion items on mannequins and displays (e.g. Moayery, Zamani, and Vazifehdoost, 2014, p. 361). These fashion purchases are often described as therapeutic and unplanned (Dhurup, 2014, p. 171) and can, as a result, sometimes lead to purchasing regret (Lee and Workman, 2018, p. 265).

2.3. Fashion industry supply chain management

The characteristics of the fashion industry have increased interest in the discipline of supply chain management. Weeratunge (2017, p. 498) describes a supply chain as a '*network of organisations that are involved through upstream and downstream linkages in the different processes and activities that produce value in the form of products and services in the hands of ultimate consumer*'. Lu (2011, p. 9) contends that a supply chain can only exist if more than one organisation is involved. Mentzer et al. (2001, p. 4) suggest the presence of three types of supply chains: '*the direct supply chain*', '*the extended supply chain*' and '*the ultimate supply chain*'. The direct supply chain is simpler and involves three stakeholders: the business, its supplier and customer. The extended supply chain can include the suppliers' suppliers and the customers of the customer. The ultimate supply chain is more complex and includes all internal and extended stakeholders involved in all activities of the supply chain (Mentzer et al., 2001, p. 4). The fashion industry commonly includes: suppliers of raw materials, manufacturers (e.g. textile: fibre, yarn and fabric), warehouses, retailers and consumers of the end products (Fernandez-Stark, Frederick and Gereffi, 2011, p. 11).

The management of the network of stakeholders of a supply chain is referred to as supply chain management. According to Weeratunge (2017, p. 498), the concept of supply chain management is defined as *'management across a network of upstream and downstream organisations of material, information and resource flows that lead to the creation of value in the form of products and or services'*. Research by Setino (2018, p. 3) shows that there are variety of stakeholders involved in the management of the supply chain, that include suppliers, manufacturers and retailers. Along with enabling an organisation to compete in a changing market, Habib (2014, p. 239) states that supply chain management has a goal to *'incorporate activities across and within organisations for providing the customer value'*. Lu (2011, p. 13) explains that supply chain management is a form of business management. However, contrary to the typical business management that is only concerned with the internal activities of one firm, supply chain management considers the activities of external organisations and how they relate to the focal firm. The nature of the fashion industry has encouraged stakeholders to develop and manage competitively and strategically their supply chains.

2.3.1. Fast fashion

The fashion industry's best practices are informed by the characteristics of its products, consumers and operating environment. These were earlier defined based on literature by authors such as Christopher, Lowson and Peck (2004) and Bhardwaj and Fairhurst (2010). Fast fashion has emerged as a competitive time-based strategy that enables stakeholders to successfully mitigate the unpredictable nature of the fashion industry (Arrigo, 2018, p. 122). Camargo, Pereira, and Scarpin (2020, p. 1) define fast fashion as *'a business strategy that focuses on creating an efficient, accelerated supply chain, in order to produce fashionable merchandise and attend to consumer demand'*. Earlier studies, such as Barnes and Lea-Greenwood (2010, p. 761), along with more recent ones, such as Aftab et al. (2018, p. 212- 213) clarify that the key aspects of fast fashion are the lead times and consumer demand. There is an emphasis on constantly and continuously meeting the changing demands of consumers for current and trendy fashion, in a timely and competitive manner. Fast fashion is credited for having made high-priced runway

designs continuously accessible to the masses at inexpensive prices (Bick, Halsey and Ekenga, 2018, p. 1).

Due to the nature of fast fashion, Gabrielli, Baghi and Codeluppi (2013, p. 208) describe this method as consumer-driven. This is opposed to the traditional supplier-driven approach. Gabrielli, Baghi and Codeluppi (2013, p. 208) explain that the concept of fast fashion is influenced by a global culture and not limited to one particular geographical area. As earlier highlighted through Chang (2017, p. 53) and Nash (2019, p. 2-3), it can be proposed that increasing accessibility to information has facilitated this global culture among consumers. Gabrielli, Baghi and Codeluppi (2013, p. 207) reason that this global influence is evident in the origins of two of the world's leading fast fashion pioneers that were established outside the traditional fashion capitals of the world. Zara was founded in Spain, while H&M was established in Sweden.

Fast fashion has appeared as an area of interest in contemporary studies of the fashion industry's most competitive supply chain strategies. Shen, Choi and Chow (2017, p. 6), for example, assess co-branding between luxury brands and fast fashion retailers. Their study concludes that such co-branding can be beneficial towards attracting brand loyal consumers. In addition, Čiarnienė and Vienažindienė (2014, p. 1018) explore the implications of performing agile practices and discovered the use of such strategies can be beneficial to the entire logistics network. Lashen (2012, p. 29) examines the fundamentals of fast fashion and used a case study approach to evaluate how its execution differs in smaller organisations. This researcher found that smaller businesses were less likely to adopt the types of information-sharing systems common in fast fashion companies, due to a lack of finance. However, they were more likely to adopt specific fast fashion strategies tailored to their businesses, in order to remain competitive.

Joung (2014), Gabrielli, Baghi and Codeluppi (2013) and Pantano, Giglio and Dennis (2019) examine fast fashion from the perspectives of consumers. Joung (2014, p. 694) studied the post-purchase behaviours of consumers of fast fashion products. The study found that consumers

who were frequent shoppers were more likely to either throw away or hold on to their used fashion than they were to recycle it. Gabrielli, Baghi and Codeluppi (2013, p. 207), on the other hand, researched the varying consumption habits of consumers of fast fashion. Their study concludes by highlighting consumer positive associations, such as freedom and saving, and negative associations to fast fashion products, such as low quality, and the experience of shopping for such goods (Gabrielli, Baghi and Codeluppi, 2013, p. 219). The objective of Pantano, Giglio and Dennis' (2019, p. 2) research was to assist in the understanding of consumer generated content through analysing the Twitter activity related to three fast fashion retailers. The study offers a systemic method towards understanding the data related to consumer experiences, in order to increase retailer marketing intelligence (Pantano, Giglio and Dennis', 2019, p. 9). Zara has consistently emerged in the literature as a global leader of the concept of fast fashion (Orcao and Pérez, 2014, p. 113; Aftab et al., 2018, p. 213), with its implementation of agile supply chain practices a focal point for such studies.

2.3.2. Agility

Agility has emerged in academic literature as a best practice for fashion industry supply chains that has enabled the development of fast fashion. According to Čiarnienė and Vienažindienė (2014, p. 1014), agility is a '*business-wide capability that embraces organisational structures, information systems, logistics processes and in particular, mindsets*'. It is a customer-driven system that enables stakeholders to be market-sensitive and responsive to the needs of consumers through the timely provision of a wide variety of products (Žitkienė and Deksnys, 2018, p. 117). Agile supply chains are, therefore, attentive to the behaviours and attitudes of consumers, along with the types of factors that influence their decision-making. Žitkienė and Deksnys (2018, p. 118) explain that flexibility to changes in the external environment is at the core of agile supply chains. According to Kaviyani-Charati, Ghodsypour and Hajiaghahi-Keshteli (2020, p. 2), such a strategy is suitable for unstable operating environments. Due to the nature of the fashion industry, this strategy has become popular among stakeholders. Resulting from a need to respond in a timely manner to market changes, agile supply chains are better facilitated through real-time information-sharing technology (Alzoubi and Yanamandra, 2020, p. 276). Niinimäki, Peters,

Dahlbo, Perry, Rissanen and Gwilt (2020, p. 189-190) argue that the agile practices of fast fashion are dependent on constant consumption and unplanned purchasing, resulting in stakeholders producing almost double what was produced pre-2000. Fashion products have also become more affordable encouraging more consumption and waste, due to the low-cost of consumption.

Research from Centobelli, Cerchione and Ertz (2020, p. 324) recognises four characteristics of an agile supply chain: *market sensitivity*, *virtual integration*, *process integration* and *network based*. These are described below:

1st variable; Market sensitivity: Sensitivity to the current trends and the demands of consumers is at the core of agile practices. According to Lou and Rezaeenour (2016, p. 5- 6), sensitivity in agile supply chains allows stakeholders to be more responsive to unpredictable circumstances that may be threatening or advantageous to the supply chain. In order to achieve market sensitivity, stakeholders should pay attention to the consumer. In order to facilitate this, continuous and daily insight into detailed market data is required (Centobelli, Cerchione and Ertz, 2020, p. 324).

2nd variable; Virtual integration: The presence of geographically dispersed and extended supply chains has compromised end-to-end visibility. Virtual integration resolves this by ensuring that real-time information is shared among upstream and downstream partners through information technology (Centobelli, Cerchione and Ertz, 2020, p. 324). Using similar market data allows stakeholders to work together in the supply chain planning process. This enables more resilience to supply chain risks and variances in consumer demands. Şahin, Çemberci, Civelek and Uca's (2017, p. 342) study concludes that integration can result in greater trust among partners in an agile supply chain.

3rd variable; Process integration: The seamless alignment of all relevant stakeholder processes allows for their better management and for the removal of non-value adding processes. This

includes the management of inventory and the product design processes. Centobelli, Cerchione and Ertz (2020, p. 325) highlight the use of virtual processes to enable resilience in global supply chains. Similarly, Alzoubi and Yanamandra (2020, p. 276) put forward that the dissemination of real-time information across the agile supply chain, through information technology, enables responsiveness.

4th variable; Network based: Xu, Liu, Li and Wang (2016, p. 4) describe this aspect as one that is related to how an organisation manages the stakeholders in its supply chain. Modern global brands have expansive networks of supply chain partners. Partners along the supply chain are not in competition with one another, but rather compete as a network. Stakeholders that are successful are those that are able to effectively manage their partnerships in order to meet the needs of the consumer (Xu et al., 2016, p. 4).

2.4. Sustainability in the fashion industry

While the modern business models of the fashion industry have been considerably profitable for stakeholders, their limitations have started to dominate industry and scholarly conversations about sustainable development (e.g. Arrigo, 2020). As such, Popescu (2015, p. 333- 334) deduces that sustainability is now identified as one of the distinct areas of modern and competitive fashion supply chains. Lodder, Huffenreuter, Braungart and den-Held (2014, p. 2) explain that the initial focus of sustainability was on environmental reforms. This is evident in the earlier body of managerial literature (e.g. Hart, 1997; Bradbury and Clair, 1999). In addition, Hur and Cassidy's (2019, p. 10) findings suggest that some stakeholders of the fashion industry commonly associate sustainability with the ecological performance of a business' activities. The environmental focal point of the corporate websites and sustainability reports of companies, such as Zara (e.g. Inditex, 2019, p. 7), provide further evidence of this interpretation.

Previous studies have shown further inconsistencies in the interpretation and definition of sustainability. For example, Aminpour, Gray, Richardson, Singer, Castro-Diaz, Schaefer,

Ramlan and Chikowore's (2020, p. 9) study reviews variances in academic definitions of the term. Their study highlights differences in the perspectives of scholars based on their varying disciplines and locations. In addition, Aminpour et al. (2020, p. 14) observe that definitions can differ between developed and less developed nations, thus challenging seamless academic collaborations across faculties. Arrigo (2020, p. 3) further summarises that a lack of clarity and uniformity in these definitions increases the number of companies that present a dishonest and misleading impression of the extent to which sustainability is applied within their operations. This is often referred to as green-washing.

A frequently referenced definition of sustainability comes from the Brundtland Report published by the World Commission on Environment and Development in 1987. According to the World Commission on Environment and Development (1987, p. 16), sustainable development '*meets the needs of the present without compromising the ability of future generations to meet their own needs*'. This definition established stakeholder focus on decreasing the destructive effects of economic practices (Lodder et al., 2014, p. 2). However, it did not present them with a detailed impression of how to practically apply its principles (Ahi and Searcy (2015, p. 2885). Ahi and Searcy (2015, p. 2882) explain that sustainable development refers to the processes performed to achieve sustainability. They describe sustainability, on the contrary, as a state. Despite their differences in meaning, the two ideas are often interchanged in the body of literature.

In order to measure more effectively a company's performance, with regards to sustainability, more contemporary definitions of the term refer to three distinct interdependent components of performance, namely economic, social and environmental. Joy et al. (2015, p. 274), for example, propose that the concept involves '*complex and changing environmental dynamics that affect human livelihoods and well-being, with intersecting ecological, economic, and sociopolitical dimensions, both globally and locally*'. Similarly, Ahi and Searcy (2015 p. 2884) describe sustainability as '*a complex and multidimensional issue, which merges efficiency and inter- and intra-generational equity on an environmental, economic, and social basis*'. Three main pillars can be identified in the explanations given by Joy et al. (2015, p. 274) and Ahi and Searcy (2015,

p. 2884). They are commonly referred to as the triple bottom line (TBL) (Hourneaux, Gabriel and Gallardo-Vázquez, 2018, p. 414), or the 3P's: people, planet and profit.

The TBL was originally conceived by John Elkington in 1994 (Elkington, 2004, p. 1). It has since been a widely accepted conceptual foundation for many studies across a diverse range of academic disciplines (e.g. Carter and Rogers, 2008; Lodder et al., 2014; Wise, 2019). The execution of sustainable practices in an organisation requires a strategic alignment of the three dimensions of the concept (Elkington, 2004, p. 3). The theme of the TBL also appears in the United Nations' 17 Sustainable Development Goals that participating countries aim to achieve by 2030 (Oriade, Osinaike, Aduhene and Wang, 2020, p. 2; United Nations, 2020, para. 1).

2.4.1. Economic sustainability

Economic sustainability reinforces the need for practices that are profitable and those that foster economic development. Developments in trade policies globalised the fashion industry's supply chain and expanded economic development to underdeveloped regions. More stakeholders aimed to outsource to such regions due to the presence of cheaper labour and limited regulations (Ditty, 2015, p. 6). The Agreement on Textiles and Clothing (ATC), for example, was previously enforced by the World Trade Organisation (WTO), in order to regulate the distribution of clothing and textiles in the global marketplace (Ayoki, 2017, p. 2). Its removal, in 2005, increased global competition, particularly from low-cost countries in Asia (Ayoki, 2017, p. 2; Fernandez-Stark, Frederick and Gereffi, 2011, p. 6). Increased outsourcing to such countries has also significantly reduced the manufacturing of fashion products by other countries including the United Kingdom (Bearne, 2018, para. 4). The enforcement of additional agreements such as the African Growth and Opportunity Act (AGOA) and the Central America Free Trade Agreement (CAFTA-DR) further made it more cost-effective for stakeholders to outsource to low-income nations such as Lesotho and Nicaragua, respectively (Mahabir, Fan and Mullings, 2020, p. 3; Williams, 2015, p. 10; Fernandez-Stark, Frederick and Gereffi, 2011, p. 8). According to Fernandez-Stark, Frederick and Gereffi (2011, p. 20), the shifts in trade policies have resulted in

developing economies participating in varying stages of the supply chain, based on the types of resources they have. Lesotho, for example, is currently mainly involved in the assembly of products, while Sri Lanka is involved in the designing of products. This geographic dispersion of supply chain processes has increased the complexity of the logistics network.

Several studies have focused on the economic improvement of business practices from a sustainability perspective. They reveal a contemporary approach to enhancing economic sustainability that is not independent of other pillars of the TBL. Using Microsoft Excel, Bottani, Tebaldi, Lazzari and Casella (2019, p. 361-362), for example, developed an analytic model to quantitatively evaluate the economic and environmental sustainability of a fashion supply chain. While limited to warehouse processes, they assessed the total costs and carbon emissions of supply chain processes in a bid to provide industry stakeholders with a practical tool for potential areas for improvement. The model was tested on an apparel company based in Italy. In addition, Shen, Choi and Lo (2015, p. 2) used a case study approach to observe the adoption of the markdown money policy (MMP) by two fashion industry suppliers based in China and in the USA. Using Hofstede's national cultural dimensions, they aimed to evaluate how this supply chain contract can be used to improve economic sustainability across different cultural environments. Their study reveals that long-term economic sustainability, in a globalised industry, requires a more strategic approach to trade agreements that is cognisant of cultural variances.

2.4.2. Social sustainability

Social sustainability refers to the impact of an organisation's activities on all internal and external supply chain employees, consumers and communities (Sudusinghe and Seuring, 2020, p. 3; Benoit-Norris, Cavan and Norris, 2012, p. 1948). The labour-intensive nature of the fashion industry has often appealed to the expansion of developing economies. However, workers in a significant number of these locations are financially exploited and subjected to discriminatory, inferior and unsafe working conditions that violate their basic human rights. According to

Khurana (2016, p. 91), these violations frequently occur because workers in such areas are not commonly educated and oftentimes do not have knowledge of their rights. Despite the International Labour Organisation's (ILO) goal to eradicate the use of child labour, Perry and Wood (2019, p. 13) identify that this is still a consistent major challenge in the production of fashion products in emerging economies. While the fashion industry is revered for providing employment to largely unskilled women, Ditty (2015, p. 8) and Stafford (2018, para. 13) also insist that it is not uncommon for those in poorer regions to be overworked or face sexual harassment and discrimination in the work environment.

Employees of the fashion industry are, as well, exposed to a wide range of occupational hazards including exposure to dangerous chemicals and cotton dust that may affect their health (Bick, Halsey and Ekenga, 2018, p. 2). The fatal collapse of the Rana Plaza factory in Bangladesh increased the spotlight on the operational standards of supply chain stakeholders (Bair, Anner and Blasi, 2020, p. 2; Ditty, 2015, p. 8). Fernandez-Stark, Frederick and Gereffi (2011, p. 20) recognise Bangladesh as an emerging low-cost region, popular for the manufacturing of fashion products. As such Rana Plaza housed several factories that supplied many large and popular international brands such as Joe Fresh, Primark and Children's Place (O'Connor, 2014, para. 4-16). This disaster revealed the limited end-to-end visibility, transparency and accountability in the supply chains of these fashion brands, as brands such as Joe Fresh were found to unknowingly have extended networks that included such substandard factories (O'Connor, 2014, para. 11).

Recent studies show stakeholder interest in enhancing the social sustainability of the fashion industry. Huq and Stevenson (2020, p. 416) identify the need for studies that assess social sustainability in organisations in developing countries. Their study uses a multiple-case study approach to evaluate social sustainability in seven apparel suppliers based in Bangladesh. They reveal institutional challenges that affect the ease of adoption of socially sustainable practices in developing economies (Huq and Stevenson, 2020, p. 436). Benstead, Hendry and Stevenson (2020, p. 2) explore methods for detecting slavery in modern supply chains using action research. Their study evaluates the end-to-end staffing process of a factory, including that of third-party

recruiters. They further aimed to detail remediation plans that can be administered where modern slavery is detected. Benstead, Hendry and Stevenson (2020, p. 15) recommend a collaborative approach to detecting and remedying modern slavery that involves stakeholder cooperation with NPOs. Benoit-Norris, Cavan and Norris (2012, p. 1962) studied the Social Hotspots Database (SHDB) which provides global insight into supply chain activities and processes that are likely to have a high social risk. While the empirical data is limited to the activities of the supply chain of strawberry yoghurt, their findings present a useful foundation for further application to other industries that include the fashion industry.

While the performance of all three components of the TBL is essential towards achieving sustainability, scholarly studies show a greater focus on economic and environmental sustainability than on social sustainability (Ahi and Searcy, 2015, p. 2885). Literature shows potential concerns regarding the costs of focusing on social sustainability. Bair, Anner and Blasi (2020, p. 2) researched the intersection of private and public governance of workers in global supply chains. They evaluated the impacts of new regulations, in the form of the Sustainability Compact and the Bangladesh Accord. The Sustainability Compact is an agreement that the government of Bangladesh has with governments of the European Union (EU), USA and Canada, along with the ILO, in favour of ensuring improvements to the safety of ready-made garment workers and the maintenance of their rights (European Commission, 2016, p. 6-7). The Bangladesh Accord on Fire and Building Safety is an agreement between Bangladeshi unions and global retailers, which was announced in 2013. Under this agreement, Bangladesh committed to enhancing the working conditions of garment workers, with particular focus on health and safety. This agreement was since renewed as the 2018 Transition Accord (Bangladesh Accord, 2018, para. 2-3). These agreements were both enforced in response to the Rana Plaza incident. Bair, Anner and Blasi's (2020, p. 18) study revealed resistance from public and private entities in Bangladesh who, given the financial costs of empowering the workforce and improving the working conditions, were met with global brands still pressuring for reduced prices.

The literature reviewed reveals that stakeholders have historically been attracted to outsourcing to locations that have lower costs, limited regulations, and consequently, poor working conditions. From this literature, it can be assumed that high profitability is not always feasible in socially sustainable environments. However, more recent research by Sudusinghe and Seuring (2020) recognises that the economic performance of a supply chain can be improved with the administration of socially sustainable practices. Using a sample of 119 managers in the apparel manufacturing sector of Sri Lanka, they evaluate the impact of internal social sustainability practices (ISSP) that includes the empowerment of women, gender equality and employee training. They compared these with external social sustainability practices (ESSP) that include the employment of youth, philanthropic activities and disaster/emergency planning or response. Although Sudusinghe and Seuring (2020, p. 14) conclude that activities that facilitated both the internal and external social sustainability of a company had a positive influence on its economic performance, they found that internal social sustainability had a significantly greater influence. Lollo and O'Rourke (2020) have similar conclusions. Using a quasi-experiment, the authors examined the effects that the prospect of increases in wages would have on workers of clothing factories. Their findings revealed a positive change in worker attitude, productivity and engagement that would ultimately improve profits (Lollo and O'Rourke, 2020, p. 12- 16).

2.4.3. Environmental sustainability

Environmental sustainability involves the preservation of natural resources. Recent exposure of the fashion industry's environmental limitations has made it a key area of interest for scholars and practitioners (e.g. Smal, 2016; Shen, 2014; Popescu, 2015; Åkerberg, 2015). This is largely due to the widespread adoption of fast fashion strategies that has resulted in a drastic increase in the production and consumption of fashion products. According to Shen (2014, p. 6236), more than 30 million tons of textile products are produced and consumed across the world each year. Research on the consumption behaviours of modern consumers frequently places them under two categories: purgers and pack-rats (e.g. Weng, Ting, de Run and Tan, 2016, p. 333; Marciniak and Mohsen, 2016, p, 205). The purgers are more inclined to dispose of their used products in anticipation of purchasing more, while the pack-rats create emotional attachments to their

possessions that prevent them from disposing of them. Fast fashion has facilitated a greater purging society. Bick, Halsey and Ekenga (2018, p. 2) estimate that the affordability of products, and the corresponding low quality, has encouraged a *'throwaway culture'* among consumers and reduced consumer emotional connection to apparel. Similarly, Bertram and Chi's (2017, p. 258) research reveals that the frequent purchase and disposal of cheaper apparel is common in younger consumers who are often influenced by the planned obsolescence of fashion trends. Hur and Cassidy's (2019, p. 15) research shows that this influence extends to the product design, as a respondent in their study assessed that sustainability had a lesser role in this process than current trends. This presents contrasting perspectives, as other referenced studies, such as Wang (2017, p. 9) and Liu and Hei (2021, p. 17), also refer to younger consumers as being more interested in the sustainable practices of industries.

The fashion industry's agile practices have increased the amount of waste it produces in the production of fashion products and post-consumption. Much of this waste ends up in landfills, including that which is in a condition to be reused. What is more, a significant amount of used fashion is redirected to developing economies (Bick, Halsey and Ekenga, 2018, p. 2), particularly those in Sub-Saharan Africa (Brooks and Simon, 2012, p. 1265). Brooks and Simon (2012, p. 1268) estimate that the growing amount of secondhand fashion dumped into emerging markets from developed countries has competitively disadvantaged their local industries. In addition, Bick, Halsey and Ekenga (2018, p. 2) explain that used fashion products that are not sold in underdeveloped markets, often end up contributing to the landfill waste of such nations.

The fashion industry is also resource-intensive (Hur and Cassidy, 2019, p. 1). Products are either developed using natural or man-made fibers (Dal, 2019, p. 513). According to Bick, Halsey and Ekenga (2018, p. 2), polyester and cotton account for an estimated 90% of the total apparel sold in the USA. The cultivation of cotton, a natural fiber, for one shirt requires an estimated 2 700 liters of water. Polyester, on the other hand, is a synthetic, non-renewable fibre that is petroleum-based. It is extracted and produced using energy-intensive methods (Bick, Halsey and Ekenga, 2018, p. 2). The nature of this non-organic fabric compromises its disposal, thereby increasing the industry's non-disposable waste (Ndachengedzwa and Stecca, 2016, para. 6).

Khurana (2016, p. 92), as well, identifies the fashion industry as one that utilises high levels of energy. This energy consumption occurs in all areas of the supply chain, including in the lighting of offices and retail stores. It also extends to the maintenance of the fashion products during consumption, for example, in the laundering processes.

Increases in the fashion industry's environmental footprint is evident across the life-cycle of each product. This begins in the upstream activities of the supply chain. The use of pesticides in the farming of raw materials not only compromises the health of workers, but is also harmful to the environment (Mukherjee, 2015, p. 31). Moreover, the dyeing of textiles requires large amounts of water. Similarly, Paraschiv, Tudor and Petrariu (2015, p. 1282) state that this process contributes to water pollution, as these chemicals are often discharged into local water sources, particularly in China. These toxic substances compromise the safety of these water sources and negatively affect sea life (Lellis, Fávaro-Polonio, Pamphile and Polonio, 2019, p. 276). The maintenance of fashion products, post-purchase, also has an impact on the quality of water. While the use of detergents that have phosphates has been banned in some developed countries, the outsourcing of fashion production to underdeveloped regions, with limited regulations, introduces phosphates into the supply chain's products (Paraschiv, Tudor and Petrariu, 2015, p. 1281).

There is a diverse presence of scholarly discussions that focus on enhancing the environmental sustainability of the fashion industry. Cimatti, Campana and Carluccio (2017, p. 400) analysed the benefits of environmentally sustainable designs and manufacturing. Their study, which focuses on luxury brands, details how potential practices such as recycling and waste reduction, could appeal to consumers that are environmentally conscious. Bertram and Chi (2017, p. 261-262) examined the environmental consequences of E-commerce. Their study found that the environmental impact of E-commerce is far less, in comparison to traditional stores. However, they highlight four areas of improvement: the packaging of the products; the transportation of sold products to consumers; the return of products (which is higher in online stores than in brick and mortar stores), and the disposal of products. In addition to this, Paraschiv, Tudor and Petrariu (2015, p. 1282) explored the textile industry's contribution to water pollution in Central

and Eastern European nations and compared it to other countries such as China. Their study reveals that Poland and Romania, for example, are on the verge of significantly eliminating pollution from their textile industries (Paraschiv, Tudor and Petrariu, 2015, p. 1287).

2.5. Sustainable supply chain management

According to Ahi and Searcy (2015, p. 2885), supply chain management has an effect on all facets of an organisation's TBL. As such it is essential to understand how it relates to sustainability, and how this has contributed to the development of concepts such as CLSCM. The globalised nature of supply chains makes them inevitable contributors to the world's social and environmental issues (Chearavanont, 2019, para. 2-3). Koberg and Longoni (2019, p. 1084) summarise that sustainable supply chain management which is '*concerned with integrating environmental, social and economic goals across a firm's supply chain processes, has emerged as an approach for firms to improve sustainable (i.e. environmental, social and economic) outcomes in their supply chains*'. Similarly, Bui, Tsai, Tseng, Tan, Yu and Limas (2020, p. 373) express that it involves the collaboration of all stakeholders in order to achieve all three aspects of the TBL.

Ahi and Searcy (2015, p. 2886-2887) identify factors that can facilitate the application of sustainable supply chain management practices. These factors may exist in the internal or external environments of an organisation. Pressure can come from primary stakeholders. These include consumers (Gualandris and Kalchschmid, 2014, p. 104), whose influence and adoption of the products and services of such systems is vital. Amjed and Harrison (2013, p. 1) elaborate that customers, as external stakeholders, are becoming more supportive of businesses that are wholly ethical in their operations. Pereseina, Jensen and Hertz (2014, p. 2) add that the demand for increased sustainability is not only from final consumers but is also from business-to-business customers. However, the study by Pereseina, Jensen and Hertz (2014, p. 14) shows that the level of this demand varies as stakeholders in developing economies may

understand the concepts of sustainability but have less pressure for adoption, as compared to companies in more developed countries.

Gualandris and Kalchschmid (2014, p. 104) also discuss pressure from secondary stakeholders, such as governments and NPOs. For example, the presence of NPOs, such as the Fashion Revolution, and the media that frequently report the social and environmental limitations of the fashion industry, has influenced sustainable development in its global activities. By the same token, changes in regulations can pressure stakeholders to comply with sustainable supply chain practices. Kumar, Brint, Shi, Upadhyay and Ruan (2019, p. 2) discuss the growing international and local governmental pressure for SMMEs in China to adopt sustainable supply chain management practices. There is also pressure on these stakeholders to have certifications, such as ISO4001, in order to monitor their performance with regard to sustainability practices. The internal and external enablers of sustainable supply chain management in a focal organisation can exert pressure that often then extends to stakeholders in its supply chain. Oelze, Gruchmann and Brandenburg (2020, p. 1) claim that such pressures demand flexibility within stakeholders of the apparel supply chain, in order to be adaptable to constant developments in sustainability requirements.

In addition to enablers, there are several challenges that can complicate or hinder the successful administration of sustainable supply chain management practices, including those of CLSCM. Pereseina, Jensen and Hertz (2014, p. 6) explain that there is an existing conflict between the economic and environmental objectives of supply chains. As a result, the initiatives that facilitate each of the three components of the TBL do not always complement one another in the supply chain. Ahi and Searcy (2015, p. 2884-2885) further state that there are a number of uncertainties and complexities in the measurement of a supply chain's sustainability performance. The presence of several stakeholders is classified as a factor that complicates the end-to-end management of sustainable initiatives in the supply chain and makes it challenging for stakeholders to have a true impression of the sustainability performance of the entire supply chain. Kozlowski, Searcy and Bardecki (2015, p. 378) speculate that a lack of uniformity in the definition of sustainability challenges its execution in the apparel industry. The authors equally

observe the presence of diverse categories of products, such as sportswear, fast fashion and luxury fashion, which each require different approaches to sustainability. The complex nature and strategic positioning of this field therefore calls for an in-depth understanding of the role of sustainability in the supply chain, in order to facilitate significant change.

Several contemporary studies examine the administration of sustainable practices in the supply chain. Green, Zelbst, Meacham and Bhadauria (2012, p. 291) studied green supply chain management in order to develop and evaluate a model for the performance of practices that support such a system. They suggest two stages of implementation. The first stage involves an internal acceptance of green supply chain management practices across the entire organisation. This includes the adoption of technologies that support and monitor such systems. The second stage involves environmentally sustainable sourcing and supplier selection, engagement with consumers, eco-friendly product and service designs, and investment recovery (Green et al., 2012, p. 299). Ha-Brookshire, McAndrews, Kim, Freeman, Jin, Norum, LeHew, Karpova, Hassall, and Marcketti (2017, p. 2) examined the role of moral education in the development of sustainable strategies in global supply chains of the apparel and textile industry. They recognise the importance of educating supply chain professionals to assist in morally challenging circumstances. Such circumstances can require decision-making that will impact the sustainability performance of an organisation and its supply chain. Ha-Brookshire et al. (2017, p. 3-4) emphasise that individual decisions can enable or prevent sustainable development. The authors further clarify that moral decision-making is more challenging for global supply chains, as professionals need to be constantly aware of the roles of varying cultures and regulations.

The Sustainable Supply Chain Management Framework was developed by Carter and Rogers (2008, p. 368) in order to establish ways in which sustainability could be applied to the field of supply chain management. Inconsistencies in the interpretations and definitions of sustainability, along with a lack of research of its application in the field of supply chain management motivated their study. Identifying the interconnections that exist among the three pillars of the TBL was a focal point of their research.

Carter and Rogers (2008, p. 368) considered themes in academic literature that reveal the following supporting factors of sustainability:

1. **Organisational strategy and culture:** An organisation's goals of achieving the optimum level of sustainability must be seamlessly aligned to its overall corporate strategy and culture.
2. **Risk management:** As global supply chains are exposed to a variety of risks, building agility in the supply chain risk management process can facilitate swift reactions to unanticipated situations.
3. **Transparency:** End-to-end visibility is required in order to build a resilient supply chain and enhance integration and collaboration among supply chain stakeholders.

2.5.1. Transparency in reporting

Kozlowski, Searcy and Bardecki (2015, p. 388) and Egels-Zandén, Hulthén and Wulff (2015, p. 3) discuss transparency in sustainability reporting. Kozlowski, Searcy and Bardecki (2015, p. 378) recognise a growing interest in the sharing of information, for example, on corporate websites and in annual financial reports about the sustainability efforts of apparel brands. Egels-Zandén, Hulthén and Wulff (2015, p. 3) discuss that these are necessary in the modern environment where accountability is now a requirement to avoid public backlash. This type of transparency is now demanded by NPOs that advocate for the improvement of practices in the fashion supply chain (Ditty, 2015, p. 4). While Moore (2016, p. 3) expresses that consumers are largely uninformed about the sustainability costs of individual fashion products, Kim, Kim and Rothenburg (2020, p. 1-3) insist that there is an increasing demand for brands that are transparent about their costs and processes. The authors reiterate that sustainability and transparency of such information is more valuable for the modern consumer. This interest has resulted in the popularity of transparent brands such as Everlane and Patagonia.

2.6. SMME adoption of sustainable supply chain practices

There is an expansion in the academic literature that pertains to the employment of sustainable practices by SMMEs. The National Small Business Act 102 of 1996, in South Africa, formally defined these enterprises as *'a separate and distinct business entity, together with its branches or subsidiaries, if any, including cooperative enterprises, managed by one owner or more, predominantly carried on in any sector or sub-sector of the economy'* (Department of Small Business Development, 2019, p. 1). The Act distinguishes three categories for classifying SMMEs. These include the size of the enterprise, the number of staff employed full-time by the firm and the total annual turnover. The classifications vary according to the type of industry (Bruwer and Coetzee, 2016, p. 201). The industry and sector classifications show that such enterprises function and exist across a variety of industries and are present in both upstream and downstream activities of the supply chain (Department of Small Business Development, 2019, p. 2). They are also often established within cities or townships (Bvuma and Marnewick, 2020, p. 1).

The roles of SMMEs in South Africa are frequently defined from an economic perspective. This is because the activities of SMMEs had an initial objective to provide employment opportunities that reduce poverty and ultimately increase the economic performance of South Africa (Cant and Rabie, 2018, p. 231). The African Development Bank Group (2018, para. 1) narrates the economic value of the fashion industry to Africa. It notes this value with reference to the economies of the continent's developing countries. The African Development Bank Group (2018, para. 1-14) specifically suggests the economic value that can be drawn from the fashion industry, by:

1. Establishing a competitive advantage created around the continent's diverse cultures and originality.
2. Increasing economic activity and development.
3. Providing skilled and unskilled employment for women and young people.

4. Enhancing the skills of the labour market and producing information, goods and services that are unique to the African content.
5. Promoting the development of economies and industries.
6. Facilitating collaborative efforts in the region, trading opportunities and increasing the amount of products and services exported.

Despite the large global presence and reliance on the activities of SMMEs, studies on their contribution to the sustainability of industries are limited. Kumar et al. (2019, p. 15) assert that SMMEs are more inclined to purchase based on quality and price. However, a review of literature by Ashby and Smith (2014, p. 3) reveals that SMMEs are well-positioned and flexible enough to execute innovative sustainable practices, as their strategies are often aligned with the founder's personal values and interests. Additionally, SMMEs often do not have shareholder pressure to focus mainly on profitability. Along with this, Ashby and Smith (2014, p. 3-4) found that the presence of interpersonal relationships between SMMEs and supply chain stakeholders can also facilitate transparency and collaborative efforts towards achieving end-to-end sustainability. On the contrary, Fetter (2019, p. 154) proposes that SMMEs should participate in the environmental sustainability of global supply chains. The author argues that changes in regulations and in the requirements of supply chain partners expose a competitive need for SMMEs to be environmentally sustainable. Requirements for certifications such as the ISO4001 can encourage the adoption and maintenance of these practices (Kumar et al., 2019, p. 20). These developments again present opportunities for SMMEs to expand and develop themselves within local and international markets.

2.6.1. Challenges of adoption

The literature discusses several factors that inhibit the successful adoption of new strategies by SMMEs. These include those that facilitate sustainable supply chain management. It is also necessary to consider these factors as potentially challenging towards the successful adoption of CLSCM by SMMEs in South Africa. Challenges of adoption are often linked to the vulnerability

of such organisations, particularly in their first years of operations (Small Enterprise Development Agency, 2018, p. 14). Due to the economic significance of these businesses, the South African government values their preservation. However, their failure rate is still high. The Small Enterprise Development Agency (2018, p. 14) reported a 15% decrease in the number of SMMEs operating between the last quarter of 2017 and the end of the first quarter of 2018. Bvuma and Marnewick (2020, p. 5) reason that such challenges can occur as a result of operational restrictions, such as limited access to finance. Resources that include financial assistance and training are therefore provided to support the longevity of such firms.

The body of knowledge that explores the challenges facing SMMEs and the methods of improving their operations is increasing. Cant and Wild (2013, p. 708-709) distinguish macro-economic and micro-economic factors that affect the survival of SMMEs. A study by Yurchynska and Serdiuk (2018, p. 86) further considers the influence of psychological factors. Research on the enforcement of sustainable supply chain practices by SMMEs reveals similar factors that often hinder the successful adoption of these strategies (e.g. Kumar et al., 2019, p. 6-7).

2.6.1.1. Macro-economic factors

Macro-economic factors exist outside of the internal operations of an SMME (Rusu and Roma, 2016, p. 143; Bruwer and Smith, 2018, p. 49). As a result, the business does not have direct control over them. External environmental factors may include legislation, the economic performance of the country and the rate of crime. Measures to control the spread of the COVID-19 pandemic in 2020, for example, limited the trading operations of many SMMEs and compromised the purchasing power of consumers. The adverse effects of this economic situation was a decrease in profits generated and a contraction in the operations of such firms (McKinsey & Company, 2020, p. 5). The Small Enterprise Development Agency (2018, p. 6) reported that new ventures were the most vulnerable to such unforeseen events. Likewise, Dahan and Peltekoglu's (2011, p. 6) study of SMMEs in the Turkish apparel industry found that

globalisation and competition from fast fashion international giants such as Zara challenges the operations of these businesses. The authors conclude that such agile strategies are often outside the financial, operational and knowledge capacity of SMMEs, putting them at a competitive disadvantage. Research by Donga, Ngirande and Shumba (2016, p. 61) reveal similar challenges experienced by SMMEs in South Africa. Their findings show that competition from established organisations affects the development of SMMEs.

2.6.1.2. Micro-economic factors

Micro-economic factors are within the immediate control of the establishment. These factors can include the skills of internal stakeholders, and the quality of the products and services being provided. Additionally, they may equally include the extent of customer satisfaction and the financial positioning of the business (Bruwer and Smith, 2018, p. 49). Other factors are the business' operational and marketing strategies and the management of the business' finances (Cant and Wild, 2013, p. 709). While these factors are within the control of the business, their successful administration may be especially challenging for SMMEs that do not have access to such knowledge. Donga, Ngirande and Shumba (2016, p. 61) found that a significant number of SMMEs are of the opinion that funding policies and financial institutions are discriminatory. This particularly affects unregistered SMMEs operating in the informal market. Their study further found that while SMMEs acknowledge the importance of technological advancements, several are not financially able to acquire such (Donga, Ngirande and Shumba, 2016, p. 61). Limitations in knowledge can, in a similar manner, hinder their adoption of new technologies. Donga, Ngirande and Shumba (2016, p. 61) further estimate that 70% of owners are not trained before establishing their organisations. Similarly, Kumar et al.'s (2019, p. 7) study reveals that SMMEs understand the value of performing environmentally sustainable practices, however, their limited resources and capabilities, and a lack of expertise impact their successful adoption rate.

2.6.1.3. Psychological factors

Psychological factors refer to the state of mind and behaviours of the owners of the business. They can impact the success rate and resilience of the business and its operations. Yurchynska and Serdiuk (2018, p. 89) explain that psychological influences may result from how the entrepreneurs were encouraged to establish their businesses. The authors discuss factors such as advice from peers, personal interest in owning a business, and discovering opportunities through market research. Similarly, Ashby and Smith (2014, p. 3) consider an owner's desire to be ethical or sustainable. Psychological influence further includes objectives for owning the business. Entrepreneurs may have recognised a need or opportunity to pursue a dream, anticipated significant financial returns from such an initiative or were in pursuit of independence. Some of these factors are also yielded as potential motives for entrepreneurial activities. Yurchynska and Serdiuk (2018, p. 92) further conclude that entrepreneurs can experience success in their businesses if they are determined, have a purpose and a desire to succeed.

2.7. Consumer engagement in sustainable supply chain practices

Wankowicz (2016, p. 344) suggests that developing a sustainable fashion industry supply chain involves the management of '*resource production and extraction, fibre and yarn manufacturing, textile manufacturing, apparel assembly, packaging, transportation and distribution, consumer use, recycling and ultimate disposal*'. The final stages of Wankowicz's (2016, p. 344) description involves consumers and their consumption behaviours. Through an adapted model, Kozlowski, Searcy and Bardecki (2015, p. 384) included consumer engagement as one of five themes representing commercial activities that would support a sustainable focal firm in the apparel industry. According to the authors, consumer engagement is essential towards improving the sustainability of the entire system, due to consumer role in consumption and post-consumption activities. Post-consumption activities, for example, are often motivated by the quality of the product, its trendiness, sentimental value or the financial benefits that can be

derived from reselling. However, consumers are said to be more inclined to discard their clothing, than to donate it, due to the extra effort required in the latter (Lee, 2012, p. 21- 22). Despite these findings, more recent literature argues that there are still increasing sustainability demands from consumers. This suggests that their engagement would be essential to the development of a sustainable industry (Kim, Kim and Rothenburg, 2020, p. 1). This is particularly true for Generation Y and Generation Z consumers that actively search for products that are sustainable (Kim, Kim and Rothenburg, 2020, p. 1) and require transparency from the fashion industry (Kim, Kim and Rothenburg, 2020, p. 11-12). University students from these two generations represented the majority of those that responded to this study's questionnaires. As such, it was deemed necessary to further define who these consumers are.

Understanding the characteristics of Generation Y and Generation Z, as students, employees, entrepreneurs and consumers has been of great interest to many researchers (e.g. Wang, 2017; Naidu, 2018). Ordun (2015, p. 53) describes Generation Y as, globally, the second largest population. In South Africa, this cohort represented 36 % of the country's population in 2018 (Dalziel and Bevan-Dye, 2019, p. 534). This segment of the population is, in addition, identified as having a significant buying power that is further increased by its influence on the purchasing decisions of its parents (Ordun, 2015, p. 53). Research by Lee (2012, p. 14) further shows that consumers of this generation prioritise purchasing products, particularly clothing. This generation is also noted as having increased access to information, compared to previous generations (Ordun, 2015, p. 53). Consumers of this generation are described as the '*the first digital natives*' (Gazzola, Pavione, Pezzetti and Grechi, 2020, p. 8). Despite its high consumption of products, Generation Y is also noted as socially and environmentally aware. This interest in sustainability is considered in its buying decisions (Wang, 2017, p. 9). However, research by Wang (2017, p. 31) shows that this cohort is more likely to purchase sustainable fashion products where there is peer pressure. According to Claude, Malek and Runnvall (2018, p. 14), this is owed to the growth of social media and a growing reliance on acquiring opinions about products and services from such platforms.

Similar to Generation Y, Generation Z is identified as an empowered cohort (Naidu, 2018, p. 4; Wang, 2017, p. 31). According to Liu and Hei (2021, p. 17), this generation will eventually take over as more influential when it comes to its buying power. Consumers of this generation are also regarded independent in their fashion purchasing decisions, but are significantly influenced by social media and brand image (Naidu, 2018, p. 80). Generation Z is also referred to as ‘*Generation Green*’ due to the role that sustainability has in its purchasing decisions (Liu and Hei, 2021, p. 17). Wang (2017, p. 31) argues that while Generation Z is not motivated by peer pressure in the same way as Generation Y, consumers in this cohort are more inclined to purchase sustainable fashion products as they follow trends. They are also more inclined to purchase sustainable fashion products if there is an economic benefit linked to them (Liu and Hei, 2021, p. 19), particularly if it is more affordable to do so (Brantemo, Carlstedt and Wilhelmsson, 2020, p. 39). Generation Z also actively participates in campaigns for environmental reform and has prominent young activists, such as Greta Thunberg, that have emerged at the forefront of these initiatives (Marques, Marques and Ferreira, 2020, p. 2).

2.8. Relevance to the gap in literature

The focus of this chapter has been to build an impression of the activities of the fashion industry supply chain that have contributed to its issues with sustainability. Issues such as an increase in post-consumption waste, the use of child labour, and low working conditions for factory workers have inspired a need for reform in the industry. These discussions have led to an exploration of CLSCM as a means for addressing some of the sustainability problems of the industry. The sustainability benefits of these circular systems are discussed in more detail in Chapter Three, however, this chapter creates a background for this, and develops a foundation for understanding the potential challenges of adoption for SMME retailers in South Africa, as a developing country. This chapter also starts to focus on African based SMME retailers that are frequently neglected in studies on CLSCM, particularly those of the fashion industry. With reference to this study’s qualitative empirical research, the element of sustainability was also revisited in the interviews with participants to understand their impressions on the subject, the role this currently had in SMME businesses, and the extent to which this would impact SMME retailers and their

relationships with their supply chain stakeholders. This was used as a foundation for determining whether SMME retailers would have a positive or negative perception of adopting CLSCM activities.

Research shows that collaborative efforts are required in the adoption of CLSCM activities, with reference particularly made to the roles of consumers (e.g. Wang, Hazen and Mollenkopf, 2018, p.481; Abbey and Guide, 2017, p. 378). However, studies (e.g. Abbey et al., 2015) fail to integrate the perceptions of multiple stakeholders. The purpose of this study is to also address such a gap by including perspectives from consumers, a CMT stakeholder that manufactures for SMME retailers, and an NPO that campaigns for sustainable practices in South Africa's fashion industry. These perspectives were integrated in order to develop a decision support model to aid in the adoption of CLSCM activities. As SMME retailers are the focus of the study, an overview of their contributions to the South African economy is given in this chapter, further motivating the need for a study of this nature. Understanding the factors that enable and hinder their survival is essential for determining the extent to which sustainable practices such as CLSCM can be adopted.

Research also highlights consumers as essential stakeholders for achieving sustainable supply chain management. This argument is consistent in literature on CLSCM. For this reason, the perceptions of university students, as consumers, are explored in this study. The selection of university students draws inspiration from studies such as Alm, Beery, Eiblmeier and Fahmy (2021, p. 61) that explain the role of universities in facilitating education about sustainability, and enabling future progress towards more sustainable practices. It was for such a reason that it was assumed that a university would provide a suitable location for determining current and future market opportunities for the products and services of CLSCs. This also informed the types of SMME retailers approached for the study. With a majority of respondents for the quantitative section of this study being Generations Y and Z, reviewed literature by authors, such as Wang (2017, p. 9) and Liu and Hei (2021, p. 17), provided further insight into sustainability interests of these cohorts, thus showing the value of selecting a university to collect data for this study. To support this, this chapter provides an impression of the characteristics of Generation Y and Z

consumers. It is also necessary to note that there has been no identified literature of CLSCM in the fashion industry that integrates its investigation of the perceptions of SMME retailers and the university students they potentially serve.

2.9. Conclusion

The fashion industry's characteristics have encouraged the utilisation of business models that enable stakeholders to be more agile and responsive to the temporary needs of consumers. Such strategies have been profitable for international retailers such as Zara and H&M, and have inspired several studies into the operations of these supply chains. However, widely adopted models such as fast fashion have compromised the social and environmental sustainability of global supply chains. They have further exposed the industry to much criticism. As a result, there is an expansion of literature that examines the adoption of sustainable supply chain practices. While a lack of uniformity has been an issue for scholars and industry practitioners, recent studies have developed areas that supply chain professionals can focus on in order to improve the sustainability of their logistics networks. The involvement of SMME retailers in sustainable supply chain management discussions is in its infancy in comparison to that of larger organisations, however research shows that due to their economic value to the global environment, such stakeholders should not be excluded from these conversations. This is despite the limitations that SMME retailers may experience due to their sizes. Consumer engagement in sustainable supply chain management was also highlighted, with Generation Y and Z consumers, who represent a majority of the consumers who participated in this study, appearing in literature as significant consumers of fashion products, despite their interest in social and environmental sustainability.

CHAPTER THREE: LITERATURE OF CLOSED-LOOP SUPPLY CHAIN MANAGEMENT

3.1. Introduction

Stakeholder interest in enhancing the economic, social and environmental sustainability of the fashion industry's practices has resulted in an expansion of relevant academic literature. However, a significant number of such studies analyse improvements in the internal operations of the linear supply chain, thereby excluding stakeholder compliance post-consumption (e.g. Bottani et al., 2019, p. 361- 362). To facilitate end-to-end sustainability, CLSCM has surfaced in literature. This concept, while widely researched and enforced by the electronic and automobile industries (Hong et al., 2015, p. 12), is relatively novel in the fashion industry. Its employment by fashion industry stakeholders in Africa's developing nations was also not considered in literature. These countries rely heavily on the activities of SMMEs, operating in the formal and informal sectors, to create employment and boost their economies (Cant and Rabie, 2018, p. 231). As a result, this study contributes to the body of knowledge by exploring the potential adoption and coordination of CLSCM activities by SMME fashion retailers in an emerging economy in Africa. The study does this by evaluating the perspectives of multiple stakeholders in South Africa, including SMME retailers, and university students as potential and future consumers of the products and services of CLSCs.

The literature review is divided into two chapters. Chapter Two presented an overview of the fashion industry's characteristics which have led to the enforcement of business models that compromise the sustainability of the industry's global supply chains. It then provided a detailed analysis of sustainable supply chain management and its application in the fashion industry. This chapter discusses the concept of CLSCM. It gives insight into the activities of these systems and the challenges of operation. It then evaluates their application in the fashion industry. The chapter further gives insight into the economic contributions of SMMEs in developing African countries. These insights are mainly based on the South African economy. A discussion is then

presented of the challenges faced by SMMEs that may compromise their adoption of sustainable supply chain practices such as CLSCM. It concludes by reviewing the gaps in literature that motivated this study.

Chapter three provides a background for addressing the following research objectives:

- Research objective one: To assess the sustainability contributions of CLSCM in the fashion industry.
- Research objective two: To determine the extent to which product knowledge would impact the adoption of CLSCM.
- Research objective three: To assess the extent to which perceived benefits would influence the adoption of CLSCM activities.
- Research objective four: To analyse how perceived risks would affect the adoption of CLSCM.
- Research objective five: To determine how consumer frame of reference would impact CLSCM adoption.

3.2. Closed-loop supply chain management

Since its development as a discipline, the primary objective of supply chain management has been to establish successful forward-driven supply chains that develop products with upstream partners to sell to consumers (Huang, Song, Lee and Ching, 2013, p. 512). However, as the body of literature expands, the concept of supply chain management is evolving and the roles of both consumers and supply chain partners are broadening. Two concepts have emerged in academic discussions about the future directions of the discipline: reverse logistics and CLSCM (Meyer et al., 2017, p. 2; Kumar and Kumar, 2013, p. 156).

The concepts of reverse logistics and CLSCM are sometimes used interchangeably; however while closely related, researchers such as Govindan, Soleimani and Kannan (2015, p. 603) reveal that their individual definitions reflect their differences. Reverse logistics allow for the efficient management of returns from a variety of sources for recycling or remanufacturing (Kumar and Kumar, 2013, p. 157). According to Govindan, Soleimani and Kannan (2015, p. 603), companies often enforce reverse logistics in response to governmental legislation. For example, Canada, Japan, China, Europe and USA have imposed laws that require producers to manage the disposal of electrical products. The importance of studying and understanding reverse logistics is demonstrated by its inclusion as a future key measurement of performance in the Supply-Chain Operations Reference (SCOR) model (Schultz, 2002 in Dekker, Fleischmann, Inderfurth and Van Wassenhove, 2013, p. 3). On the contrary, CLSCM integrates the activities of reverse logistics with those of forward supply chains, in order to achieve end-to-end supply chain sustainability by recovering value from end-of-life (EOL) and end-of-use (EOU) products (Huang et al., 2013, p. 511). This is illustrated in **Figure 3.1**.

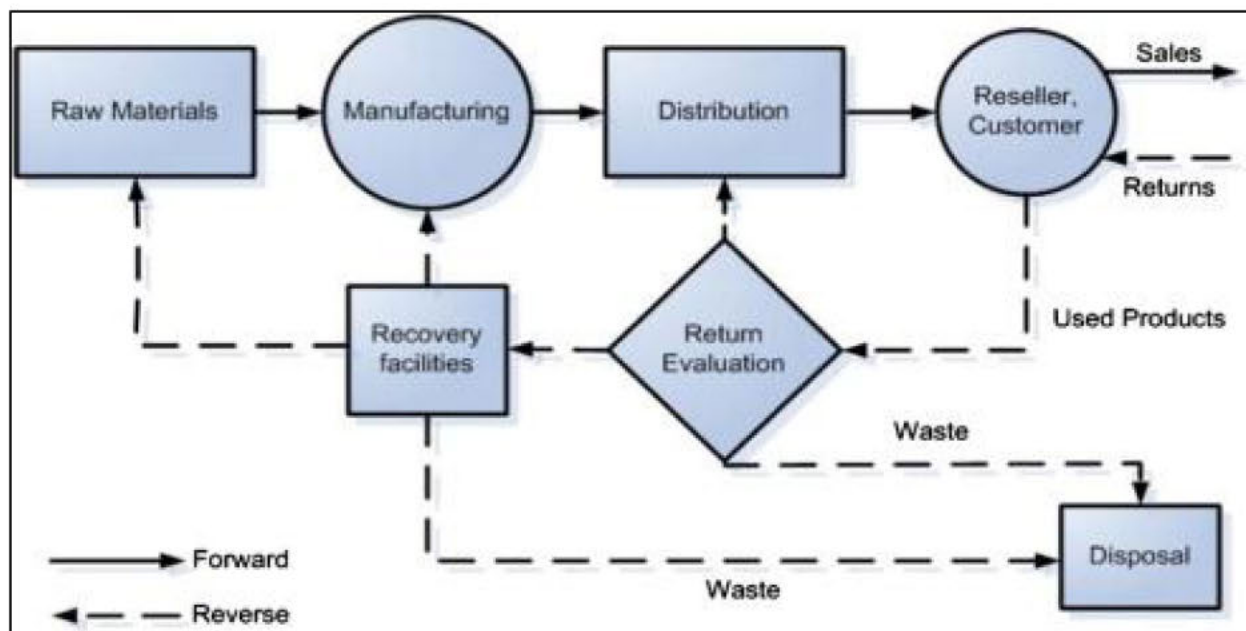


Figure 3.1: A generic form of forward and reverse logistics

Source: (Tonanont, Yimsiri, Jitpitaklert and Rogers, 2008, as cited in Govindan, Soleimani and Kannan, 2015, p. 604)

There are some fundamental differences between CLSCs and linear supply chains. Kumar and Kumar (2013, p. 157) describe a CLSC as '*cradle-to-reincarnation*'. Similarly, Ashby (2018, p. 2) describe it as '*cradle-to-cradle*'. This is because the manner in which products flow through it differs from the traditional '*cradle-to-grave*' supply chain (Kumar and Kumar, 2013, p. 157). Kumar and Kumar (2013, p. 156-157) identified five distinct differences between a linear supply chain and a CLSC:

1. **The goal:** Cost efficiency is the main objective of traditional supply chains. Reducing their environmental impact, in order to equally optimise economic, social and environmental sustainability, is the main objective of CLSCs.
2. **Management structure:** Contrary to the more common supply chain, the management structures of all stakeholders in a CLSC are focused on their overall environmental performance.
3. **Business model:** Compared to traditional linear logistics networks, CLSCs have an end-to-end approach to controlling the sustainability effects of supply chain stakeholders. Kumar and Kumar (2013, p. 157) describe this as a '*complete business model*'.
4. **Business process:** CLSCs have a circular perspective towards managing products and waste. They also have an objective to extend the life-cycles of products where possible. On the contrary, product and process flows in traditional supply chains are linear.
5. **Consumption pattern:** Purchases in typical supply chains are motivated by consumer demand for products and the activities of supply chain stakeholders, while those in CLSCs can be encouraged by sustainable governmental activities. They can, in the same way, be encouraged by consumer education about ethical consumption.

Several factors can motivate fashion brands and their supply chain stakeholders to adopt CLSCM. These include an opportunity to have a competitive advantage through becoming more innovative and therefore enhancing the brand image of a company. They additionally involve a need to increase the loyalty of consumers and to engage them in a unique way (Hvass, 2016, p. 81). Hvass (2016, p. 85) proposes that due to the limited existence of legislation that supports and encourages the adoption of CLSCM, its usage can be further motivated by stakeholder desire

to become more environmentally sustainable. While the environmental benefits of CLSCM have in practice guided many companies towards adoption, some scholars (e.g. Govindan, Soleimani and Kannan, 2015, p. 604) postulate that the fundamental objective of its employment is economical. Such authors substantiate this argument by demonstrating that academic definitions of the concept consistently reference a need to derive as much economic value during a product's entire life-cycle. While the economic and environmental benefits of CLSCs are frequently discussed in the body of knowledge, the social sustainability of these systems, that includes the improvement of lives through job creation, is often disregarded.

3.2.1. The activities of closed-loop supply chains

There are three main activities that forward-driven supply chains add to their systems in order to close their loops. These are: the collection of used products, reverse logistics, and re-marketing (Hvass, 2016, p. 41). These activities have a significant impact on how the supply chain will function. In the same way, they also have a particular effect on stakeholder relationship management, production and capacity planning, logistics and operations management. As a result, their strategic administration and improvement has been the focus of studies such as Lehr, Thun and Milling (2013, p. 4106). The activities are discussed further in the sections below.

3.2.1.1. Collection of used products

The first activity involves the collection of used products from consumers (Kumar and Kumar, 2013, p. 157). There are various approaches for coordinating product returns. O'Reilly and Kumar (2015, p. 498) identify channels that include door-to-door collections, collection centres and in-store drop-off points. Earlier, Savaskan, Bhattacharya and Van Wassenhove (2004, p. 240), proposed four models for collection. The authors distinguished these as either centralised or decentralised. Decentralised models are: Model M (returns coordinated by manufacturers); Model R (product returns coordinated by retailers); and Model 3P (returns coordinated by the third-party logistics operators). They summarised Model C as the only centralised model. These

models are evident in practice. For example, manufacturers, such as Kodak and Lexmark, coordinate the collection of used products with either their retail partners or third-party logistics partners (Hong et al., 2015, p. 12). Fashion retailers that coordinate their product recovery initiatives include H&M (Hvass, 2016, p. 93), and Nike for its Reuse-A-Shoe program (Nike, 2020, para. 2).

This study focuses on retailer facilitated collections. Evidence of their feasibility is provided in frequently cited literature. Savaskan, Bhattacharya and Van Wassenhove's (2004, p. 240) study, for example, explored the feasibility of three potential decentralised models for collecting used products. They aimed to determine the most appropriate collection model for CLSCs producing remanufactured products. Savaskan, Bhattacharya and Van Wassenhove (2004, p. 245) suggested that as retailers are positioned nearer to consumers, in comparison to manufacturers and third-party logistics operators, it is more feasible and profitable for the collection of used products to be organised by them. More recently, Chen, Xu, Li, Walker and Yang (2020, p. 2) argue that despite the growing industry practice of retailer facilitated CLSCs, their representation in the body of knowledge is limited. The authors further conclude that retailers are strategically positioned to be the most profitable in CLSCs, as in linear ones (Chen et al., 2020, p. 20). Similarly, Chow and Li (2015, p. 233), explained that the positioning of retailers would be suitable for their role as collectors of post-consumption products due to the convenience this would present to consumers. For these discussed reasons, the researcher selected to focus this study on SMME fashion retailers due to their strategic positioning in the supply chain.

3.2.1.2. Reverse logistics

There are various reverse logistics processes involved in a CLSC. These begin after the used products have been collected from consumers and have motivated various authors such as Cannella, Bruccoleri and Framinan (2016, p. 36) to explore different aspects of their adoption in the supply chain. After collection, used products are transported to the point of recovery, where they are tested and sorted to establish the most appropriate and cost-efficient method to use for

their reuse (Govindan and Soleimani, 2017, p. 371). If the quality of the returned products is not suitable for immediate re-distribution, re-processing takes place. Products that are not suitable for recovery are disposed as waste in landfill. According to Wu and Kao (2018, p. 538), the improvement and availability of technologies and technology licenses can enhance the recovery of products in a CLSC. Hedegård, Paras, Gustafsson (2016, p. 5) summarise that the reprocessing stage can either add or subtract value from the recollected product.

Recent studies have focused on the efficiency of reverse logistics in a circular system. Govindan and Soleimani (2017, p. 373) conducted a comprehensive review of 83 academic articles, on reverse logistics and CLSCM, published in the *Journal of Cleaner Production*. Their study identifies several themes in reverse logistics literature that include remanufacturing and recycling, recovery and waste management.

The management of the inventory of recollected EOL products and those reprocessed and redistributed has equally been a subject of interest for some researchers. Cannella, Bruccoleri and Framinan (2016, p. 36), for example, analysed elements of inventory management that have an impact on the performance of a CLSC in different operating environments. Using a differential equations systems approach, the authors indicated that focusing on improving the return rates of EOL products will reduce the occurrence of the bullwhip effect and increase the performance of reverse logistics in circular systems. This echoes the sentiments of researchers such as Lehr, Thun and Milling (2013, p. 4107). According to Braz, De Mello, Gomes and Nascimento (2018, p. 5), CLSCs are more vulnerable to the bullwhip effect that results from the presence of variances in demand and inventory. The bullwhip effect occurs when errors in forecasting and incorrect information, along the supply chain, lead to excessive production and inventory levels (Braz et al., 2018, p. 5). In a CLSC, the bullwhip effect occurs when the used product recovery rate is low, resulting in high order and demand fluctuations (Braz et al., 2018, p. 14). Owing to this, Cannella, Bruccoleri and Framinan (2016, p. 51) recognise collaborative efforts towards establishing end-to-end transparency and visibility of information as essential for ensuring the robustness of the CLSC's reverse logistics. Sharing information particularly about the levels of products collected at the front-end of the CLSC, including those in-transit, further

contributes to the supply chain's risk management (Cannella, Bruccoleri and Framinan, 2016, p. 51).

3.2.1.3. Re-Marketing

Hvass (2016, p. 41) suggests re-marketing as the final activity of a CLSC. The operations of marketing and supply chain departments are often closely linked and co-dependent. Understanding consumer characteristics, perceptions and behaviours has been frequently explored in great detail by researchers studying the varying products and services of forward-driven supply chains. However, it has often been overlooked by scholars of CLSCM. Researchers such as Abbey et al. (2015, p. 489) and Wang et al. (2013, p. 867) recognised this gap and created a foundation for studies of a similar nature to be conducted across different industries. These studies show that while companies can adopt CLSCM, the successes of their supply chains is significantly determined by the extent to which consumers understand and accept the products and services of these systems.

Marketing, at the front-end of CLSCM, is required to encourage consumers to participate in product return initiatives. Using lessons from successful corporate social responsibility (CSR) initiatives, strategies can be used to show consumers the sustainability benefits of participating in product recovery activities (Hvass, 2016, p. 83; Abbey et al., 2015, p. 491). Using its website and various campaigns, Filippa K, for example, makes consumers aware of the sustainability contributions of its product designs, along with the circularity options it offers through its secondhand shop (Filippa K, 2021, para. 1-5). This has the potential to appeal to the environmental consciousness of consumers and ultimately increase their participation (Abbey et al., 2015, p. 491). Other scholars discuss the use of incentives to encourage consumer involvement in front-end activities. Lehr, Thun and Milling (2013, p. 4113) consider the use of rebates to reduce the variability of product returns and decrease the uncertainties associated with CLSCs. In addition, researchers such as Islam and Huda (2018, p. 68) identify convenience and the disposal behaviours of consumers as aspects that can increase consumer returns.

Research additionally demonstrates that the successes of back-end CLSC activities are dependent upon marketing strategies. Strategies include the promotion or advertising of products that have re-entered the system, to encourage consumers to purchase (Shekarian, 2020, p. 7). Literature exists in abundance for the promotion of new products to primary markets across several industries. However, research (e.g. Wang et al., 2013, p. 867; Abbey et al., 2015, p. 489) shows that the findings of such studies are not consistently applicable to the unique characteristics, risks and benefits associated with the products and services of CLSCs. For example, studies show that pricing needs to be strategic to persuade consumers to purchase the products of CLSCs (Wang et al., 2013, p. 872; Abbey et al., 2015, p. 489). However, it needs to be especially strategic where they are sold together with new products to encourage sales while avoiding cannibalisation (Reimann, Xiong and Zhou, 2019, p. 512).

3.3. Closed-loop supply management in the fashion industry

Some researchers have, therefore, focused on establishing ways to optimise the efficiency and effectiveness of CLSCs. With a focus on the reuse and recycling of fashion materials, Oh and Jeong (2014, p. 9028) propose a CLSC planning model to assist stakeholders in finding a balance between their economic objective to optimise profits while minimising production, transportation and material costs, with their environmental objective to reduce carbon emissions. Bearing similar characteristics to the generic CLSC by Tonanont et al. (2008, as cited in Govindan, Soleimani and Kannan, 2015, p. 604), presented in **Figure 3.1.**, Oh and Jeong (2014, p. 9030) drafted a CLSC structure for the fashion industry. They presented a forward supply chain and identified the raw material supplier, yarn, fabric and apparel manufacturers and the consumers as the stakeholders. The authors consider the collector as the additional stakeholder that closes the supply chain loop by recovering and reprocessing EOL products from consumers. According to Oh and Jeong (2014, p. 9031), the collector then redistributes the recovered products back to the consumers or supplies the recycled materials to the yarn manufacturer; the remanufactured materials to the fabric manufacturer and the repaired products and materials to the apparel manufacturer. The potential presence of multiple additional stakeholders in a CLSC makes strategic stakeholder relationship management essential (Hvass, 2016, p. 120). Ashby (2018, p.

12) and Hvass (2016, p. 161) interpret that due to the role of consumers in the circular system, relationship management should also extend to them. They emphasise building collaborative and transparent relationships with stakeholders.

Hvass and Pedersen (2019, p. 348) discuss the CLSCM activities for EOL fashion products. These are illustrated in **Figure 3.2**. They suggest that fashion retailers have three options that they can utilise for product acquisition. These are summarised as 1. product collection in the retailer, 2. product collection in collaboration with a charitable NPO or 3. acquisition at the retailer in collaboration with a third-party partner. These product collection methods resemble those specified by O'Reilly and Kumar (2016, p. 498).

After determining a suitable product return method, fashion retailers have to establish an operational strategy for product recovery. Romero and Rossi (2017, p. 14) propose a number of reprocessing options that include the repairing, refurbishing, remanufacturing and recycling of the used products. Hvass and Pedersen (2019, p. 348) highlight two operational strategies that fashion stakeholders can adopt in order to recover value from EOL products. The first involves the reuse, repair or up-cycling of the focal retailer's own brand. This allows stakeholders to optimise and lengthen product life-cycles. The second strategy focuses on decreasing waste through donating or selling returned products to secondary markets for reuse or recycling. Products that are suitable for reuse can either be redistributed straightaway or reprocessed (Hvass and Pedersen, 2019, p. 348).

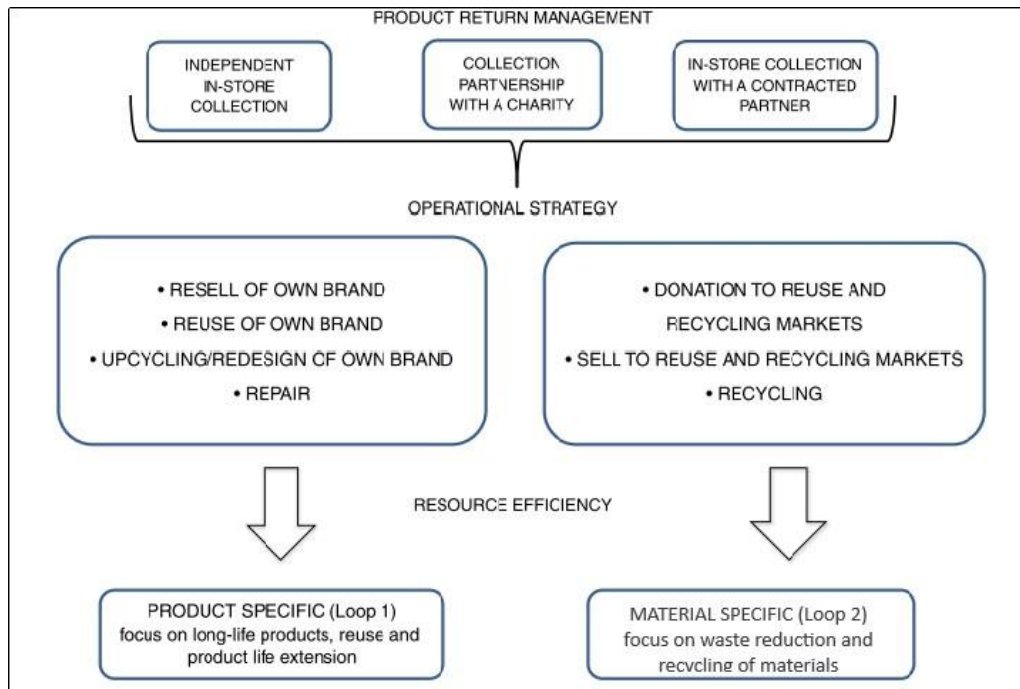


Figure 3.2: Fashion brand product end-of-life strategies

Source: (Hvass, 2016, cited in Hvass and Pedersen, 2019, p. 348)

This study focuses on the following recovery options for used fashion products:

- Reuse:** Traditionally, secondhand fashion products are often traded formally, for example in vintage shops, charity shops, thrift stores and through resale platforms (Larnard, 2020, para. 1-2; Tóta, 2015, p. 20). Informally, the distribution of such used fashion is extensive in Sub-Saharan Africa, mostly because of the economic benefits it offers to the informal trading market and its price-sensitive consumers (Norris, 2015, p. 185; Tóta, 2015, p. 24). The current trade of used fashion products by the informal market is largely driven by illegal imports of cheap bales of used clothing from first-world countries (Hansen, 2014, p. 2). This has compromised the positioning of fashion product reuse in the minds of consumers and motivated government legislation to regulate its distribution from other countries. Scholarly discussions about the reuse of fashion in circular economies propose different methods. Hu, Li, Chen and Wang (2014, p. 7064) review circularity in the form

of rent-based systems that allow consumers to rent fast fashion products cyclically. Hedegård, Paras and Gustafsson (2016, p. 1) evaluate the operations of ReTuna Mall, a Swedish mall that was solely established to facilitate the sale of fashion products for reuse. Henninger, Bürklin and Niinimäki (2019, p. 1-3), on the other hand, examine clothes swapping stores that enable consumer fashion exchanges. Their study focuses on operations in three European countries: the United Kingdom (UK), Finland and Germany. The authors explain that such consumer-driven initiatives have become more popular following the Rana Plaza incident. Fashion brands currently employing reuse methods include Filippa K and Patagonia. These primary retailers operate secondhand stores dedicated solely to their brands, allowing them to cater to different markets (Strähle, 2017, p. 130). In addition, products acquired through H&M's garment collection initiative are sold to its partner, I:Collect which among other options, sorts and resells them to secondhand stores (Hvass, 2016, p. 167).

- **Recycling:** Another CLSC recovery method that is explored in this study is the recycling of used fashion products by secondary industries. Used products that are not in a condition to be directly reused as secondhand can be recycled (Romero and Rossi, 2017, p. 14). O'Reilly and Kumar (2016, p. 498) found that used products that are considered to have lower resale value are also sometimes considered for recycling. The recycled materials can be used to create new fashion products in order to preserve natural resources (Roos, Sandin, Peters, Spak, Bour, Perzon and Jönsson, 2019, p. 11-12). Used fashion can, by the same token, be recycled for use in secondary industries. This is demonstrated by Nike's Reuse-A-Shoe program. The collected used footwear is recycled to make playground surfaces (Nike, 2020, para. 2).
- **Remanufacturing:** Remanufacturing is the final recovery method that is explored in this study. It is defined as '*a process of reinstating a discarded product back to its useful life, by upgrading the quality of the product and its lifespan*' (Dissanayake and Sinha, 2015, p. 3). Sinha, Muthu and Dissanayake (2016, p. 6) argue that the process, approach and end products of remanufacturing in the fashion industry differ to those of other industries. The process differs from that of recycling as it does not transform used products into raw

materials. It further differs as products that are remanufactured will maintain the same function as those of the initial product, but will be manufactured to be of a greater value (Dissanayake and Sinha, 2015, p. 3). However, Sinha, Muthu and Dissanayake (2016, p. 5) clarify that the functionality, identity and design of the remanufactured item does not have to be similar to the original one. For example, a dress may be remanufactured into a pair of shorts or into a skirt.

3.4. Risks of closed-loop supply chain management activities

According to Hvass (2016, p. 23), the most important elements required for a fashion retailer to successfully redistribute its own brand of recovered products are '*high quality, strong brand awareness and market maturity*'. However, there are various factors that may complicate the process of achieving this. Studies show that there are risks associated with the adoption of CLSCM, particularly in the fashion industry (e.g. Lehr, Thun and Milling, 2013, p. 4106). These risks are associated with: product obsolescence, product design, sale and distribution, consumer engagement and uncertainty. In addition to the existing challenges that SMME retailers may face when operating in a developing African country, as noted in Chapter Two, these risks of CLSCs can further impact the adoption of the system's activities, and influence the perceived risks of managing them.

3.4.1. Product obsolescence

The time-sensitive nature of the fashion industry's products presents a possible challenge for the management and operation of CLSCs. Agility and quick responsiveness in the fashion industry are discussed by several authors for forward-driven supply chains (e.g. Niinimäki et al., 2020, p. 189-190). However, research on their use in CLSCs is not extensive. Difrancesco, Huchzermeier and Schröder (2017, p. 5-6) explored the timely return of short life-cycle products in terms of CLSCs coordinated by online fashion retailers. Using sensitivity analysis, they aimed to devise an optimal return window for online fashion products. Difrancesco, Huchzermeier and Schröder

(2017, p. 29) concluded that in addition to other factors, a returned product's life-cycle can contribute to the decision to either refurbish it for redistribution to the primary market or to sustainably dispose of it in a secondary market.

Cannella, Bruccoleri and Framinan (2016, p. 50- 51) came to the conclusion that in order to optimise their effectiveness, CLSCs can rely on updated innovative technologies and strategies that include lean and six-sigma. Lean and six-sigma are quality improvement approaches. Lean was developed in 1990 from the Toyota Production System and is used as a method for eliminating waste, while maintaining valuable processes. Similarly, six-sigma was developed in 1986 by the Motorola Corporation to identify causes of error and decrease their rate to 3.4 defects per million (Mason, Nicolay and Darzi, 2015, p. 2). Cannella, Bruccoleri and Framinan (2016, p. 50-51) suggest that these will reduce the reprocessing lead-times to improve time-to-market. Oh and Jeong (2014, p. 9051) recommend that future research should consider how quick responsiveness can be adopted in CLSCs in the fashion industry, where product life-cycles are short and stakeholders have minimal control over the types and quantities of EOU and EOL products recovered from consumers.

3.4.2. Product design

Ashby (2018, p. 4) considers two environmental practices in CLSCM: design for the environment and design for remanufacturing. They explain that in order to be sustainable, products of CLSCs are designed to continuously meet the environmental goals of logistics networks for the duration of their life-cycles. They are equally designed so that recovery methods, such as remanufacturing, can efficiently and effectively take place (Ashby, 2018, p. 4).

While the most ideal CLSC would recover products that are already designed and manufactured for recovery, it is necessary to explore that the current operations of CLSCs may also include the acquisition of used fast fashion products which are not designed for sustainable recovery. As a result, some authors predict challenges in the reprocessing of used fashion products. Koszewska

(2018, p. 3) argues that textile production, for example, relies heavily on the use of synthetic fibres such as polyester. Ndachengedzwa and Stecca (2016, para. 7) explain that using such materials compromises the disposal of fashion products and increases non-biodegradable waste. However, Niinimäki et al. (2020, p. 197) maintain that although only 14% of polyester used is recycled polyester, with more innovation there will be opportunity to increase this. Establishments such as Circular.Fashion (2019, p. 3) are developing new technologies that can aid the efficient and effective administration of CLSCM activities, particularly during design and recycling. Through their invention of the circularity.ID, stakeholders are able to access data related to a product's materials to aid in the future extension of the product life-cycle.

3.4.3. Sale and redistribution

The sale and redistribution channels of the products of CLSCs presents an additional challenge. Kwak and Kim (2016, p. 051701-1) postulate that remanufactured products can appear better than new products if reprocessed well. As a result, studies such as Ramani and De Giovanni (2017, p. 1010) discuss the risk of cannibalisation of new product sales. However, a survey conducted by Farfetch (2019, p. 7) with 3 000 respondents, in the UK, USA and China, who had purchased used fashion in 2019, showed different results. Their goal was to determine displacement rates (Farfetch, 2020, p. 3). According to Farfetch (2020, p. 3), displacement rates measure the extent to which the purchase of a used fashion product supersedes the purchase of a new product. The study shows that consumers of used fashion products are often already in the market to purchase pre-owned goods (Farfetch, 2019, p. 63-65). As a result, the displacement rates of certain product categories were significantly low (Farfetch, 2019, p. 72-74). In the same way, Kovach, Atasu and Banerjee (2018, p. 517) indicate an expectation of lower profit margins in the sale of remanufactured products. These can potentially result in decreased commissions. They clarify this as a factor that may affect the motivation that salespeople have to sell such products.

Despite the growing trend towards reusing fashion products, the literature suggests some additional challenges. Ndachengedzwa and Stecca (2016, para. 9), for instance, believe that the distribution of clothes for reuse has the potential to compromise job security in the mainstream fashion industry. However, literature on CLSCM demonstrates the possibility of economic benefits and expansion through the extension of the primary supply chain to include additional stakeholders (e.g. Oh and Jeong, 2014, p. 9028).

3.4.4. Consumer engagement

The purchasing behaviours of modern consumers are frequently described as reckless and impulsive. However, various events have encouraged many to reconsider their buying habits and to demand end-to-end accountability from supply chain stakeholders. The Rana Plaza disaster has been one of the most frequently referenced events in scholarly and industry discussions published in the last decade (e.g. Huq and Stevenson, 2020, p. 415; Oelze, Gruchmann and Brandenburg, 2020, p. 1; Henninger, Bürklin and Niinimäki, 2019, p. 3). The environmental effects of the post-consumption fast fashion waste produced globally are also now documented more (e.g. Gwozdz, Nielsen and Müller, 2017, p. 4). However, scholarly conversations reveal limited awareness of sustainable practices, such as CLSCM, which present a challenge for their adoption (e.g. Hvass, 2016, p. 22).

Two studies were identified that explore consumer perceptions in CLSCM systems in the fashion industry. Of these studies, one was conducted in Sweden (Arvidsson and Kling, 2018, p. 3) and one was conducted in India (O'Reilly and Kumar, 2015, p. 487). While the study conducted in India gives insight into the perspectives of consumers in developing countries, the context of African countries is different and needs to be explored. This gap in literature encouraged the researcher to explore the perceptions of consumers in South Africa, with particular focus on university students who have a notable position in current and future consumption.

Using the TPB and a process flow approach, O'Reilly and Kumar (2015, p. 492) identified the stakeholders involved in the recycling of garments in Delhi. The respondents of their study included consumers of fashion products, formal and informal retailers, wholesalers, distributors and recycling companies (O'Reilly and Kumar, 2015, p. 492). Furthermore, the objective of their study was to determine the intentions that consumers have when participating in the recycling of their garments. The authors found that households were more inclined to habitually participate in the recycling of products with shorter life-cycles, such as organic waste and newspapers, than in fashion products (O'Reilly and Kumar, 2015, p. 493). This is partly owed to the availability of information about how such products should be recycled and the presence of already established frequent and convenient recycling collection services for such waste. O'Reilly and Kumar (2015, p. 503) also found that consumers were encouraged to recycle by their personal desire to be more responsible, particularly in the absence of financial incentives. However, their perceptions of the quality of service provided by collectors, during product acquisition impacted their intention to participate in the recycling of garments.

Through the use of focus groups and individual interviews with 11 Swedish female students, Arvidsson and Kling (2018, p. 3) analysed factors that motivate consumer intention to participate in in-store recycling activities. These included being provided with sufficient information about the recycling methods, along with the extent of the convenience of in-store recycling in comparison to the consumer's existing habits.

While these studies give an impression of consumer intentions to participate in the front-end activities of CLSCs in the fashion industry, they do not consider consumer perceptions towards purchasing the reprocessed products of these supply chains. O'Reilly and Kumar (2015, p. 487) also acknowledge that the perceptions of consumers in developing economies are not as extensively represented in the body of knowledge as those in developed nations.

3.4.5. Uncertainty

Uncertainty in CLSCM has appeared frequently in scholarly discussions. Dissanayake and Sinha (2015, p. 6) and Lehr, Thun and Milling (2013, p. 4106) all detail the uncertainty that results from an inability to determine the types of product returns, when they will be returned and the volumes of returns. They point out the lack of standardisation as a factor that affects the forecasting abilities of CLSCs. Dissanayake and Sinha (2015, p. 18) hypothesise that this uncertainty can affect the level of strategic planning that can be carried out by remanufacturers, for instance, and is distinguished as a major factor that hinders mainstream retailers from adopting this recovery method. However, the authors maintain that the uncertainty would be significantly reduced if retailers partnered with remanufacturers as collection points for used products. Some scholars have recommended the use of incentives, such as rebates, to encourage more consumers to return used products (e.g. Lehr, Thun and Milling, 2013, p. 4113). Using similar methods, Lexmark reported an increase in the return rate of between 30 and 50% for its Optra-S toner cartridges (Hong et al., 2015, p. 12).

3.5. Theories of perceptions of closed-loop supply chain activities

Scholarly and industry focus on CLSCM is in its infancy. As a result, there is a constant need for the development of theory. However, various studies have established theoretical frameworks and models that provide a useful basis for future studies in the discipline. A conceptual model designed by Abbey et al. (2015, p. 492) and a theoretical framework developed by Wang et al. (2013, p. 873) were identified. Both studies examine product remanufacturing. Although these were developed to evaluate consumer perceptions in CLSCM systems, the researcher suggests that their application can be adapted to additional stakeholders in these systems. As a result, for this study, the framework presented by Wang et al. (2013, p. 873) was adapted and applied to both respondents and participants, in order to assess their perceptions of the various CLSCM activities.

3.5.1. Model of predicted effects

Abbey et al. (2015, p. 492) developed a model of predicted effects in their study of remanufactured products in CLSCs. Their conceptual model was designed and based on an extensive review of literature. The model summarises the variables the authors intended to study in order to determine consumer perceptions of remanufactured products. The model is divided into two sections: product and consumer attributes, and experimental manipulations. According to Abbey et al. (2015, p. 492), the variables in these sections have either a positive or negative effect on the attractiveness of remanufactured products in CLSCs. **Figure 3.3.** is an illustration of the model.

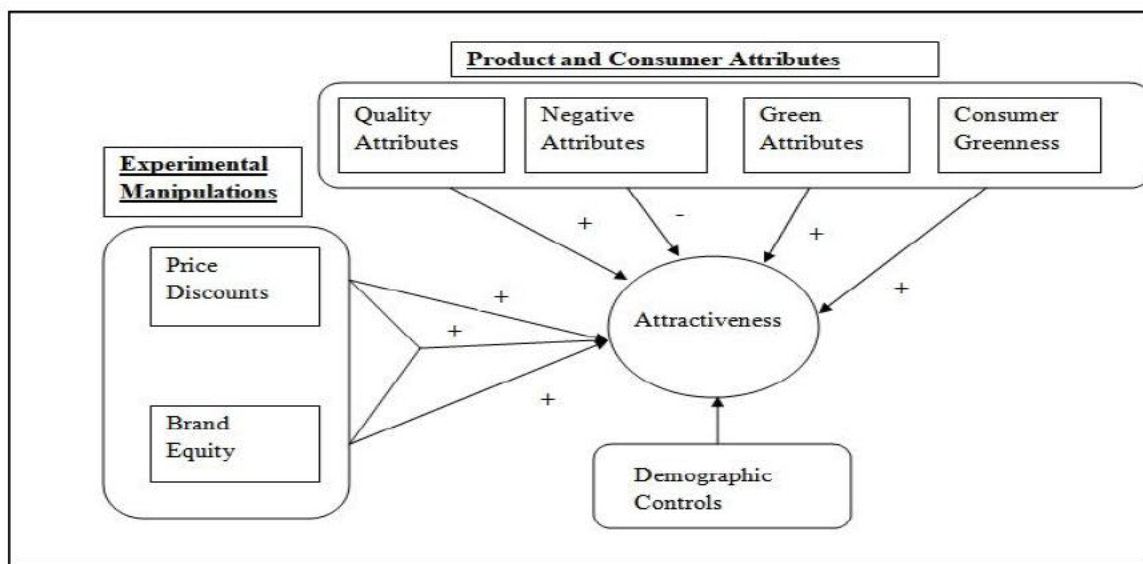


Figure 3.3: Model of predicted effects

Source: (Abbey et al., 2015, p. 492)

1st Variable: Price Discounts; Abbey et al. (2015, p. 489) argue that, in theory, in order to be attractive to consumers, products of CLSCs should be significantly discounted, so as to be priced lower than similar new products. The authors manipulated and evaluated various discounting strategies for remanufactured products in their data collection. Their findings show that

discounting strategies may have an impact on the perceived quality of remanufactured products sold in the CLSC. For example, if prices of remanufactured products are significantly lower than those of new products, consumers may assume that they are of lower quality. In the same way, strategies such as the rewarding of price discounts and vouchers are necessary for increasing consumer awareness and attractiveness to product return initiatives on new product purchases (Hong et al., 2015, p. 12). For example, H&M offers its consumers vouchers or discounts off their next in-store purchases when they return used clothing to be recycled or reused (Balch, 2013, para. 5). Green advertising, which is advertisements that communicate the environmental contributions of a product, can also play a role of creating consumer awareness and interest in environmentally-conscious living (Rahim, Zukni, Ahmad and Lyndon, 2012, p. 47). Farshbaf-Geranmayeh, Rabbani and Taleizadeh (2017, p. 6), for example, explore the effectiveness of cooperative advertising in CLSCs. They assess strategies that retailers and manufacturers can adopt when utilising joint green advertising to increase the return rates of pre-owned products (Farshbaf-Geranmayeh, Rabbani and Taleizadeh, 2017, p. 6-7).

2nd variable; Brand equity and quality attribute: Brand equity is defined as ‘*the added value endowed on products and services*’ (Kotler and Keller, 2016, p. 243). This added value is a reflection of consumer perceptions of the brand and the behaviours they show as a result of these perceptions (Abbey et al, 2015, p. 490). Abbey et al. (2015, p. 490) hypothesise that if consumers perceive the brand equity of a particular manufacturer as high, they will be more likely to trust the quality of the products. This would make them more attracted to the end-products of CLSCs. Likewise, due to the importance of consumer perceptions, the study by Farshbaf-Geranmayeh, Rabbani and Taleizadeh (2017, p. 6-7) investigates national advertising by manufacturers to improve the image of remanufactured products in the minds of consumers and encourage the sale of these products.

3rd variable; Negative attributes: Abbey et al. (2015, p. 490) analysed the effects of negative attributes on the attractiveness of remanufactured products. According to the authors, consumers may perceive products negatively and sometimes even with disgust as a result of their previous ownership.

4th variable; Green attributes and consumer greenness: CLSCM activities are often adopted due to their contribution to environmental sustainability (Hvass, 2016, p. 13; Abbey et al., 2015, p. 491). Joy et al. (2012, p. 288) inform that this is still not at the forefront of consumer purchasing decisions. The study reveals that while its sample of consumers, below the age of thirty-five, showed increasing environmental consciousness, these consumers, based in Hong Kong and Canada, did not extend this awareness towards their fashion purchases. This could mean that although there is a growing movement towards the adoption of environmentally sustainable practices, many consumers do not fully apply these values to their fashion purchases, relieving the pressure for retailers to produce sustainable products. Joy et al.'s (2012, p. 288) observation may too mean that consumers do not extend their eco-conscious lifestyles to their post-purchase activities. However, Abbey et al. (2015, p. 491) explain that consumers may either be attracted to products of these systems as a result of their green attributes or consider them less attractive. The authors further analyse self-identified consumer greenness to determine if consumers who have green beliefs would be attracted to and purchase remanufactured products as a result of their beliefs.

3.5.2. Theoretical framework of consumer perceptions of closed-loop supply chains

The present study was directed by a comprehensive theoretical framework developed by Wang et al. (2013, p. 873) in their study of consumer perceptions and behaviours towards remanufactured automobile products in CLSCs. The theoretical framework designed, was based on an extensive review of literature. Wang et al. (2013, p. 867) combined the TPB, the TPR and literature on perceived benefits and product knowledge. As a result, the authors were able to identify seven variables which they used to formulate hypotheses for their study. According to Wang et al. (2013, p. 867), the variables in the framework have either a positive or negative effect on consumer willingness to purchase the products of CLSCs. Aspects of this framework have been discussed in more recent studies such as Wang and Hazen (2016, p. 3) who investigated the influence of product knowledge on the attractiveness of remanufactured products, and Mugge,

Jockin and Bocken (2017, p. 4-5) whose study examines the refurbishment of smart-phones and assesses the types of incentives that would increase consumer attractiveness to such products.

The study by Wang et al. (2013, p. 867) aimed to examine how purchase and behavioural intention may be affected by perceived risks, perceived benefits and product knowledge. This study was particularly relevant in China as the government had introduced regulations that were designed to encourage the growth of the remanufacturing industry (Wang et al., 2013, p. 867). However a lack of support from consumers negatively affected the industry's growth (Wang et al., 2013, p. 867). Due to the similar nature of the present study, this framework was considered suitable for use to explore all the variables that may impact perceptions of the activities of CLSCs. Each of the theories presented by Wang et al. (2013, p. 873) may be used in isolation, but a combination of theories and concepts, as was presented by the authors, provided a more comprehensive analysis. **Figure 3.4.** illustrates the framework.

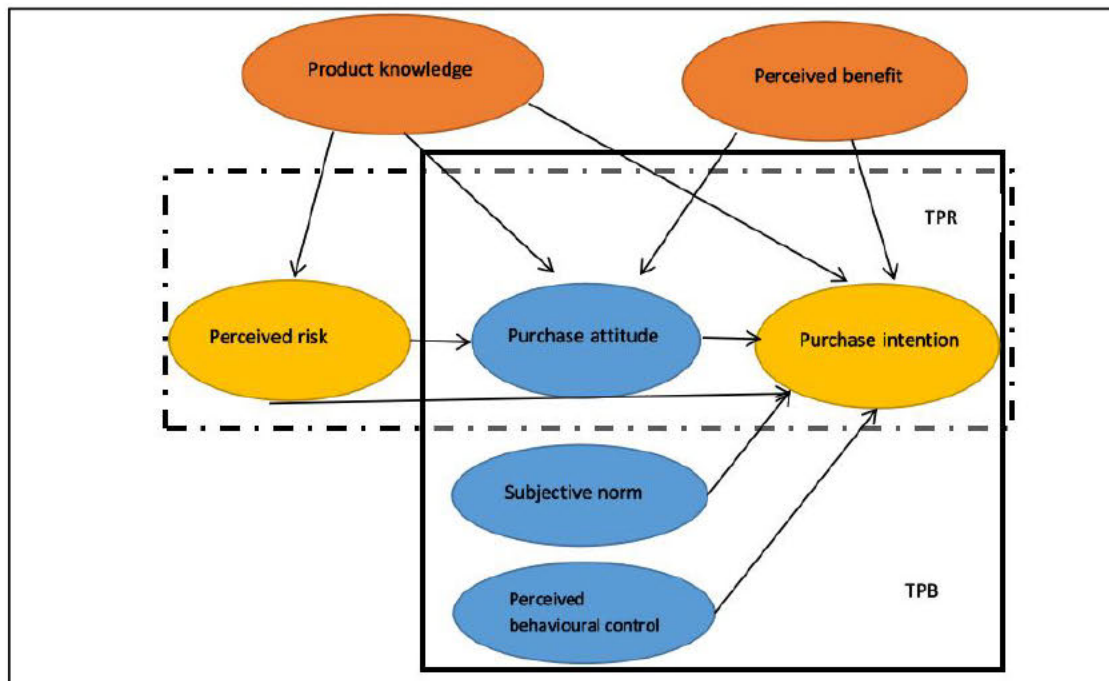


Figure 3.4: Theoretical framework of consumer perceptions of closed-loop supply chains

Source: (Wang et al., 2013, p. 873)

1st variable; Product knowledge: Product knowledge is based on familiarity and expertise (Wang et al., 2013, p. 870). Familiarity with a product is gained as the amount of times a consumer is exposed to the use of the product increases (Wang et al., 2013, p. 870). Expertise is acquired through continued use of a product and is defined by Wang et al. (2013, p. 870) as ‘*the ability to perform product-related tasks successfully*’. Product knowledge can affect a consumer’s purchase attitude and intention, as familiarity and expertise with the product may reduce the level of perceived risk and increase the likelihood of a consumer making the purchase (Wang et al., 2013, p. 871; Wang and Hazen, 2016, p. 3). In the absence of product knowledge, consumer perceptions may be influenced by factors such as brand equity. This may impact perceived quality and performance.

2nd variable; Perceived benefits: Perceived benefits can influence a consumer’s purchase attitude and ultimately impact their purchase intention. Wang et al. (2013, p. 871) discuss this in relation to both social and personal benefits. Social benefits may include the environmental benefits of the services and products of CLSCs. These benefits are connected to a consumer’s environmental awareness (Abbey et al., 2015, p. 491). In the absence of the desire to support CLSCM initiatives for their social and environmental benefits, consumers might value personal benefits of using the products and services of these systems. Personal benefits may be derived from the significant cost savings consumers may experience from purchasing the products of CLSCs (Wang et al., 2013, p. 871). They can too be derived from receiving financial incentives in the product return process (Hong et al., 2015, p. 12). Similarly, the review of literature in Chapter Two showed insights from Liu and Hei (2022, p. 19) detailing Generation Z’s interest in sustainable fashion products when they are affordable.

3rd variable; Perceived risks: Perceived risks can affect a consumer’s purchase attitude and reduce their willingness to purchase a product. Pappas (2016, p. 18) summarises that perceived risks often arise in purchasing situations in which the consumer is hesitant about the results or consequences of their purchase. Wang et al. (2013, p. 870) identify various types of risks that

may affect a consumer's willingness to pay for a remanufactured product. These include: performance risk, financial risk and social risk (Wang et al., 2013, p. 870).

4th variable; Consumer frame of reference (Purchase attitudes, subjective norms and perceived behavioural control): These variables are taken from the TPB. The TPB is an extension of the theory of reasoned action. It holds that how one behaves is directly influenced by the objectives behind the action (Wang et al., 2013, p. 868). It has often been used to assess behaviours towards recycling and green food consumption (Wang et al., 2013, p. 872). According to the TPB, attitudes, subjective norms and perceived behavioural norms have an impact on behavioural intention and actions. Attitudes are a result of one's assessment of whether a particular action or behaviour is beneficial or risky (Kotler and Keller, 2016, p. 168). Comparatively, subjective norms are founded upon how one believes those who are of significant value to their lives would prefer they behaved (Wang et al., 2013, p. 868). Subjective norms are shown in an earlier study by Velia, Valodia and Amisi (2006, p. 20) of the informal trade of used clothes in Durban, as some consumers of secondhand products were said to be afraid of how their close friends and relations would perceive them if they knew where they purchase such clothing items. Perceived behavioural control shows the degree to which an individual believes they are in charge of their own behaviours (Wang et al., 2013, p. 868).

3.6. SMME adoption of closed-loop supply chain practices

The operation of CLSCs by SMME retailers is not as widely researched. However, there is a growing interest in their potential contribution towards circular economies and including these enterprises in such conversations. This is expressed by Barón, de Castro and Giménez (2020, p. 4), who acknowledge that due to their quantity, SMMEs are of significant value to the facilitation of circular economies. Mura, Longo and Zanni (2020, p. 2) reviewed the circular activities of 254 SMMEs in Italy. Their study aimed to evaluate any opportunities or challenges that such fashion industry stakeholders may experience as a result of adopting these sustainable practices. While their study is not specifically focused on the supply chain practices in a circular

economy, their results provide valuable input for this field. Mura, Longo and Zanni (2020, p. 11-13) discovered that despite the costs of executing circular activities as a small business, stakeholders maintain that these systems provide opportunities for the use of new technologies that can increase efficiency. Ballie and Woods (2015, p. 489-490), on the other hand, deduced that in order to have a completely circular economy, fashion stakeholders, including SMMEs and fashion designers, should start considering the sustainability impact of a product's life-cycle, starting from the design phase.

Studies have emerged on the barriers and enablers of SMMEs adopting circular systems. A comparison of two recent studies by Min, Sawang and Kivits (2021, p. 7-9) and Cantú Aguiñaga and Scheel (2021, p. 7-14) shows that the barriers and enablers of adopting circular systems can appear largely similar between developed and developing countries, but can differ based on the extent of their effect.

With the argument that SMMEs have an important position in China's economic activities and in contributing substantially to the country's pollution, Min, Sawang and Kivits (2021, p. 1) explored their potential adoption of circular practices. The authors highlighted the barriers of adoption which include: limited time, resources and information, along with a lack of assistance from government. They further emphasised the roles that academics and other key stakeholders can have in the adoption of circular practices by SMMEs in the face of such barriers (Min, Sawang and Kivits, 2021, p. 4). Min, Sawang and Kivits (2021, p. 8) examined factors that can enable the adoption of circular systems by SMMEs. The authors identified the strategic relevance of the SMME's network, including partnerships between SMMEs and larger organisations. Stakeholder involvement is also noted as an enabler, with the customer identified as the '*critical driver*' of adoption (Min, Sawang and Kivits, 2021, p. 8).

Similarly, Cantú Aguiñaga and Scheel (2021, p. 1) researched the barriers and enablers that SMMEs in emerging economies experience when adopting circular economy activities. They focused their study on Mexico. The authors highlighted the gap that exists in literature on the

subject, with reference to SMMEs in emerging economies. Cantú Aguiñaga and Scheel (2021, p. 2) maintain Min, Sawang and Kivits' (2021, p. 1) argument that due to their significant involvement in their country's economic activities, SMMEs should not be excluded from the activities of circular economies. Cantú Aguiñaga and Scheel (2021, p. 18) identified external barriers that include the consumer's negative perceptions of the products of circular systems, and their lack of knowledge. According to the authors, these substantially hinder the circular economic activities of stakeholders in emerging economies (Cantú Aguiñaga and Scheel, 2021, p. 26). Cantú Aguiñaga and Scheel (2021, p. 26) also found financial barriers related to the sizes of the business that could potentially be resolved through collaboration. Additional barriers include a lack of infrastructure, legislation and knowledge about environmental issues.

Based on the identified literature, there is a visible growth in the study of SMME participation in circular economies or their adoption of CLSCM activities. There is also a growing interest in how such stakeholders can contribute based on their value to both developed and developing economies. However, it is evident that there is a limited point of reference for the application of CLSCM by SMME retailers in the fashion industry. It is also evident that there is potential to expand the body of knowledge regarding adoption in African developing countries, such as South Africa, that may have vary in terms of the extent of their barriers and enablers.

3.7. The gap in literature

Based on the literature reviewed, it can be seen that studies on CLSCM have started to feature more frequently in modern literature. This is evident in academic databases. A search using Scopus in 2019, for example, with the key words '*closed-loop supply chains*', produced 1 982 results, while one using EbscoHost, in the same year, produced a total of 1 115 results published between 1998 and 2019. Refining the search revealed that 1 065 of the 1 115 results provided by EbscoHost were published between 2016 and 2019, compared to one result that appeared to have been published between 1998 and 2000. This illustrates the progression of sustainability research. Although this type of supply chain has been adopted globally in the electronic and automobile

industries (Hong et al., 2015, p. 12), it is a relatively new concept in the fashion industry and in Africa's emerging economies, in particular.

Existing studies on the adoption of CLSCM activities often do not consider the unique features of the fashion industry and its products. Equally, they do not consider the operations of underdeveloped nations in Africa. To illustrate this, the researcher further refined the search on Scopus to include the word '*fashion*'. This produced a total of 17 articles published between 2008 and 2018 that focus on or mention CLSCM in the fashion industry. This is significantly lower than that of '*electronics*' and '*automobile*'. These latter two words produced 38 and 30 results, respectively, dating from as early as 2001 (to 2019). The average number of citations, for these three terms, further indicates a noticeable difference in the focus of current research. Refining the search with the key word '*electronics*' revealed that one article had been cited 1043 times, making it the most cited article in its search category. Using '*automobile*' as a key word generated one with 342 citations as the highest, while that for '*fashion*' had a maximum of 43 citations. To further probe the gap in literature, the researcher used '*smme*' as a key word. This produced a total of four results, cited 26 times.

These figures provide evidence that while literature on CLSCM continues to increase, that which focuses on the fashion industry is still limited. This is despite the industry's social, economic and environmental needs for more research on the subject. The results also show that a number of the articles that include the term '*fashion*' and '*smme*' focus on developed European and Asian markets. As a result, the context of African developing countries, such as South Africa, is not represented in literature. While these observations are not a complete representation of the entire body of knowledge, they do provide insight into the existing gap in literature that the present study aims to fill. These findings are summarised in **Table 3.1**. The identified studies also did not consider the contributions of university students, who were found, in this study, mostly to include Generations Y and Z. Collectively, this market of consumers is educated and has the potential to influence present and future consumption. Understanding the perceptions of this market in relation to sustainable practices in South Africa is critical, given global movement towards increased sustainability through the SDGs.

Table 3.1: Researcher’s Scopus search for closed-loop supply chain literature

Search words	Publishing period	Total results	Highest number of citations
“closed-loop supply chain” AND fashion	2008-2018	17	43
“closed-loop supply chain” AND automobile	2006-2019	30	342
“closed-loop supply chain” AND electronics	2001-2019	38	1043
“closed-loop supply chain” AND SMME	2013-2018	4	26

3.8. Conclusion

CLSCM merges the activities of linear supply chains with reverse logistics. As a result, systems that adopt it often include additional activities such as used product collection, reverse logistics and marketing. These are organised according to their contribution to the front, engine and back-end activities of CLSCM. The facilitation of these activities by SMME fashion retailers is the focus of this study. As such, the literature review provides a background to the development of CLSCM in the industry’s supply chains. While stakeholders could potentially experience the benefits of adoption, such as the improvement of their brand image and opportunities for creativity and sustainability, studies found that there are challenges associated with adoption. These include a complex sales and redistribution system and unsuitable product designs and composition of goods for recovery. Owing to the objective of this study, a review of literature related to SMMEs was provided. This showed that while the literature that observes the sustainable supply chain activities of fashion SMMEs is increasing, their representation in the body of literature of CLSCM is extremely limited. Application in Africa’s emerging economies

was also not represented, especially that which included the perspectives of consumers. Identifying this gap prompted this study.

CHAPTER FOUR: RESEARCH METHODOLOGY

4.1. Introduction

The previous two chapters provide an overview of the facilitation of sustainable supply chain practices in fashion supply chains that have led to stakeholder interest in the adoption of CLSCM. The theoretical framework used to achieve the objectives guiding this study was discussed further. A gap in the body of knowledge showed an absence of focus on the adoption of CLSCM activities by SMME fashion retailers in African developing countries, such as South Africa. It also showed an absence of studies that examine the perspectives of consumers in such countries. The thesis aimed to fill this gap by evaluating the potential adoption of these regenerative systems by SMME fashion retailers in South Africa, and exploring the perceptions of university students as potential and future consumers of such systems. The ultimate goal was to develop a model as a template for SMMEs to adopt these methods in their supply chains.

This chapter outlines the research methods used to achieve the objectives of this study. It presents literature of various concepts, theories and definitions of research methodology, while providing a detailed guide to the methods applied by the researcher in the empirical study. The methods discussed in this section include the research design, sampling strategies, primary data collection and analysis, and the ethical procedures observed throughout the study. These were selected based on their ability to enable the researcher to address the research problem and objectives.

4.2. Review of purpose and research objectives

The fashion industry is often characterised as volatile due to its dynamic and uncertain operating environment. The nature of the industry requires its stakeholders to be consistently innovative in order to meet the temporary demands of consumers (Nenni, Giustiniano, and Pirolo, 2013, p. 3;

Aftab et al., 2018, p. 212). The globalisation of supply chains has facilitated the low-cost strategies of modern stakeholders. The challenges of coordinating and managing these extended logistics networks to address the needs of consumers has led to the adoption of agile strategies (Čiarnienė and Vienažindienė, 2014, p. 1018). The concept of fast fashion therefore emerged in scholarly and industry discussions as a global best practice.

However, the social and environmental implications of these strategies is causing academics and industry practitioners to shift their focus towards improving the sustainability of the fashion industry (e.g. Bair, Anner and Blasi, 2020, p. 2). CLSCM surfaced among a myriad of solutions as a way to offset the post-consumption waste generated by the industry's growing '*throwaway culture*' (Bick, Halsey and Ekenga, 2018, p. 2). The literature review presented in Chapter Three revealed that while there is a growth in CLSCM research, it is still a fairly novel phenomenon in the fashion industry. This is reflected by the scarcity of literature. The administration of these circular systems is also often examined from the perspectives of large retailers and their supply chain stakeholders. This excludes the sizable number of SMME retailers that operate in the global fashion industry. It further excludes SMME retailers in developing countries, despite the significant economic role they play in these nations. Studies further exclude the perspectives of consumers in Africa, with this study highlighting university students as important stakeholders to establish the potential and future acceptance of the sustainable activities of CLSCM. The objective of this study is to fill this gap in the literature and provide a model for SMME fashion retailers in South Africa to adopt CLSCM.

4.2.1. Research objectives

The theoretical framework guiding this study was developed by Wang et al. (2013, p. 867) and discussed in Chapter Three. The variables in the model were used to formulate the objectives of the study and to guide the research methodology. As a form of market research, these variables were used to determine consumer perceptions of the products and services of CLSCs. The researcher focused on evaluating university students' perceptions and intentions to participate in

the activities of CLSCs and then used applicable variables to determine SMME fashion retailer and associated stakeholder perceptions of the activities of circular systems. An integration of the contributions of these two groups was used to establish the potential role of circularity in the operations of SMME retailers in the South African fashion industry and to develop a model that would serve as a guideline for further adoption. The research objectives are discussed below:

1. To assess the sustainability contributions of closed-loop supply chain management in the fashion industry

Research objective one was motivated by literature on sustainable practices that argues that CLSCM can improve the sustainability of supply chains, especially post-consumption. Sustainability is discussed with reference to the TBL. This comprises of three components: economic, social and environmental sustainability. The sustainability contributions of CLSCM are observed in the study.

2. To determine the extent to which product knowledge would impact the adoption of closed-loop supply chain management

Research objective two was derived from the product knowledge variable provided by Wang et al. (2013, p. 870), and discussed in Chapter Three. There are two components of this variable: familiarity and expertise (Wang et al, 2013, p. 870). This variable was used to identify consumer familiarity and expertise with the products and services of fashion CLSCs. It was further used to determine SMME familiarity and expertise with the activities of CLSCs. The researcher utilised this information to assess if the existing knowledge that both university students and SMME retailers had would have a positive or negative impact on their attraction to the activities of CLSCs. In the absence of consumer product knowledge, the researcher aimed to determine if brand equity and social and environmental consciousness would influence the university students' intentions to participate in the front and back-end activities of these circular systems. Where CLSCM knowledge was lacking in SMME retailers, the researcher observed if current

sustainability practices and a desire to be more sustainable and accountable for consumer fashion waste disposal would influence their perceptions of adopting circular systems.

3. To assess the extent to which perceived benefits would influence the adoption of closed-loop supply chain management activities

The perceived benefits of CLSCM activities were evaluated from the perspectives of university students and SMME fashion retailers. The responses provided allowed the researcher to determine if existing positive associations with these regenerative systems would influence their attractiveness to these stakeholders and influence their intention to act. Further insight into potential benefits was given by the CMT and non-profit organisation that also participated in the study.

4. To analyse how perceived risks would affect the adoption of closed-loop supply chain management

This research objective was designed using the perceived risks construct presented by Wang et al. (2013, p. 869). The construct was used to determine any potential risks that both university students and SMME retailers could identify of participating in or coordinating the activities of CLSCM, respectively. The variable was employed to further determine if such perceptions would restrict the attractiveness of these systems in South Africa, as a developing country. The CMT and non-profit organisation were also encouraged to provide any potential risks they too could identify of the adoption of CLSCM by SMME fashion retailers in South Africa.

5. To determine how consumer frame of reference would impact closed-loop supply chain management adoption.

Research objective five was established from a combination of three related variables: purchase attitudes, subjective norms and perceived behavioural control. These constructs were used to determine factors that are inspired by an individual's personal frame of reference that may positively or negatively influence support of the various CLSCM activities being studied. While this variable was limited to the university students, aspects of it featured in SMME retailer feedback about the level of control they had in their supply chains, the role of sustainability in their supply chain operations and the extent to which they believed they were responsible for consumer fashion disposal habits.

6. To evaluate support for the activities of closed-loop supply chain management systems from relevant stakeholders

This research objective was developed to enable the researcher to deduce, from the findings of both qualitative and quantitative studies, the level of support for CLSCM activities from SMME fashion retailers and university students as consumers of fashion products. From the data organised under this objective, the researcher was able to establish the extent to which CLSCM activities would be suitable for South Africa, as an African developing economy. Additionally, the study was able to determine the types of recovery methods that might be more successful for stakeholders in such a market, including consumers and SMME fashion retailers.

7. To develop a model for closed-loop supply chain management adoption by SMMEs in South Africa

The responses given by both respondents and participants were utilised to evaluate the potential role of CLSCM in South Africa. This feedback from multiple stakeholders, along with related

literature, was consolidated into a model that would support the adoption of CLSCM activities by SMME retailers in the South African fashion industry.

4.3. Research design

Research design is described by Akhtar (2016, p. 68) as a logical plan or blueprint of the research project. Similarly, Leavy (2017, p. 8) simply defines it as '*the process of building a structure, or plan, for your research project*'. According to Jongbo (2014, p. 88), the purpose of the research design is to assist the researcher in responding to the questions of their study. As such, the quality of the design is informed by the research questions and regards the presence of limitations, such as the accessibility of data and the availability of funds. In order to make certain that the study is effectively and efficiently directed to meet its objectives, the research design is selected after the research problem has been acknowledged (Mishra and Alok, 2017, p. 7-8). According to Akhtar (2016, p. 69), there are several questions that need to be addressed when formulating a research design. These include:

1. What is the research project's purpose?
2. Where should the study be conducted?
3. How should sampling be conducted?
4. Which methods should be used to collect data?

There are different types of research designs which include case study, descriptive and experimental research designs (Tshuma and Mafa, 2013, p. 115- 116; Grove, 2015, p. 1). This study used a descriptive research design, as it describes the phenomenon and reports on the findings related to the respondents and participants in relation to the adoption of CLSCM. It also used a case study approach to investigate the perceptions of SMME fashion retailers that participated in the study. While such an approach allows for more in-depth study, it restricts the number of participants that can be involved in the study (Creswell, 2015, p. 5). However, it gave

the researcher an opportunity to have a detailed impression of the internal and external operating environments of SMMEs in the fashion industry of South Africa. These approaches were further selected as the most ideal as the study aimed to have an exploratory description and analysis of the various factors that would potentially motivate or hinder the adoption of CLSCM activities by consumers, SMME retailers, and their supply chain stakeholders. The blue print for this study is illustrated in **Figure 4.1**.

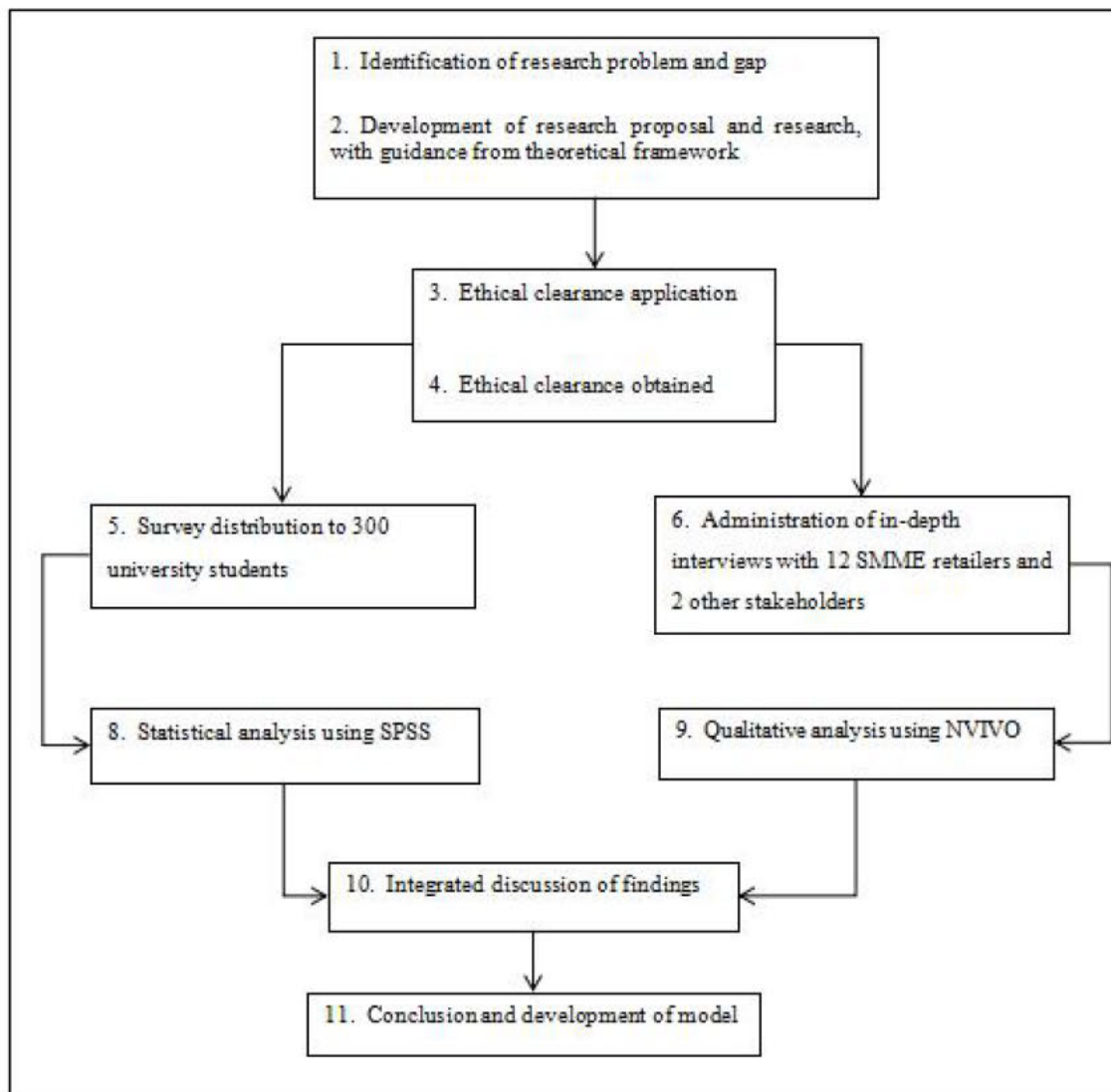


Figure 4.1: Blueprint for the study

4.4. Research approaches/ paradigms

Research approaches, sometimes referred to as research paradigms, are defined by Creswell (2014, p. 2) as '*plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation*'. Grover (2015, p. 1-2) describes research approaches as combining the plan of action that the researcher has developed in order to efficiently resolve the identified problem, with the methods that will be used to collect data from the sample or subject of the study.

According to Leavy (2017, p. 9), there are five types of research approaches: '*quantitative, qualitative, mixed methods research, arts-based research and community-based participatory research*'. There are benefits and drawbacks associated with each of these research approaches, some of which have been highlighted by Creswell (2015, p. 5). In order to optimise on the benefits of these methods, the researcher must be guided by the purpose of their study and the related research objectives when selecting a suitable approach.

To provide a more comprehensive analysis of the research phenomenon, the study applied a mixed methods approach. This approach combines elements of both quantitative and qualitative approaches. The approach was suitable for this study as the researcher established the value of investigating the perceptions of university students, as consumers of fashion products, along with those of SMME fashion retailers and other internal and external stakeholders knowledgeable about their operations. The mixed methods approach also enabled the researcher to effectively collect these insights and expand the depth of understanding of the phenomenon under study. These could not have been fully understood with the use of a single type of research approach, as each has its limitations. Using a mixed methods approach therefore enabled the researcher to benefit from the strengths of both quantitative and qualitative research approaches. The use of mixed methods also allowed the researcher to analyse the main research question from different angles, in order to address the research problem more effectively.

According to Austin and Sutton (2014, p. 436), qualitative research enables the researcher to gain insight into the viewpoints of participants. Leavy (2017, p. 9) explains that the inductive nature of this approach allows the researcher to have a more detailed investigation of the phenomenon under study. The presence of subjectivity can facilitate a holistic understanding of participant interpretations based on their experiences and frame of reference (Leavy, 2017, p. 9). The in-depth nature of this approach allows for the involvement of a more limited number of participants. Qualitative methods of data collection include focus groups, interviews and observations (Austin and Sutton, 2014, p. 438). Dagupta (2015, p. 151) also highlights the presence of case studies as significant for answering 'how' and 'why' questions in research. A case study approach was applied for the collection of data from the SMME fashion retailers as it allowed the researcher to employ a more exploratory approach to the study. Kumar (2011, p. 10) argues that exploratory research is used when there is insufficient knowledge about the phenomenon. Due to the existing gap in literature, this approach facilitated a significantly detailed understanding of the potential challenges and enabling elements of establishing CLSCM activities as an SMME fashion retailer in a developing African country.

The quantitative approach, on the other hand, is scientific and objective. Kumar (2011, p. 11) identifies it as a structured method. Similarly, it is described by Maxwell (2012, p. 29) as '*statistical*'. As a result, the approach is structured and, compared with qualitative approaches, allows the researcher to include a more representative, larger sample in the data collection (Creswell, 2015, p. 5). This approach was useful for collecting data from the university students as it allowed the researcher to draw opinions from a greater number of them as consumers of fashion products who are strategically positioned to have some awareness of sustainable practices. This gave a clearer impression of the market that would potentially act as both a supplier and consumer in a circular system.

A convergent mixed method design was used in this study. Through this procedure the qualitative and quantitative data were collected simultaneously and not in different stages (Creswell, 2015, p. 6). This is due to the complementary nature of the information that was being gathered from both stakeholders. As SMME retailers additionally gave insight into the habits of

their diverse consumer bases, this approach further enabled the researcher to distinguish any converging or contradictory information in the different data sets. **Table 4.1.** summarises the mixed methods observed in this study that will be discussed in the sections that follow.

Table 4.1. Summary of the mixed methods observed in the study

	Research Approach: Mixed methods	
	Quantitative	Qualitative
Study site	South Africa (University of KwaZulu-Natal)	South Africa (Gauteng, KwaZulu-Natal, North West, Limpopo, Western Cape Provinces)
Target population	University students in South Africa	SMME retailers whose target market includes university students, and internal and external stakeholders informed about their operations.
Targeted sample size	320 university students from the University of KwaZulu-Natal	16 participants (<i>14 SMME retailers, 1 CMT and 1 non-profit organisation</i>)
Actual sample size	300 university students	14 participants (<i>12 SMME retailers, 1 CMT and 1 non-profit organisation</i>)
Collection instrument	Questionnaires	Semi-structured in-depth interviews
Response rate	93.75%	87.5%

Data analysis tool	SPSS™	NVivo™
---------------------------	-------	--------

4.5. Study site

The study was conducted in South Africa due to the country’s commitment to sustainable development through the National Strategy for Sustainable Development and Action Plan (NSSD) (Department of Environmental Affairs, 2019, para. 4) and its NDP (South African Government, 2021, para. 1-3). Owing to the presence of both poverty and prosperity in South Africa, the country can be described as having characteristics of both developed and developing nations (Luke, 2015, p. 6). Its economic disparities largely exist as a result of the legislative policies of the Apartheid regime that promoted racial discrimination and segregation. This environment presented a unique study site for research of this nature. The country is situated on the southern tip of Africa and is bordered by four countries: Namibia, Botswana, Zimbabwe and Mozambique. In addition, within its borders are two countries: Lesotho and Eswatini, formerly known as Swaziland (South Africa Gateway, 2019, para. 9-12). South Africa has a land area of approximately 1 220 813 square kilometres (South Africa Gateway, 2019, para. 8) and a population estimated at 59.6 million (Statistics South Africa, 2020, p. 9), making it one of the largest countries in Southern Africa.

The country has nine provinces. These are: the Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga, Northern Cape, North West and Western Cape (Government Communication and Information System, 2018, p. 3). A map of these provinces is depicted in **Figure 4.2**. South Africa has a diverse racial and ethnic population, with black South Africans being in the majority. However, the racial distribution varies across provinces. The country’s diversity is equally evident in the number of official languages it has. There are eleven official languages spoken across all provinces. Included in these are IsiZulu, isiNdebele, Tshivenda, English and Afrikaans (South Africa Gateway, 2019, para. 25). Three capital cities were identified in the country. Pretoria is its administrative capital, while Cape Town and Bloemfontein are the legislative and judicial capitals, respectively (South Africa Gateway, 2019,

para. 39). Of the nine provinces in South Africa, data was collected from stakeholders in KwaZulu-Natal, Limpopo, North West, Gauteng and the Western Cape. Gauteng, KwaZulu-Natal and the Western Cape are recognised as significant contributors to the textile and apparel manufacturing activities in South Africa (Business Partners, 2014, para. 2). Their overall economic activities also make them the top three contributors to the country’s GDP. According to Statistics South Africa (2019, para. 2), SMMEs contribute a total of 39 % to the earnings of the formal business market. This makes them significant stakeholders in the South African economy.

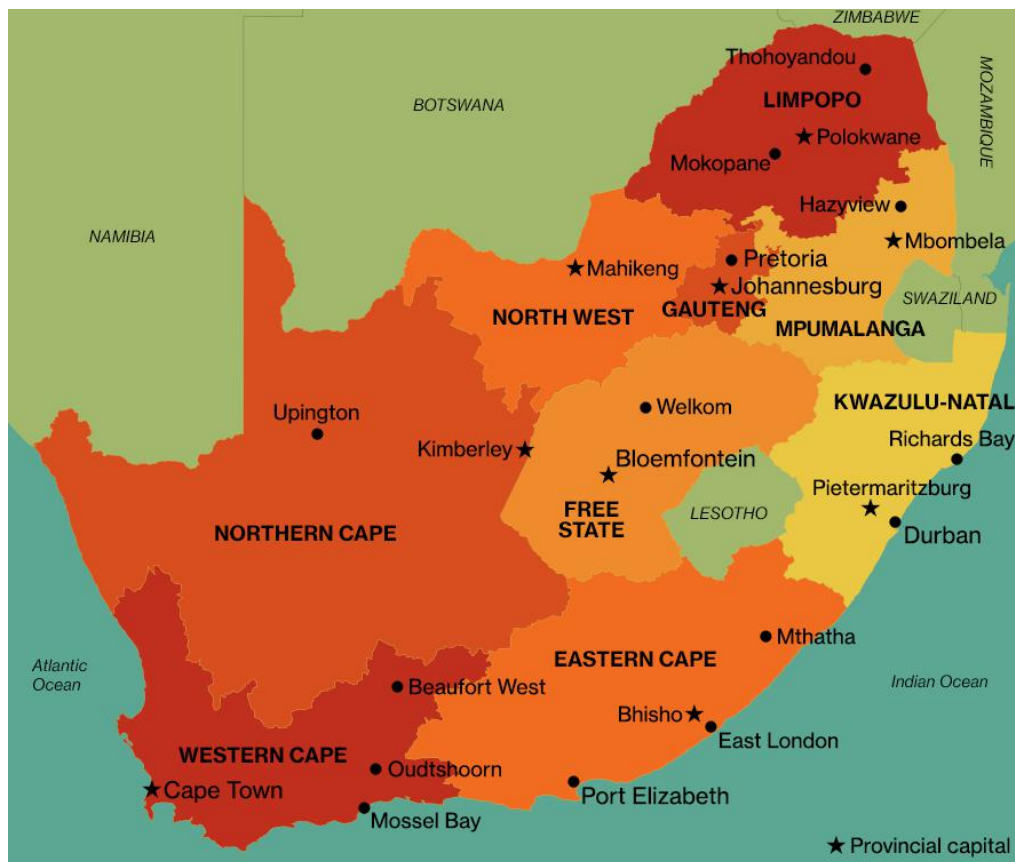


Figure 4.2: Map of South Africa’s nine provinces since 1996, showing provincial capitals and major cities

Source: (South Africa Gateway, 2019: para. 7)

4.6. Target population

Sekaran and Bougie (2016, p. 236) define a population as the ‘*entire group of people, events, or things of interest that the researcher wishes to investigate*’. This study included two target populations:

Quantitative section: The target population for this section of the study was students from universities in South Africa. University students were highlighted as important stakeholders to include in this study, as research from the United Nations Educational, Scientific and Cultural Organisation (UNESCO) reveals that such students have a keen interest in sustainable development and learning more about it (UNESCO, 2018, para. 2). A majority of university students are in either Generation Y or Z cohorts, making them substantial consumers at present and in future, in industries such as the fashion industry. Lee (2012, p. 14) notes that consumers in Generation Y, for example, prioritise purchasing fashion products, particularly clothing. Marques, Marques and Ferreira (2020, p. 2) claim that Generation Y and Z are at the forefront of campaigning for environmental reform. Understanding their perceptions as the future workforce, as entrepreneurs and as consumers is necessary for the development of the fashion industry.

Qualitative section: The target population for this section of the study is the total number of SMMEs operating as retailers in South Africa’s fashion industry, along with internal and external stakeholders that support them. The Department of Small Business Development (2019, p. 2) classifies SMMEs as businesses that have no more than 250 employees and an annual turnover that does not exceed R220 million, depending on the industry and sub-sector. As a result, all stakeholders fitting this description were included as part of the population to which the results of this study could be applied.

4.7. Sample

According to Igwenagu (2016, p. 36), there are two main sampling techniques used to draw a sample from the target population. These are probability sampling and non-probability sampling. Probability sampling allows for all entities in a target population to have an equal opportunity of being selected to participate in a study (Alvi, 2016, p. 12). On the contrary, non-probability sampling does not present all members of a target population with an equal chance of being selected to participate (Etikan and Bala, 2017, p. 1). Due to limitations in resources, a non-probability sampling technique was proposed as a more realistic option for this study. Using this method the researcher selected a sample for both the quantitative and qualitative sections of the study.

Two non-probability sampling techniques were used to select participants. These were convenience sampling and purposive sampling. Convenience sampling was used to approach participants for both primary data collection methods. Etikan, Musa and Alkassim (2016, p. 2) define convenience sampling as a non-probability method in which the researcher selects a sample of respondents based on '*...easy accessibility, geographical proximity, availability at a given time, or the willingness to participate*'. The University of KwaZulu-Natal was selected due to its accessibility to the researcher. It was also selected because it is a top-rated, culturally and demographically diverse institution (University of KwaZulu-Natal, 2017, p.1-15). The university was also chosen for this study because sustainability is rooted in its strategic plan, and in the efforts of both staff and students (Poku, 2021, para. 3-4). As such the university has also seen an increase in sustainability focused postgraduate research topics in the last decade (University of KwaZulu-Natal, 2022, p. 1). It was, therefore, assumed that the University of KwaZulu-Natal's students would have some awareness or interest in sustainable practices in order to be able to provide useful insights for this study. Based on this, a decision was made to focus the study on this institution. Using convenience sampling, university students who were available and willing to participate in the study were approached to participate. The findings are assumed to be a reasonable representation of South African university students' perceptions in general.

Judgement sampling, also referred to as purposive sampling (Vehovar, Toepoel and Steinmetz, 2016, p. 328), was used to select representatives from SMMEs and non-profit organisations who were most strategically positioned in their organisations. Stakeholders who had a comprehensive understanding of the short and long-term sustainability decisions and strategies of SMMEs were asked to participate. As a result, the SMME participants of the qualitative section of the study were all owners, while the participant from the non-profit organisation was its country coordinator. Due to the sizes of the businesses approached, stakeholders in these strategic positions were also more easily accessible to the researcher. This allowed for a more accurate insight into the current and future directions of the businesses of these stakeholders.

4.7.1. Sampling and sample size

According to Vehovar, Toepoel and Steinmetz (2016, p. 54), the selection of a sample size is dependent upon the type of research. Rubin and Babbie (2011, p. 68) summarise that sample sizes for quantitative studies are higher than those of qualitative studies. However, Vehovar, Toepoel and Steinmetz (2016, p. 54) explain that the objectives should be the influencing factors for sample sizes. Limitations in time and other resources can also influence this decision.

Table 4.2. presents a summary of the sampling and sample sizes of both the qualitative and quantitative sections of this study. The methods used to reach these sample sizes are discussed in the sections that follow.

Table 4.2: Summary of sampling and sample size

Research Approach	Data collection instrument	Sampling technique	Targeted Sample size
Quantitative <i>(Research objectives 2-6 observed)</i>	Questionnaires	Convenience Sampling	320
Qualitative <i>(Research objectives 1-4, 6 observed)</i>	In-depth semi-structured interviews	Convenience and judgement Sampling	16

Quantitative section: A comparison of sample sizes from studies using similar data collection instruments was conducted. Mugge, Jockin and Bocke’s (2017, p. 10) investigation of the selling of refurbished cellphones was conducted with 250 respondents. Wang et al. (2013, p. 874) accepted a sample of 288 out of a targeted 310 in their study of consumer purchase intentions of remanufactured automobile parts. O’Reilly and Kumar (2015, p. 492-493) explored recycling of garments in Delhi. Their study targeted 270 consumers and completed the study with 254 respondents. As a result, the researcher planned a sample size of 320 students to respond to the questionnaires for this study. Respondents were asked to participate in the study if:

- They were consumers of fashion products, for example, clothing, footwear, bags and accessories.
- They had purchased from South African based retailers.
- They were registered university students from the University of KwaZulu-Natal.

Qualitative section: Since a comprehensive list of SMMEs active in the fashion industry does not exist, a non-probability, convenience sampling method was used to select enterprises to be included in the study. Initially, an extensive, online search for potentially suitable, locally based enterprises was conducted. SMMEs from all provinces of South Africa associated with new or used clothing, accessories or shoes, were considered for the study. Thereafter, using judgment sampling, possible participants were selected and approached. Contact was made with 60 SMME retailers but only 5 (8%) agreed to participate. Later, the researcher then contacted a further 64 SMMEs to increase the sample size. A further 11 enterprises agreed to participate, bringing the total sample to 16 enterprises.

The study focused on selecting local South African SMME retailers but also included other stakeholders in the SMME fashion supply chain. One CMT stakeholder, that is also an SMME and provides services to SMME fashion retailers, and one non-profit organisation, that supports sustainability in the South African fashion industry, agreed to participate. Both these stakeholders were included in the study due to their experience with the CLSCM activities being studied and because of their knowledge of the operations of SMME retailers in South Africa's fashion industry.

Only owners of the businesses were asked to participate in the study. Each of the retail businesses were asked to participate based on the following criteria:

- If they were small, micro or medium-sized enterprises.
- If they were based in South Africa.
- If their product offering included new or used fashion items such as clothing, bags, accessories and footwear.
- If their target markets included university students in South Africa.

Criteria used to identify other suitable organisations to approach were:

- Awareness of the South African fashion industry supply chain.
- Awareness of the sustainability activities of SMME fashion retailers in South Africa.
- Active participation in the sustainability activities of SMME fashion retailers in South Africa.

4.7.2. Response rate

The total targeted sample sizes of the quantitative and qualitative sections of the study were 320 and 16 respectively. The respective response rates were 300 completed questionnaires (94% response rate) and 14 in-depth interviews that were concluded (87.5% response).

Questionnaires

While the targeted sample size was 320 students, due to the global pandemic resulting from the COVID-19 outbreak, only 300 of the questionnaires were answered before the national lockdown began in March 2020. The researcher presented the questionnaires to each of the potential respondents in person and was also present to address respondents' queries as they answered the questions.

Interviews

While the researcher had aimed to interview 16 participants, only representatives of 12 SMME fashion retailers, one CMT and one non-profit organisation were able to participate. According to Moran (2013, p. 1), the sample sizes of qualitative analyses are considered sufficient once the researcher has reached saturation. Saturation was assumed to have been achieved as few new

insights were provided by the participants interviewed towards the end of the study. The profiles of the organisations and participants who participated in this study are presented in **Table 6.1.** in Chapter six.

The response rate is summarised in **Table 4.3.**

Table 4.3: Response rate

Research Approach	Data collection instrument	Initial sample	Actual sample	Response rate
Quantitative	Questionnaires	320	300	93.75%
Qualitative	Interviews	16	14	87.5%

4.8. Data collection

Data for this study was collected using both secondary and primary sources. The secondary data was mainly collected and organised in the literature reviews presented in Chapters Two and Three. The findings from these secondary sources were, in the same manner, referenced in the entire thesis. The primary data consisted of two research instruments: questionnaires and semi-structured interviews. The research objectives were used to guide the content for both the primary and secondary research.

4.8.1. Secondary data

The researcher studied and referenced sources of secondary data throughout the study. Secondary data were particularly useful in the initial stages of the research process. Through

examining sources such as peer reviewed articles, academic textbooks, corporate websites, government documents, newspaper articles and documentaries, the researcher was able to highlight the research problem. A more detailed investigation of literature on academic databases such as Scopus, Google Scholar, Taylor and Francis and Ebscohost, revealed a gap in the body of knowledge. A literature review that consolidated findings from these sources further defined the purpose of this study. These secondary sources were further used to distinguish theories and concepts of the fashion industry, sustainable supply chain management and CLSCM. They enabled the researcher to gain insight into the roles of SMMEs in the economies of African developing countries and determine why a study of this nature would be especially beneficial to the continent's economic growth strategy. In addition, secondary sources were used to construct this chapter and were integrated with the data findings to provide a discussion of the phenomenon that led to the development of the decision support model.

4.8.2. Questionnaires

Questionnaires are commonly used by researchers as cost effective instruments for collecting data from a large sample (Rowley, 2014, p. 4). These can be distributed face-to-face, through email or through mail (Rowley, 2014, p. 21). This study used face-to-face distributed questionnaires. These were distributed solely to university student consumers of fashion products. According to Creswell (2012, p. 382), the design of the questionnaire is important in order to ensure that there is clarity and unambiguity of the instruments. This will encourage respondents to participate and provide correct responses. As a result, a well-designed research instrument will increase the response rate.

In order to structure the questionnaire well, the researcher made use of closed-ended questions. Closed-ended questions present respondents with a list of pre-selected responses to choose from (Brace, 2018, p. 55-56). For such questions, the researcher used measurements such as Likert scales, ranging from strongly disagree to strongly agree. These enabled the researcher to measure consumer perceptions towards CLSC activities. Care was also taken to ensure that questions did

not require prior knowledge of CLSCM but used terminology such as secondhand and recycled, which are more easily understood. A pilot test consisting of five respondents was used to test the research instrument and distinguish specific questions that would have been potentially challenging for all respondents to understand. A key outcome of the pilot test was that the questionnaire was too long and therefore prevented respondents from wanting to complete the study. The researcher addressed this concern by consolidating questions and removing repetitive ones. A re-examination of the research objectives and problem assisted the researcher in this process.

The administration of the questionnaires took place at the University of KwaZulu-Natal. The researcher recognised strategic locations that would allow her to have access to a diverse group of students. A University cafeteria was one such area. As many students often use this location to relax or take breaks between classes, the response rate from this location was significantly higher. In order to identify students to complete the questionnaires, the researcher approached students who appeared to have time to engage with the researcher. For students who showed interest, the researcher continued to inform them of the purpose of the study, and how long it would take to complete the questionnaire. After providing them with this information, the researcher allowed the students to decide if they would like to continue with the study or not. For those that chose to continue with the study, the researcher proceeded to explain concepts such as '*fashion*' to ensure that students were aware of what was being asked in the questionnaire. The concept of '*fashion*' was explained as including products such as clothing, bags, accessories and footwear.

Many students were willingly to participate because they found the research instrument simple to understand and to complete. In addition, they were also willing to participate because they had free time to respond to the questionnaires. However, as this location was more popular with undergraduate students, who represent the majority of the University's population, the researcher approached postgraduate students in postgraduate computer laboratories, among other areas. This strategy proved effective for acquiring a more diverse consumer base for the study.

4.8.2.1. Questionnaire design

The questionnaire was divided into eight sections. Sections C to G were structured based on the framework from Wang et al. (2013, p. 873) and from Abbey et al. (2015, p. 492). The questionnaire is included in Appendix C.

Section A: To gain an overview of the demographic information of the students, the researcher asked questions related to their age and level of education.

Section B: The current purchasing and disposal behaviours of the students were investigated. This section gave insight into the overall amount that the students spend on fashion products in a year and what motivates these fashion purchases. The questions in this section further examined their fashion disposal methods as these are a focal area of CLSCM. The researcher also probed the amount that the students spend on used fashion in a year. This gave further insight into how they currently interact with used fashion products in their lives. Multiple choice questions and multiple response questions were used in this section.

Section C: Product knowledge, as discussed by Wang et al. (2013, p. 871), guided the design of this section of the questionnaire. Questions related to consumer familiarity and expertise with the products and services of CLSCs were presented in a Likert scale format. Furthermore, the researcher explored the role of branding and information in student perceptions.

Section D: The perceived benefits of participating in the activities of CLSCs were probed in this section. A Likert scale format was also used here. The researcher presented students with a list of six benefits associated with potential financial, environmental, social and personal benefits. These included the potential affordability of used fashion, opportunities to consume responsibly and an alignment with the student's social and environmental consciousness.

Section E: The perceived risks of participating in CLSC systems were examined here. The students were provided with a list of potential risks presented in six Likert scale statements. These were drawn from studies such as Abbey et al. (2015, p. 492). The researcher explored aspects such as the cleanliness of used fashion, the social status associated with wearing used fashion, the obsolescence of their styles and trends, and potential cultural or religious conflicts.

Section F: Student attitudes and perceived behavioural norms were evaluated in this section. They were presented with five Likert scale statements that probed their opinions about the level of control they have regarding their fashion purchasing and disposal decisions, and their attitudes towards ethical consumption.

Section G: Student subjective norms were investigated in Section G. These questions aimed to determine the role of the student's frame of reference. Statements such as : *'I am concerned with how my peers and family members would view me if I wore used fashion'* and *'Purchasing or returning used fashion would make me responsible and ethical in the eyes of my peers and/or family members'* were presented in a Likert scale format.

Section H: The final section of the questionnaire had an objective to evaluate student support of the activities of CLSCs in light of the responses they had given in the previous sections. The researcher provided questions in a multiple choice and multiple response format. The questions explored the types of product categories (clothes, footwear, bags and accessories) that students were more likely to purchase for immediate reuse or as remanufactured. They additionally explored the ones that consumers were less likely to purchase. Students were also asked to characterise the motivational factors that would encourage their participation in CLSCs, such as financial incentives and transparency from the retailer and its supply chain members. Finally, students were asked to clarify the type of CLSC recovery and redistribution method that they were more likely to support.

4.8.2.2. In-depth interviews

The researcher collected the qualitative data using in-depth interviews. The interview guides are included in Appendix B and were organised according to the research objectives of the study. Research objectives one to four and research objectives six and seven were identified as appropriate for these stakeholders. This approach was beneficial to the study as it gave the researcher an in-depth perspective of the perceptions and current operations of SMME fashion retailers in South Africa. It also gave insight into the types of motivating elements that exist for the adoption of CLSCs and the types of challenges that can hinder their adoption and success rate. Due to the COVID-19 pandemic, the interviews were conducted via telephonic and the web-conferencing application Zoom. As a result of the challenges they were facing because of the pandemic, three representatives asked to provide written responses in their own time, due to time constraints.

Stuckey (2013, p. 56) identifies three types of interviews: structured, narrative and semi-structured. Semi-structured interviews are frequently used in research. These types of interviews have a pre-determined list of questions, but allow the responses given by the participant to guide the process (Stuckey, 2013, p. 57). Semi-structured interviews were regarded suitable for this study. The researcher was guided by an interview guide that included a list of between twenty-two and twenty-five questions. Interview guides are useful instruments for directing an interviewer (Creswell, 2012, p. 384). They also ensure that the interview questions are being directed by the research objectives of the study. The lengths of the interviews was dependent on the extent to which the interviewees chose to elaborate on each of the questions. However, the interviews did not extend beyond forty-five minutes and one hour.

4.8.2.3. Conducting the interviews

There were a selection of processes that were observed when conducting the interviews. These are presented according to when they occurred during the interview process:

Pre-interview

Before the interview process began, the researcher made initial contact with representatives of the retailers, via email or in person, in order to ask them to participate in the study. Gatekeepers' letters (Appendix D) were then sent to the participants by the researcher's supervisor. These letters stated the purpose of the study and invited the individual organisations to participate in the study. The letters also highlighted that confidentiality would be maintained in the study, and further advised that restriction of findings for a specific period of time could be arranged. The researcher's supervisor also communicated his availability to respond to any questions. Gatekeepers gave consent to participate in the study and stated whether their organisations' names should be included in the study or not. The researcher proceeded to apply for ethical clearance to continue with the study.

Upon receiving ethical clearance (Appendix E), the researcher made contact with the participants to schedule a date and time for the interview to take place. Participants communicated the telephonic or web-conferencing applications that were more convenient for them. The challenges presented by the global pandemic, along with its effects on business, meant that the researcher was only able to schedule interview appointments with fourteen out of sixteen representatives of the organisations that had initially agreed to participate in the study. Of the fourteen participants, three communicated that they preferred to provide written interview responses due to issues related to the global pandemic and time constraints. These participants were provided with more information about the study, along with clarity about the terms used and the activities being studied. The researcher was also available to respond to any additional questions these participants might have had while responding to their questions.

During the interview

Upon scheduling the interviews, each interviewee was asked to read and voluntarily sign the informed consent form before the interview took place. This document informed the participants about the objectives of the study and additional relevant information, such as the recording of the interview. The researcher then proceeded to ask the interviewees questions based on the interview guide. Since the researcher was interviewing four types of stakeholders, four interview guides were used for the interviews conducted. The researcher explained various concepts such as sustainability and CLSCM, before commencing the interviews. Sustainability, for example, was described as consisting of the economic, social and environmental performance of the business. CLSCM was described as a system that involves the collection of used fashion from consumers for reuse, recycling or remanufacturing. Flexibility was allowed during the interview process to enable the participants to recognise any other issues related to the topic that the researcher may not have considered. Interviewees were therefore given time to elaborate on their responses. The researcher wrote down additional notes and comments during the interviews.

Post-interview

Upon completing the interviews, the researcher organised each of the recordings in preparation for the transcription and data analysis processes. For participants that had communicated a preference for providing written interviews, the researcher read each of the responses thoroughly and contacted them for further clarity where needed.

4.9. Data analysis

After collection, the data was organised and arranged for analysis of the findings to take place. As the study made use of a mixed methods approach to research, different methods for data analysis were used:

Quantitative data

The quantitative data were pre-coded and then analysed using the software package SPSS. Prior to analysing the data, the researcher ensured that all questionnaires had been completed accurately, according to instructions and in full. In order to acknowledge any errors in response or in the data collection techniques of the researcher, each completed questionnaire was examined after every field collection day. This allowed the researcher to maintain the reliability and validity of the study. Using SPSS, the Kolmogorov-Smirnov test was applied to determine the normality of the variables in the study. Through this test's results, the researcher was able to establish suitable tests for the study. It was determined that non-parametric tests such as the Mann Whitney U test and the Kruskal-Wallis test were most suitable. To determine the reliability of the constructs of the study, Cronbach's Alpha was used. The researcher further used various descriptive and inferential statistical tests to analyse the data. Descriptive statistics were used to present the frequencies of some variables.

Qualitative data

After recording the semi-structured interviews, the qualitative data were transcribed. For more efficient transcription, the researcher made use of Otter™, a transcription software. The researcher uploaded the audio recordings of the interviews into the software and these were then transcribed. The researcher proceeded to listen to each interview and edit the transcriptions individually to check for any errors. The data was then analysed using thematic analysis with the application of

NVivo™ software. The researcher used the transcripts in the software package to assist in the search for themes and in breaking these down into categories. Manual content analysis was used for the model testing phase of the study.

4.10. Data quality control

To ensure that the study is reliable and valid, the researcher observed and applied various data quality control techniques for both the quantitative and qualitative methods used.4.10.1. Reliability and validity

Quantitative data

Reliability is a measure of the repeatability and consistency of the findings. It is a measure of the ambiguity and clarity of research instruments (Creswell, 2012, p. 159). Types of tests of reliability include: test-retest reliability and internal consistency reliability (Creswell, 2012, p. 160). In order to produce credible results, the study used internal consistency to estimate the reliability of the quantitative study. The variables in the questionnaire, for example, were tested using the Cronbach's Alpha. According to Taber (2016, p. 1275), Cronbach's Alpha is a frequently used statistical approach that tests the reliability of the scales used in a study. As a result, this statistic was especially relevant for the Likert scale statements used in the quantitative research instrument.

According to Zamanzadeh, Rassouli, Abbaszadeh, Majd, Nikanfar and Ghahramanian (2014, p. 163) validity is concerned with how well the research instruments test what they are meant to test. Connell et al. (2018, p. 1893) explain that in order to have content validity, the questions asked in the research instrument need to be applicable to the components being tested. A pilot test was conducted to determine the validity of the questions asked in the questionnaires. Five respondents were approached to determine if the questionnaires were probing what the

researcher intended and if the respondents understood the questions. In a similar manner, Muijs (2010, p. 66) prescribes the need for an extensive literature review that will enable the researcher to understand the concept under investigation. To ensure that the researcher understood the concept, a literature review focusing on the adoption of CLSCM was conducted prior to the construction of the research instruments. The researcher further constructed the questionnaire using the framework guiding the study. Connell et al. (2018, p. 1894) further discuss the use of face validity as a measurement of '*whether the items of each domain are sensible, appropriate, and relevant to the people who use the measure on a day-to-day basis*'. However, Ekuma (2012, p. 117) warns that face validity is vulnerable to subjectivity. Due to the exploratory nature of this study, content validity was limited as a comparison of similar studies could not be made.

Qualitative data

To be regarded as reliable, qualitative data, on the other hand, can be tested for consistency and neutrality (Noble and Smith, 2015, p. 34). To increase the reliability of the information provided by the participants, the researcher ensured that all who participated in the study were aware that the information they provided would remain confidential and could be withdrawn at any point before the study was completed. This was intended to allow for more honest opinions. According to Saleh and Bista (2017, p. 69), 78.3 % of participants prefer being provided with anonymity and confidentiality. To further ensure the reliability and credibility of the qualitative research, the researcher details all aspects of the research process that may include bias, such as the decision to use non-probability sampling techniques. In addition, the limitations of the study are also presented for further transparency. Noble and Smith (2015, p. 35) also discuss the generalisability of a study. Despite its limitations, the study is considered generalisable to other parts of South Africa, as the SMMEs studied target consumers in all parts of South Africa and are based in five provinces of the country.

To facilitate the truth value discussed by Noble and Smith (2015, p. 35), the researcher made use of semi-structured interview questions which allowed participants to expand further and include

additional areas of focus that had not been considered by the researcher. The transparent detailing of the research methods observed, including the challenges encountered, further enabled consistency in the reporting (Noble and Smith, 2015, p. 35).

4.11. Ethical considerations

The study observed various ethical considerations throughout the research process. Before the data collection process, the researcher received gatekeepers' letters from representatives of each of the organisations. These were submitted to the University of KwaZulu-Natal's Humanities and Social Sciences Research Ethics Committee (HSSREC) as part of the ethical clearance process, along with the questionnaire (Appendix C) and semi-structured interview guides (Appendix B). All who were approached to participate in the study were asked to do so on a voluntary basis, as no payment was offered. A consent form (Appendix A) was given to the respondents of the questionnaire and the interview participants explaining the objective of the study and how privacy would be maintained. The researcher asked all participants and respondents to read and sign the consent form, prior to responding to the questions in the questionnaire or participating in the interviews. All who participated in the study reserved the right to withdraw at any point before the research was concluded. The transcripts and completed questionnaires were used for the purposes of this study alone. Upon completion of the study, these were locked in a safe by the researcher's supervisor, and will be kept there for a period of five years. The study further acknowledges any literature used in the research by reference to the names of the authors.

4.12. Conclusion

This chapter provided a detailed overview of methods employed during the research process. The research objectives were discussed in relation to the research problem and the conceptual framework. Additionally, the application of the framework to the study was presented. A mixed methods approach was used to collect data from both SMME retailers and consumers of fashion

products. Data was collected from 300 university students using questionnaires. It was also collected using interviews conducted with twelve representatives of SMME fashion retailers, one representative of a CMT and one representative of a non-profit organisation with knowledge of the South African fashion industry. The data collected was organised and then an appropriate data analysis method was applied. The quantitative data were analysed using the SPSS™ package, while the qualitative data were analysed using NVivo™. The researcher observed various processes to maintain the reliability and validity of the study. Ethical considerations were also observed throughout the research. These included the administration of informed consent forms, maintaining the anonymity of participants and respondents, and an application for ethical clearance.

CHAPTER FIVE: QUANTITATIVE RESEARCH FINDINGS AND ANALYSES

5.1. Introduction

The research design was presented in Chapter Four. The chapter provided an in-depth explanation of the methods the researcher used in order to address the objectives of the study. The findings of the empirical research are presented and analysed in this chapter. Data were collected from university students at the University of KwaZulu-Natal to establish potential market opportunities for the activities of CLSCs, if adopted by SMME fashion retailers in South Africa. The researcher employed various descriptive and inferential statistical tests in order to analyse the data. The chapter begins with a presentation of the response rate for the quantitative research instrument. Through SPSS, the Kolmogorov-Smirnov test was applied to determine the normality of the variables in the study. Using the results from this test the researcher was able to determine that non-parametric tests such as the Mann Whitney U test and the Kruskal-Wallis test were most suitable for the study. The researcher also made use of descriptive statistics to present the frequencies of some variables. Cronbach's Alpha was used to determine the reliability of the constructs in the study. The findings presented in this chapter were organised according to the following research objectives:

- Research objective two: To determine the extent to which product knowledge would impact the adoption of CLSCM.
- Research objective three: To assess the extent to which perceived benefits would influence the adoption of CLSCM activities.
- Research objective four: To analyse how perceived risks would affect the adoption of CLSCM practices.
- Research objective five: To determine how consumer frame of reference would impact CLSCM adoption.

- Research objective six: To evaluate support for the activities of CLSCM systems from relevant stakeholders.

5.2. Response rate

Guided by the objectives of the study and themes in the research methodologies of the referenced and relevant literature (e.g. Wang et al., 2013, p. 872-873), the quantitative study selected a sample size of a total of 320 university students, from the University of KwaZulu-Natal, to represent current and future consumers of fashion products. The researcher distributed the targeted number of questionnaires by hand. However, only 300 questionnaires were returned to the researcher before the beginning of the national lockdown, imposed as a result of the COVID-19 outbreak in 2020. The total response rate for the questionnaires was 93.75%. This was high because the questionnaires were personally distributed and the researcher was available to assist respondents where possible.

5.3. Kolmogorov-Smirnov test

In order to determine whether to use parametric or non-parametric statistical tests, the researcher applied the Kolmogorov-Smirnov test for normality to all the variables in the questionnaire. As a result, there were two hypotheses that were tested. These were:

H₀: The sampled population is normally distributed.

H₁: The sampled population is not normally distributed.

The results from the Kolmogorov-Smirnov test are presented in **Table 5.1**. They reflect that the p-values ($p < 0.05$) for all the variables were below the 5% significance level, thus rejecting H₀.

As a result the researcher could only use non-parametric statistical tests, such as the Kruskal-Wallis test, for the research.

Table 5.1: Kolmogorov-Smirnov test

	Kolmogorov-Smirnov ^a		
	Statistic	df	Sig.
Age	.517	300	.000
Gender	.427	300	.000
Highest level of education	.461	300	.000
How much do you spend on fashion in a year?	.199	300	.000
How much of this is spent on used fashion?	.262	300	.000
How people perceive you in your outfit.	.524	300	.000
Affordability.	.355	300	.000
How you view yourself in your outfit.	.421	300	.000
Your daily activities.	.468	300	.000
What is trendy or popular at the time.	.520	300	.000
Brand name	.527	300	.000
The environmental/social impact of the item	.540	300	.000
Other	.541	300	.000

Recycle my worn fashion	.537	300	.000
Donate my worn fashion	.485	300	.000
Throw out my worn fashion	.529	300	.000
Keep my fashion for sentimental purposes	.487	300	.000
Create new fashion items with my worn items	.527	300	.000
Other	.484	300	.000
I have purchased or considered purchasing secondhand fashion products.	.178	300	.000
I have purchased or considered purchasing fashion products made from used fashion.	.192	300	.000
I have experience with recycling my used fashion items.	.217	300	.000
I have been sufficiently exposed to advertising/information about used fashion products and where to return/purchase them.	.224	300	.000
I am aware of retailers that provide a service for me to bring my worn fashion for recycling/reuse/remanufacturing.	.184	300	.000
Used fashion is/would be more attractive to purchase from a brand I perceive to be of high quality.	.253	300	.000
With more information I would be more likely to increase/consider purchasing used fashion.	.286	300	.000
With more information I would be more likely to return my worn fashion items for reuse/remanufacturing/recycling.	.271	300	.000

Used fashion is affordable or cheaper than new fashion	.302	300	.000
Used fashion is unique and trendy	.277	300	.000
Returning/purchasing used fashion is attractive to me because it benefits society and the environment.	.237	300	.000
Purchasing used fashion would allow me to enjoy luxury brands at more affordable prices.	.246	300	.000
Returning/purchasing used fashion is attractive to me because it aligns with my values/lifestyle.	.250	300	.000
The option to return clothes to retailers for reuse/remanufacturing/recycling would make it easier for me to become a more responsible consumer.	.258	300	.000
Used fashion is disgusting and unclean.	.275	300	.000
The quality of used fashion is always lower than that of new.	.215	300	.000
Used fashion is not trendy and is generally outdated	.256	300	.000
I would feel uncomfortable knowing that someone I do not know is wearing my used fashion items.	.262	300	.000
Wearing used fashion would compromise my social status	.261	300	.000
Wearing used fashion from an unknown source is not acceptable in my culture/religion.	.229	300	.000
When purchasing fashion I am very concerned with how the brand treats society, its employees and the environment.	.209	300	.000
I believe I have an ethical responsibility, as a consumer, to	.272	300	.000

dispose of my worn fashion products in an ethical manner.			
Consuming ethically is something I would personally like to do regardless of the opinions of those close to me.	.268	300	.000
In my household I have full control over what fashion products I choose to purchase and when.	.266	300	.000
In my household I have full control of how I dispose of my worn fashion items.	.284	300	.000
I am concerned with how my peers and family members would view me if I wore used fashion.	.256	300	.000
Purchasing/returning used fashion would make me responsible and ethical in the eyes of my peers/family members.	.217	300	.000
If I were seen purchasing used fashion, many of my peers/family members would approve.	.243	300	.000
If I were seen returning my worn fashion for reuse/remanufacturing/recycling many of my peers/family members would approve.	.271	300	.000
I would return/purchase used fashion if my peers/family members did the same.	.204	300	.000
Given the option, which types of used (secondhand/remanufactured) products are you most likely to purchase?	.251	300	.000
Given the option, which types of used (secondhand/remanufactured) products are you less likely to	.340	300	.000

purchase?			
I am offered a discount or cash payment by the retailer.	.399	300	.000
It is convenient for me to do so	.403	300	.000
I know where the proceeds are going.	.437	300	.000
It is to a charity store/hospice.	.362	300	.000
Other	.540	300	.000
I would not return my worn fashion.	.530	300	.000
I know the previous owner	.491	300	.000
They are sold in a convenient and clean environment	.391	300	.000
The returns policy is similar to that of new products	.413	300	.000
I know where the proceeds are going	.485	300	.000
They are remanufactured into new products	.391	300	.000
I would not purchase used fashion	.540	300	.000
I am more likely to purchased secondhand/remanufactured fashion products if they are sold by a/an:	.317	300	.000
Why type of CLSC strategy are you most likely to support?	.188	300	.000

5.4. Cronbach's Alpha

According to Taber (2016, p. 1273), Cronbach's Alpha confirms that '*tests and scales that have been constructed or adopted for research projects are fit for purpose*'. It is a method for measuring internal consistency. It tests the reliability of ordinal data particularly that which is collected using Likert scales. It further tests the extent to which a selected set of items measure the same concept (Bonett and Wright, 2014, p. 3). The results for **Q.19-24, 25-30** and **34-35** produced Cronbach's Alpha values of above 0.7. This is generally considered as acceptable. The alpha values for **Q. 11-19, 32-33** and **37-40** were below 0.7. Research by Taber (2016, p. 1282) demonstrated that such results are not unusual for exploratory research. The results of this test were summarised in **Table 5.2**.

Table 5.2: Cronbach's Alpha test

Questions	Number of items	Cronbach's Alpha
Q11-Q19	8	.574
Q19-Q24	6	.737
Q25- Q30	6	.746
Q32 and Q33	2	.698
Q34 and Q35	2	.735
Q37-Q40	4	.655

5.5. Demographic Information

To gather general information about the backgrounds of the students, the researcher asked a series of demographic questions. Studies (e.g. Duffett, 2018, p. 13) show that the demographic backgrounds of consumers can have an impact on their consumption patterns and perceptions and as a result inform how they choose to respond to the questions in the research instrument. The questions asked in Section A of the research instrument included respondents' gender, age and highest level of education. This demographic information was used to identify any differences in the manner in which respondents answered the questions in the sections that follow. Upon reflection, it was decided that responses to **Q. 3** (*'What is your marital status?'*), **Q. 5** (*'What is your current occupational status?'*) and **Q. 6** (*'How many children/dependents do you have?'*) were likely not relevant to a majority of university students. As a result, these were discounted.

5.5.1. Gender

A total of 300 university students responded to the questionnaires. **Table 5.3.** shows that a larger percentage of females participated in the study in comparison to males. The findings show that 33% of the respondents were male and 67% of the respondents were female. The population of South Africa and the University of KwaZulu-Natal, both have a greater number of females than males. Statistics South Africa (2020, p. viiii) summarises that South Africa's population comprises 51.1% females. University of KwaZulu-Natal (2017, p. 13) reports that out of a total of 46 520 students, there were 26 631 female students and 19 889 male students registered in 2016. In order to have an impression of potential differences in the population's perceptions and behaviours, gender was used to sort and compare some of the variables in this study.

Table 5.3: Gender distribution

Gender (n=300)	Males	Females
Frequency	99	201
%	33%	67%

5.5.2. Age of respondents

The age distribution of the respondents is presented in **Table 5.4**. The table reveals that there was a greater percentage of Generation Y and Z students. Most who responded to the questionnaire were between the ages of 18 and 24 years. This is consistent with the fact that the research was conducted at a university where the population of students is larger in this age category. According to Statistics South Africa (2016, p. 53), male students register at post-secondary institutions at a later age in comparison with females. However, most students, both male and female, enrol in post-secondary education between the ages of 18 and 20 years. The figures in the table reflect this. Of the total number of male students who participated in this study, 73.7% of them were between the ages of 18 and 24 years. By comparison, 96% of the total number of females who participated were in this age group. The table also shows that there were no females above the age of 34 who responded to the questionnaire, compared to males where 8.1% of respondents were between the ages of 35 and 44 years and 1% between the ages of 45 and 54 years.

Table 5.4: Age distribution

Age of respondents (n= 300)	MALES		FEMALES	
	Freq	%	Freq	%
18-24 years	73	73.7%	193	96%
25-34 years	17	17.2%	8	4%
35-44 years	8	8.1%	0	0%
45-54 years	1	1%	0	0%
Total	99	100%	201	100%

5.5.3. Highest level of education

Students were asked to indicate their highest level of education. The results were presented in **Table 5.5**. Only consumers who were students at tertiary level were considered for this study. A large percentage of students reported that their highest level of education was a matric. All of these students were in the process of studying towards their first degrees. University of KwaZulu-Natal has a larger population of students in undergraduate degrees compared with postgraduate degrees and this is evident in these findings (University of KwaZulu-Natal, 2017, p. 12). A total of 60.6% of the male students and 83.1% of the female students reported this. According to Statistics South Africa (2016, p. 53), enrolment at post-secondary institutions is higher for qualifications that demand a study period of between three or four years. This refers particularly to undergraduate degrees. The table below reflects similar results. It shows a

significantly low rate in the number of participants with degrees. Of the male students who participated in the survey, only 15.2% have a bachelor's degree. This is compared to 12.4% of female students. Moreover, the findings show that there were more male students with postgraduate degrees, in comparison to females. For example, 18% of males reported to have a masters degree, compared with 1.5% of females. In addition, 4% of the male students had doctorates. While all participating students with masters degrees were studying towards acquiring additional postgraduate degrees, none of the female students who participated were recorded as already having doctorate degrees as their highest qualification.

Table 5.5: Educational levels of respondents

Highest level of education (n= 300)	MALES		FEMALES	
	Freq	%	Freq	%
Matric	60	60.6%	167	83.1%
Post-secondary certificate	2	2%	5	2.5%
Diploma	0	0%	1	0.5%
Bachelor's Degree	15	15.2%	25	12.4%
Masters	18	18%	3	1.5%
PhD	4	4%	0	0%
Total	99	100%	201	100%

5.6. Consumer behaviour

This section of the questionnaire comprised four questions. Through these questions, the researcher aimed to identify the current consumption behaviours of the students. The questions explored total expenditure on fashion products and further probed the percentage of used fashion items presently purchased by consumers. In addition, the researcher intended to determine the factors that motivate the students' purchases and the ways in which they currently dispose of their used fashion. These questions helped to establish an impression of some of the current behaviours, specifically regarding used fashion consumption and disposal, that may influence respondents' perceptions of participating in the activities of CLSCs.

5.6.1. Annual fashion expenditure

The consumers were asked: *'How much do you spend on fashion in a year?'* The results are presented in **Figure 5.1**. In response, 3% of males and 3.5% of females estimated that they spent less than R500. This was the lowest represented category of expenditure for both genders. In addition, 13.1% of males and 13.9% were recorded as having an expenditure of between R500 and R1 000. The most common category of expenditure was between R1 001 and R3 000, with 34.3% of females and 35.4% of males responding that this is what they spent on fashion annually. Of the male respondents, 28.3% noted that they spent between R3 001 and R5 000, compared to 20.9% of females. The highest expenditure of more than R5 000 was recorded by 20.2% of males and 27.4% of females. The analysis provided in the figure signals that females have a higher annual fashion expenditure compared to males.

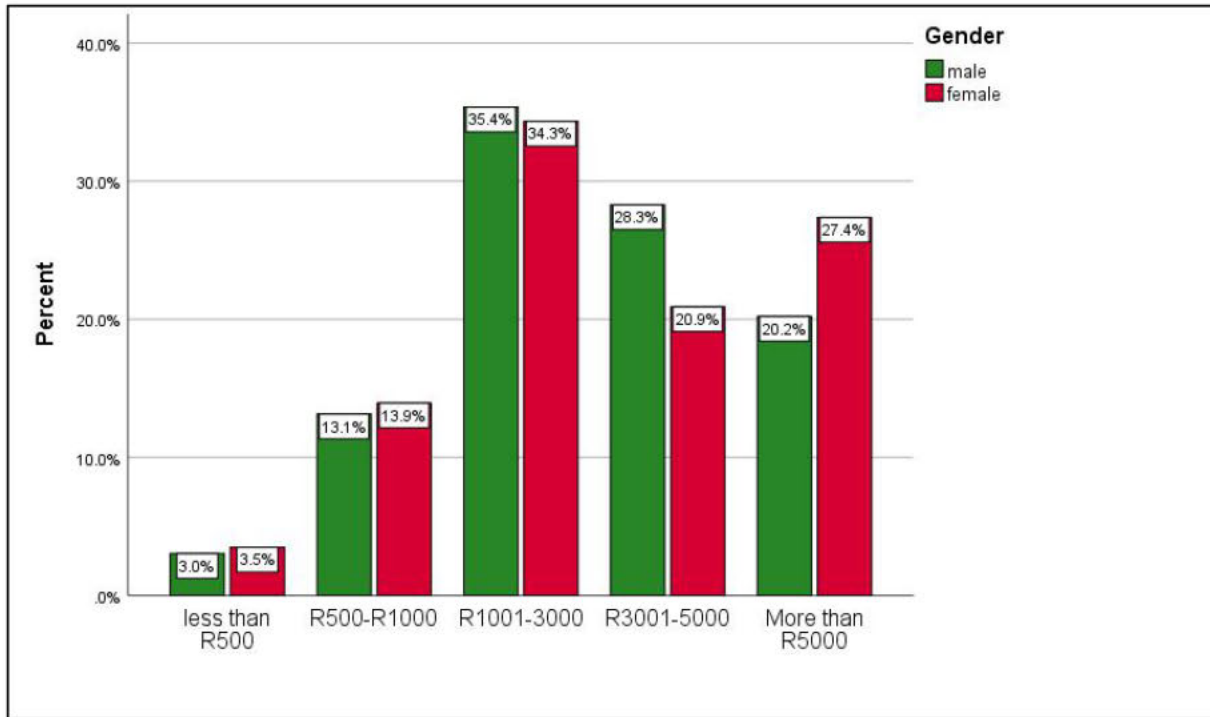


Figure 5.1: Annual fashion expenditure

5.6.2. Percentage of annual fashion expenditure spent on used fashion

Figure 5.2. displays the percentage of annual fashion expenditure spent on used fashion. This was the first question asked that helped the researcher gain insight into the current consumption of used fashion. The majority of females (45.3%) calculated that they spent less than 10% of their annual overall budget on used fashion. This is compared to the majority of males (42.4%) who recorded that none of their budget was spent on used fashion. Only 2% of males and 2% of females estimated that they spent more than 50% of their annual overall budget on used fashion.

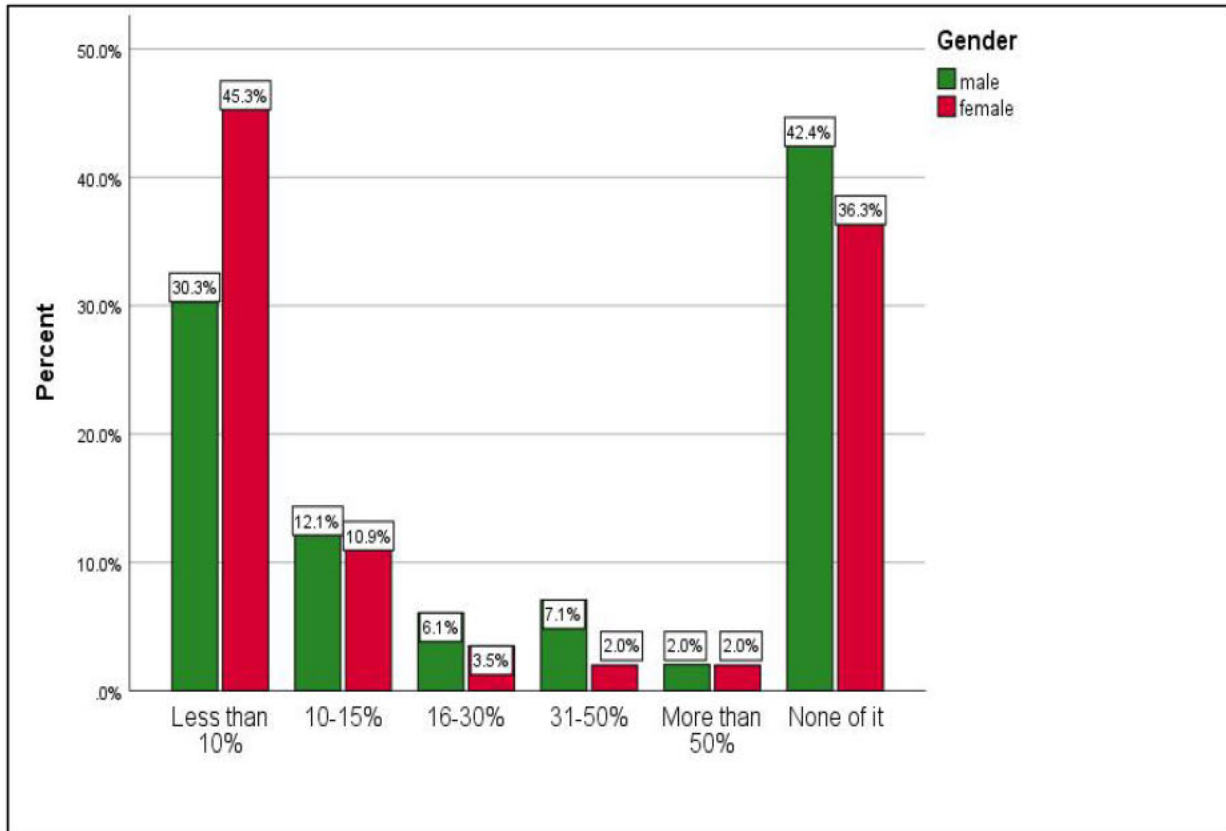


Figure 5.2: Percentage of annual fashion expenditure spent on used fashion

5.6.3. Fashion purchase motivation

Studies show that the factors that motivate the consumption habits of consumers can influence their attraction towards sustainable fashion supply chain practices (e.g. Abbey et al., 2015, p. 488). The researcher established a list of factors that can motivate the fashion purchases of consumers. These were arranged into a multiple response question (*Q9: 'What motivates your fashion purchases?'*). The data were sorted according to gender in order to determine if there were any significant similarities or differences between the genders. The results were organised into two figures: **Figure 5.3.** (males) and **Figure 5.4.** (females).

The majority of male respondents (31.8%) indicated that their fashion purchases were motivated by how they viewed themselves in their outfits. This factor was followed by 30.7% who were

motivated by affordability. In addition, 8.4% of the male students indicated that they were motivated by the brand name and only 3.4% by trends. The environmental or social impact of the fashion products was not a significant motivator as only 2.8% of male respondents selected this response. These results are illustrated in **Figure 5.3**.

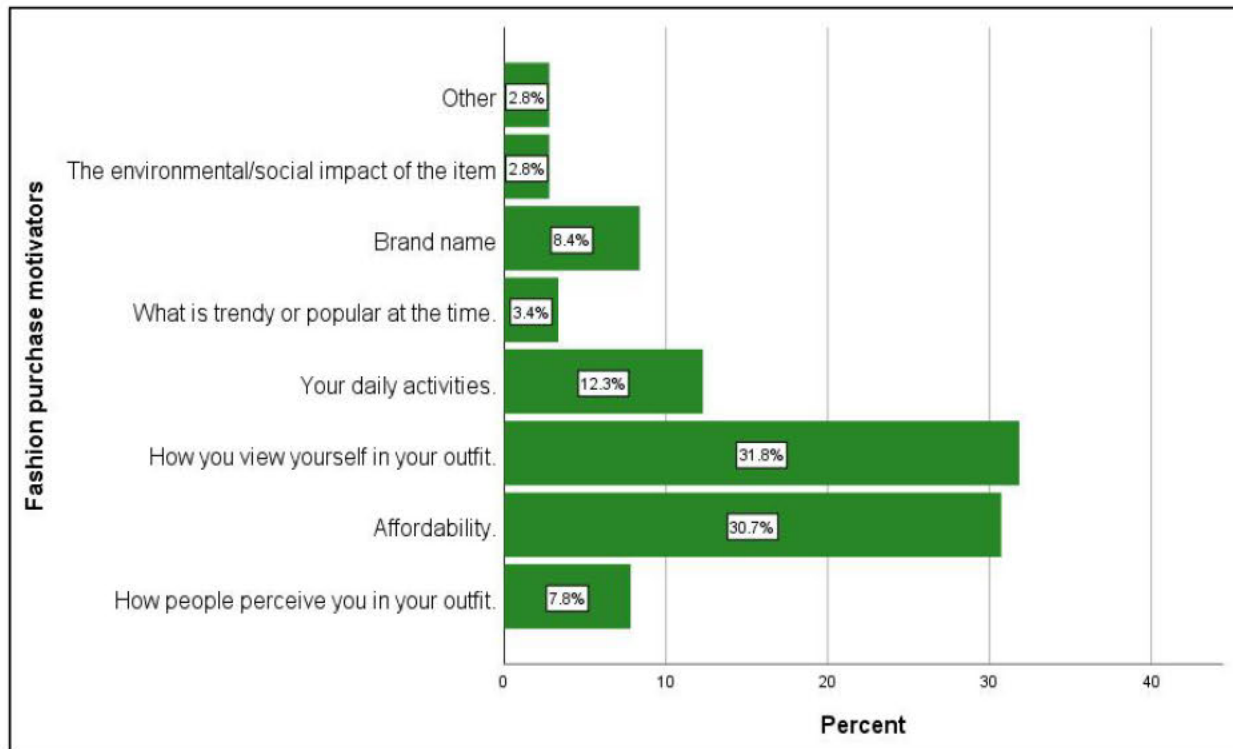


Figure 5.3: Fashion purchase motivation (males n=99)

Similar to the male respondents, the female respondents selected how they view themselves in their outfits (36.2%) and affordability (26.6%) as categories of factors that are important motivators when purchasing fashion products. Only 2.8% of female respondents indicated that the environmental or social impact of the fashion products is a motivating factor. The results of this section of the study are summarised in **Figure 5.4**.

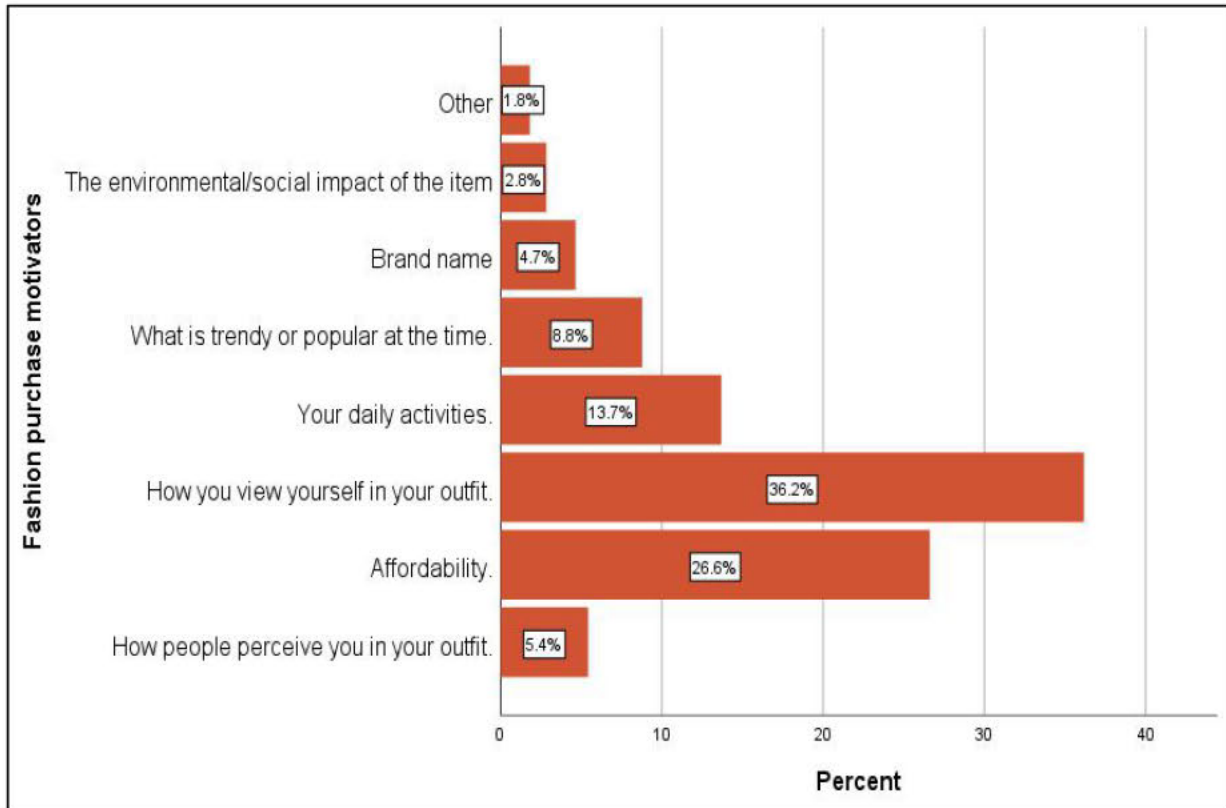


Figure 5.4: Fashion purchase motivation (females n=201)

5.6.4. Consumer disposal of used fashion products

How consumers currently dispose of their fashion products is a contributing factor towards determining current and future participation in CLSC front-end activities. This participation is essential as consumers are suppliers of the used fashion products needed for retailers to successfully facilitate the CLSC process (Hvass, 2016, p. 143). The researcher established a list of ways in which consumers generally dispose of their fashion products. The findings were divided into two figures: **Figure 5.5** (females) and **Figure 5.6**. (males).

Most of the female students (82.1%), who responded to the questions, selected that they donate their worn fashion. The second category of disposal that was popular among female respondents (22.4%) was *'keep my fashion for sentimental purposes'*. Of the female students that participated

in the study, 12.9% selected that they create new fashion items with their worn items. 7.5% selected that they recycle their worn fashion and 7% selected that they throw out their used fashion. **Figure 5.5.** depicts these findings.

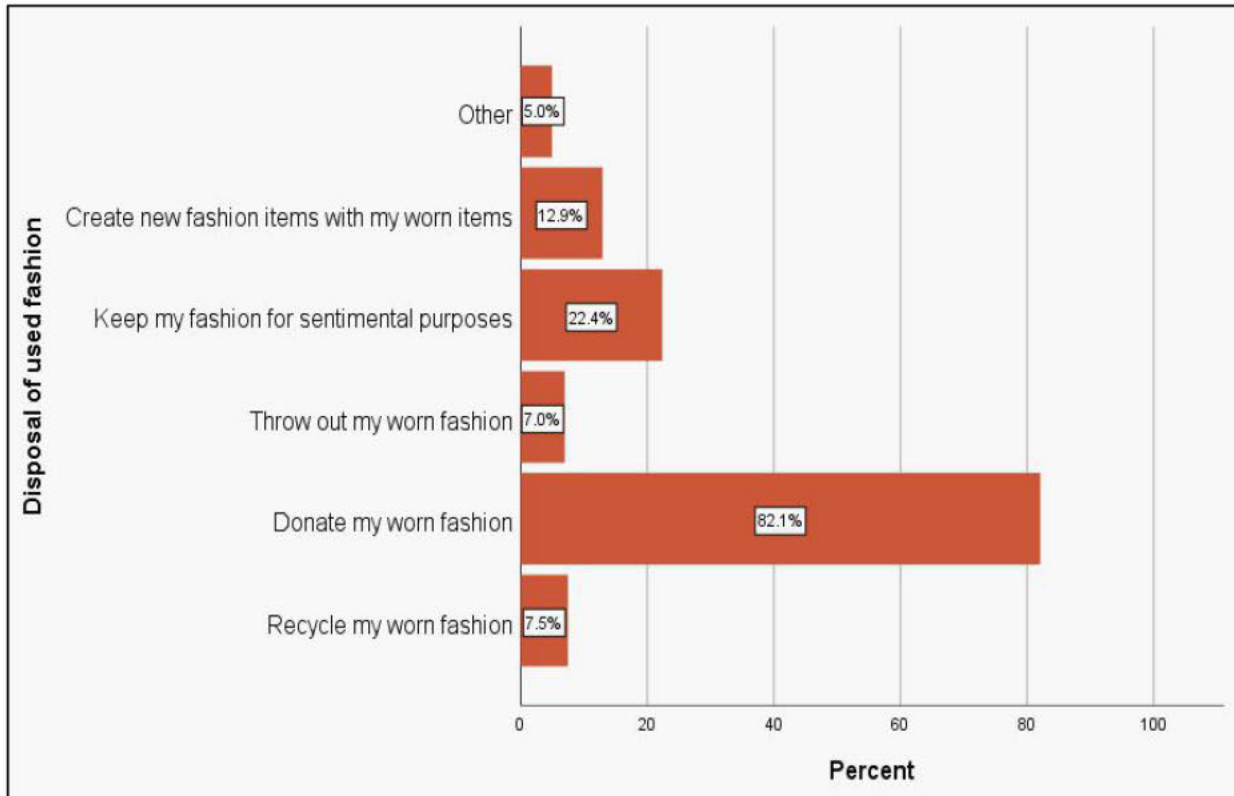


Figure 5.5: Disposal of used fashion (females n=201)

Similar to the female respondents, the donation of used fashion was dominant in male student responses (73.5%). The second category of disposal methods that was most selected by the male respondents (18.4%) was *'keep my fashion for sentimental purposes'*. The findings further recognise that there were more male consumers who selected that they throw out (17.3%) their used fashion compared to those that create new fashion items with their used items (6.1%). These figures show significant differences between the male and female student consumers. Only 7.1% of the male respondents selected that they recycle their used fashion. These responses are presented in **Figure 5.6.**

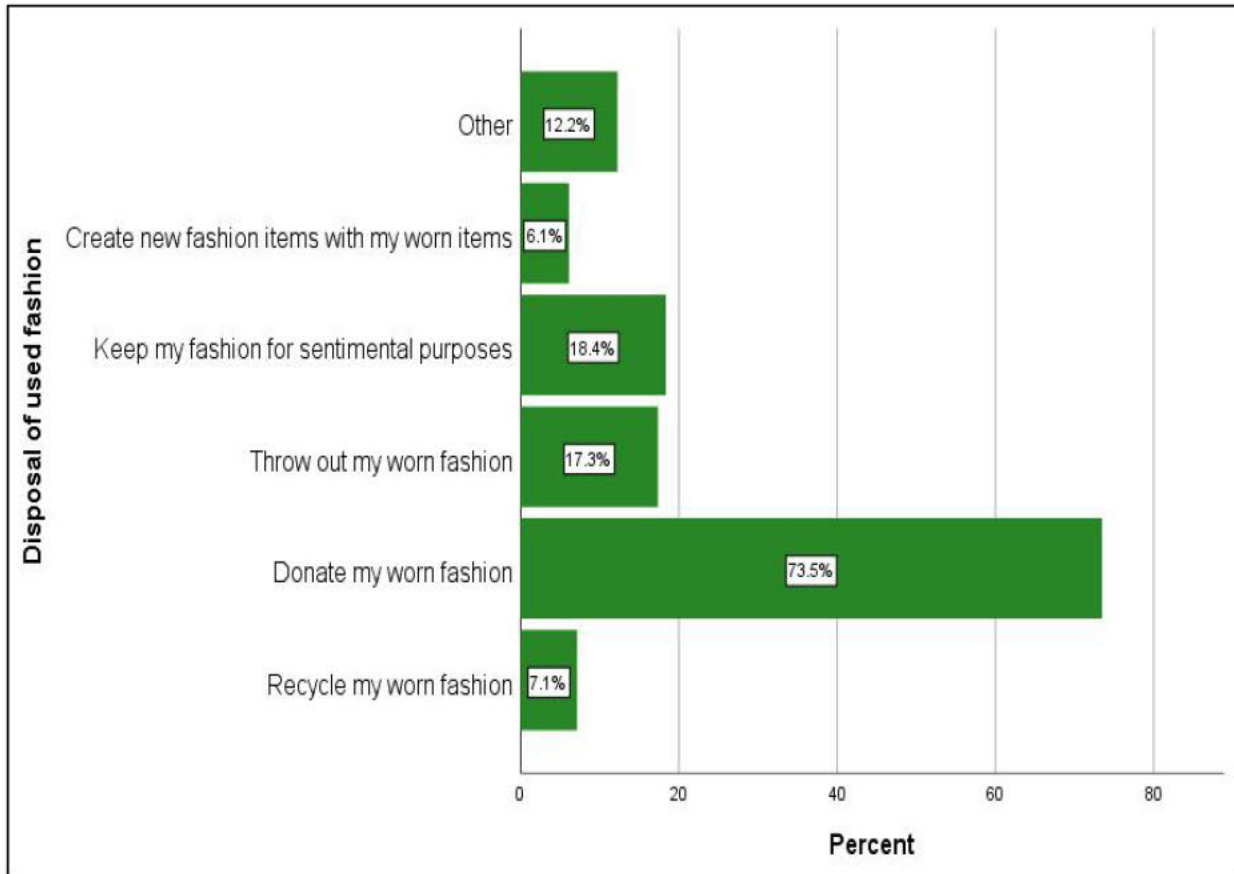


Figure 5.6: Disposal of used fashion (males n=99)

5.7. Research objective two: To determine the extent to which product knowledge would impact the adoption of closed-loop supply chain management

The variable, '*product knowledge*' aims to establish the level of familiarity and expertise that consumers have with a product or service (Wang et al., 2013, p. 870 - 871). According to Wang et al. (2013, p. 871), these can have an impact on perceived risks, purchase attitudes and intention. With reference to the products of CLSCs, the researcher adapted Wang et al.'s (2013, p. 873) framework to include knowledge of the front-end used product collection activities of CLSCs. A series of statements were included in a Likert scale form. To determine consumer support of CLSC products and services, in the absence of product knowledge and expertise, the researcher included statements related to branding and quality, as presented by Abbey et al. (2015, p. 492). In the same way, the researcher set out to determine if consumer opinions would

change if they were more informed about the activities of CLSCs. The findings of the empirical study presented in **Table 5.6** indicate that provision of information can influence consumer perceptions of CLSCM activities and is at the heart of the successes of these systems. Of all the Likert scale questions presented in Section C of the questionnaire, the highest percentage of consumers (89%) who either agreed or strongly agreed with the presented statement were those who felt they would be more likely to return their used fashion products for reuse, remanufacturing or recycling if they were better informed. This was in response to **Q.18**. The mean for this element is 4.23. Further interpretation of this finding could be that consumers are very open towards learning more about CLSCs and their offerings. The variable that had the least amount of consumers who either agreed or strongly agreed with the statement was **Q.13**. For this variable, only 27.7% of consumers agreed or strongly agreed to having had experience with recycling their used fashion. The mean score for this variable is 2.71.

Table 5.6: Product knowledge

PRODUCT KNOWLEDGE		Frequency Distribution						Descriptive Statistics	
		Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)	%Agree/Strongly agree	Mean	Standard Deviation
Q.11. I have purchased or considered purchasing secondhand fashion products.	Freq	39	72	71	80	38	39.4%	3.0	1.24
	%	13%	24%	23.7%	26.7%	12.7%			
Q.12. I have purchased or considered purchasing fashion products made from used fashion.	Freq	24	62	107	85	22	35.6%	3.0	1.05
	%	8%	20.7%	35.7%	28.3%	7.3%			

Q.13. I have experience with recycling my used fashion items.	Freq	48	100	69	57	26	27.7%	2.71	1.196
	%	16%	33.3%	23%	19%	8.7%			
Q.14. I have been sufficiently exposed to advertising/ information about used fashion products and where to return/purchase them.	Freq	63	93	47	69	28	32.3%	2.69	1.289
	%	21%	31%	15.7%	23%	9.3%			
Q.15. I am aware of retailers that provide a service for me to bring my worn fashion for recycling/reuse/ remanufacturing.	Freq	56	77	66	84	17	33.7%	2.76	1.208
	%	18.7%	25.7%	22%	28%	5.7%			
Q.16. Used fashion is/would be more attractive to purchase from a brand I perceive to be of high quality.	Freq	16	32	68	123	61	61.3%	3.6	1.088
	%	5.3%	10.7%	22.7%	41%	20.3%			
Q.17. With more information I would be more likely to increase/consider purchasing used fashion.	Freq	4	11	66	154	65	73%	3.88	0.832
	%	1.3%	3.7%	22%	51.3%	21.7%			
Q.18. With more information I would be more likely to return my worn fashion items for reuse/remanufacturing/ recycling.	Freq	4	3	26	154	113	89%	4.23	0.757
	%	1.3%	1%	8.7%	51.3%	37.7%			

5.7.1. Testing for significant differences

5.7.1.1. Mann-Whitney U test

In order to test for significant differences in the responses to **Q.11-18**, based on gender, the researcher made use of the Mann-Whitney U test. This non-parametric test was selected as it allowed the researcher to test the presence or absence of significant differences between males and females which, in this case, represent two independent samples. There were two hypotheses for this test:

H₀: There is no difference between the product knowledge of males and females.

H₁: There is a difference between the product knowledge of males and females.

The results of the test are presented in **Table 5.7**. They reflect that there is only a significant difference in the product knowledge of males and females for **Q.17**, thus rejecting H₀. For this question alone, the p-value ($p < 0.05$) is below 5% and is highlighted in red in the table below.

Table 5.7: Testing for significant differences between the product knowledge of males and females

	Mann Whitney U	Z	Asymp. Sig. (2- tailed)
Q.11. I have purchased or considered purchasing secondhand fashion products.	8985.500	-1.400	.161
Q.12. I have purchased or considered purchasing fashion products made from used	9890.000	-.088	.930

fashion.			
Q.13. I have experience with recycling my used fashion items.	9561.000	-.567	.570
Q.14. I have been sufficiently exposed to advertising/information about used fashion products and where to return/purchase them.	8770.000	-1.718	.086
Q.15. I am aware of retailers that provide a service for me to bring my worn fashion for recycling/reuse/remanufacturing.	9839.500	-.160	.873
Q.16. Used fashion is/would be more attractive to purchase from a brand I perceive to be of high quality.	8850.000	-1.632	.103
Q.17. With more information I would be more likely to increase/consider purchasing used fashion.	8588.000	-2.098	.036
Q.18. With more information I would be more likely to return my worn fashion items for reuse/remanufacturing/recycling.	8979.500	-1.525	.127
a. Mann Whitney U test			
b. Grouping Variable: Gender			

5.7.1.2. Kruskal-Wallis test: Grouping variable- Highest level of education

The Kruskal-Wallis test was used to test for significant differences in the responses to **Q.11- 18**, based on the varying educational levels. There were two hypotheses for this test:

H₀: There is no difference in product knowledge among the educational levels.

H₁: There is a difference in product knowledge among the educational levels.

The test reflected that differences in the product knowledge do not exist among the educational levels as all p-values presented in **Table 5.8** were above the 5% significance level.

Table 5.8: Testing for significant differences in product knowledge among the educational levels

	Kruskal-Wallis Test	df	Asymp. Sig.
Q.11. I have purchased or considered purchasing secondhand fashion products.	5.763	6	.450
Q.12. I have purchased or considered purchasing fashion products made from used fashion.	7.148	6	.307
Q.13. I have experience with recycling my used fashion items.	7.178	6	.305
Q.14. I have been sufficiently exposed to	2.248	6	.896

advertising/information about used fashion products and where to return/purchase them.			
Q.15. I am aware of retailers that provide a service for me to bring my worn fashion for recycling/reuse/remanufacturing.	2.368	6	.883
Q.16. Used fashion is/would be more attractive to purchase from a brand I perceive to be of high quality.	5.911	6	.433
Q.17. With more information I would be more likely to increase/consider purchasing used fashion.	9.385	6	.153
Q.18. With more information I would be more likely to return my worn fashion items for reuse/remanufacturing/recycling.	11.830	6	.066
a. Kruskal-Wallis Test			
b. Grouping Variable: Highest level of education			

5.8. Research objective three: To assess the extent to which perceived benefits would influence the adoption of closed-loop supply chain management activities

According to Wang et al. (2013, p. 871), there are both social and personal benefits. Included in social benefits are factors such as environmental benefits and societal benefits. Personal benefits may include financial benefits. Abbey et al. (2015, p. 492) explored these in relation to the financial rewards that can be awarded to consumers for participating in the activities of CLSCM. These include selling remanufactured products at more affordable prices in comparison with new products. The provision of store discounts or vouchers for the return of used products is an

approach that has been adopted in the product return initiatives of companies such as H&M (Balch, 2013, para. 5). Based on such literature, the researcher presented the respondents with a list of statements that would probe the types of benefits they could expect to derive from participating in both the front and back-end activities of CLSCs.

The results show that university students generally responded positively towards CLSCM activities. The findings are presented in **Table 5.9**. The variable with the highest percentage of consumers (77.3%) who either agreed or strongly agreed with the statement provided was **Q.19** (*Used fashion is affordable or cheaper than new fashion*). The mean score for this variable is 3.95. It can be concluded from the popularity of this statement that university students would like to be socially and environmentally conscious of their post-consumption activities, more so if provided with convenient and affordable ways of doing so. The benefit with the lowest percentage of consumers (39.3%), who either agreed or strongly agreed with the statement presented, was **Q.20** (*Used fashion is unique and trendy*). This variable had a mean score of 3.39. This confirms why studies, by authors such as Difrancesco, Huchzermeier and Schröder (2017, p. 5-6), have been conducted to determine an optimal return window for fashion products to avoid product obsolescence related to frequent changes in trends and styles.

Table 5.9: Perceived benefits

PERCEIVED BENEFITS		Frequency Distribution						Descriptive Statistics	
		Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)	%Agree/Strongly agree	Mean	Standard Deviation
Q.19. Used fashion is affordable or cheaper	Freq	5	4	59	166	66	77.3%	3.95	0.787

than new fashion.	%	1.7%	1.3%	19.7%	55.3%	22%			
Q.20. Used fashion is unique and trendy.	Freq	9	20	153	81	37	39.3%	3.39	0.895
	%	3%	6.7%	51%	27%	12.3%			
Q.21. Returning/purchasing used fashion is attractive to me because it benefits society and the environment.	Freq	7	17	88	124	64	62.6%	3.74	0.936
	%	2.3%	5.7%	29.3%	41.3%	21.3%			
Q.22. Purchasing used fashion would allow me to enjoy luxury brands at more affordable prices.	Freq	5	18	90	129	58	62.3%	3.72	0.9
	%	1.7%	6%	30%	43%	19.3%			
Q.23. Returning/Purchasing used fashion is attractive to me because it aligns with my values/lifestyle.	Freq	8	28	142	92	30	40.7%	3.36	0.883
	%	2.7%	9.3%	47.3%	30.7%	10%			
Q.24. The option to return clothes to retailers for reuse/remanufacturing/recycling would make it easier for me to become a more responsible consumer.	Freq	4	11	57	137	91	76%	4.0	0.873
	%	1.3%	3.7%	19%	45.7%	30.3%			

5.8.1. Testing for significant differences

5.8.1.1. Mann-Whitney U test

The researcher used the Mann-Whitney U test to test for significant differences in the responses to **Q.19-24**. This non-parametric test was used to test for the presence or absence of significant differences between two independent samples: males and females. The two hypotheses for this test were as follows:

H_0 : There is no difference between the perceived benefits of males and females.

H_1 : There is a difference between the perceived benefits of males and females.

The findings are presented in **Table 5.10**. The results reflect that there were only two questions (**Q.19** and **Q.21**) for which H_0 was true. For these questions the p-values ($p > 0.05$) were above 5%. For the remaining questions (**Q.20**, **Q.22**, **Q.23** and **Q.24**), the p-values ($p < 0.05$) were below 5% thus rejecting H_0 and showing that there are significant differences in the perceived benefits of males and females. These values were highlighted in red in the table below.

Table 5.10: Testing for significant differences between the perceived benefits of males and females

	Mann-Whitney U	Z	Asymp. Sig. (2- tailed)
Q.19. Used fashion is affordable or cheaper than new fashion.	9575.000	-.588	.556
Q.20. Used fashion is unique and trendy.	7307.000	-4.068	.000
Q.21. Returning/purchasing used fashion is attractive to me because it benefits society and	9457.000	-.737	.461

the environment.			
Q.22. Purchasing used fashion would allow me to enjoy luxury brands at more affordable prices.	8550.500	-2.104	.035
Q.23. Returning/purchasing used fashion is attractive to me because it aligns with my values/lifestyle.	8167.500	-2.715	.007
Q.24. The option to return clothes to retailers for reuse/remanufacturing/recycling would make it easier for me to become a more responsible consumer.	7801.000	-3.260	.001
a. Mann-Whitney U test			
b. Grouping Variable: Gender			

5.8.1.2. Kruskal-Wallis test: Grouping variable- Highest level of education

The researcher applied the Kruskal-Wallis test in order to test the presence or absence of significant differences in the perceived benefits among the various educational levels. The two hypotheses were as follows:

H₀: There is no difference in perceived benefits among the educational levels.

H₁: There is a difference in perceived benefits among the educational levels.

The findings were organised into **Table 5.11**. The test reflected that differences in the perceived benefits among the educational levels are only present in **Q.24**, which has a p-value ($p < 0.05$)

below the 5% significance level. For all other questions in this section, there were no significant differences in the perceived benefits among the educational levels.

Table 5.11: Testing for significant differences in perceived benefits among the educational levels

	Kruskal-Wallis H	df	Asymp. Sig.
Q.19. Used fashion is affordable or cheaper than new fashion.	7.499	6	.277
Q.20. Used fashion is unique and trendy.	8.325	6	.215
Q.21. Returning/purchasing used fashion is attractive to me because it benefits society and the environment.	9.917	6	.128
Q.22. Purchasing used fashion would allow me to enjoy luxury brands at more affordable prices.	12.177	6	.058
Q.23. Returning/purchasing used fashion is attractive to me because it aligns with my values/lifestyle.	5.433	6	.490
Q.24. The option to return clothes to retailers for reuse/remanufacturing/recycling would make it easier for me to become a more responsible consumer.	17.124	6	.009
a. Kruskal-Wallis Test			
b. Grouping Variable: Highest level of education			

5.9. Research objective four: To analyse how perceived risks would affect the adoption of closed-loop supply chain management

There are a number of risks that can impact a consumer’s perceptions of the products and services of CLSCs, thereby affecting the adoption rate by retailers and their supply chain partners. According to Wang et al. (2013, p. 870), these risks may be financial, social or performative. Using literature such as Abbey et al. (2015, p. 492), the researcher established a list of potential risks that university students may associate with the activities of CLSCs.

Based on the findings of the empirical study, presented in **Table 5.12**, university students identified fewer negative associations or risks of participating in the activities of CLSCs. However, **Q.26** had the highest percentage of university students (40.4%) who agreed or strongly agreed, sharing the same sentiment that ‘*the quality of used fashion is always lower than that of new*’. The mean for this question is 3.04. The lowest percentage of consumers (4.6%) who either agreed or strongly agreed with the statement provided were those responding to **Q.29**. (‘*Wearing used fashion would compromise my social status*’). This question scored a mean of 1.95.

Table 5.12: Perceived risks

PERCEIVED RISKS		Frequency Distribution					Descriptive Statistics		
		Strongly disagree(1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)	%Agree/Strongly agree	Mean	Standard Deviation
Q.25. Used fashion is disgusting and unclean.	Freq	79	141	58	16	6	7.3%	2.1	0.918
	%	26.3	47%	19.3	5.3%	2%			

		%		%					
Q.26. The quality of used fashion is always lower than that of new.	Freq	32	58	89	107	14	40.4%	3.04	1.08
	%	10.7%	19.3%	29.7%	35.7%	4.7%			
Q.27. Used fashion is not trendy and is generally outdated.	Freq	55	130	78	28	9	12.3%	2.35	0.982
	%	18.3%	43.3%	26%	9.3%	3%			
Q.28. I would feel uncomfortable knowing that someone I do not know is wearing my used fashion items.	Freq	70	125	61	33	11	14.7%	2.3	1.058
	%	23.3%	41.7%	20.3%	11%	3.7%			
Q.29. Wearing used fashion would compromise my social status.	Freq	94	141	51	13	1	4.6%	1.95	0.829
	%	31.3%	47%	17%	4.3%	0.3%			
Q.30. Wearing used fashion from an unknown source is not acceptable in my culture/religion.	Freq	112	116	54	16	2	6%	1.93	0.908
	%	37.3%	38.7%	18%	5.3%	0.7%			

5.9.1. Testing significant differences

5.9.1.1. Mann-Whitney U test

The researcher aimed to test for significant differences between the perceived risks of males and females using the Mann-Whitney U test. These were presented in **Q.25- 30**. There were two hypotheses for this test:

H₀: There is no difference between the perceived risks of males and females.

H₁: There is a difference between the perceived risks of males and females.

The test reflected that there are only significant differences in the perceived risks of males and females for **Q.25**, **Q.27**, and **Q.29**, thus rejecting H₀. For these questions, the p-values (p<0.05) are below 5% and are highlighted in red in **Table 5.13** below.

Table 5.13: Testing for significant differences between the perceived risks of males and females

	Mann Whitney U	Z	Asymp. Sig. (2- tailed)
Q.25. Used fashion is disgusting and unclean.	8528.000	-2.156	.031
Q.26. The quality of used fashion is always lower than that of new.	9397.500	-.815	.415

Q.27. Used fashion is not trendy and is generally outdated.	8413.500	-2.299	.021
Q.28. I would feel uncomfortable knowing that someone I do not know is wearing my used fashion items.	9202.500	-1.111	.266
Q.29. Wearing used fashion would compromise my social status.	7828.000	-3.237	.001
Q.30. Wearing used fashion from an unknown source is not acceptable in my culture/religion.	9229.500	-1.084	.278
a. Mann-Whitney U test			
b. Grouping Variable: Gender			

5.9.1.2. Kruskal-Wallis test: Grouping variable- Highest level of education

The Kruskal-Wallis test was used to test for significant differences in the responses to **Q.25-30**, based on educational levels. There were two hypotheses for this test:

H₀: There is no difference in perceived risks among the educational levels.

H₁: There is a difference in perceived risks among the educational levels.

The test reflected that significant differences in perceived risks do not exist among the various educational levels, as all p-values ($p > 0.05$) were above the 5% significance level. These results were organised into **Table 5.14**.

Table 5.14: Testing for significant differences in perceived risks among the educational levels

	Kruskal-Wallis H	df	Asymp. Sig.
Q.25. Used fashion is disgusting and unclean.	6.476	6	.372
Q.26. The quality of used fashion is always lower than that of new.	6.344	6	.386
Q.27. Used fashion is not trendy and is generally outdated.	9.780	6	.134
Q.28. I would feel uncomfortable knowing that someone I do not know is wearing my used fashion items.	4.480	6	.612
Q.29. Wearing used fashion would compromise my social status.	11.289	6	.080
Q.30. Wearing used fashion from an unknown source is not acceptable in my culture/religion.	6.813	6	.338
a. Kruskal-Wallis Test			
b. Grouping Variable: Highest level of education			

5.10. Research objective five: To determine how consumer frame of reference would impact closed-loop supply chain management adoption

The components of this variable are derived from the TPB. The theory holds that a consumer's intentions and actions are directly affected by their attitudes, subjective norms and perceived behavioural norms (Wang et al., 2013, p. 868). The researcher explored consumer attitudes towards the products and services of CLSCs using **Q.31-33**. These questions proposed potential benefits and risks associated with the activities of CLSCM and aimed to establish student attitudes towards these. Using **Q.34** and **Q.35** the researcher explored the perceived behavioural norms of the university students. These questions aimed to establish the extent to which students have control over how they purchase and dispose of their fashion products. In **Q.36-40** the researcher's objective was to determine the subjective norms that the respondents were more likely to identify with. These questions explored the manner in which respondents believed those close to them, such as a family and friends, preferred they should behave, in relation to the purchasing of the products of CLSCs or their participation in the product return initiatives.

5.10.1. Attitudes and perceived behavioural norms

The results of the Likert scale are presented in **Table 5.15**. For the variables, attitudes and perceived behavioural norms, it was found that the highest percentage of consumers (72.3%) who either agreed or strongly agreed with the presented statement were responding to **Q.35**. (*In my household I have full control of how I dispose of my worn fashion items*). This perceived behavioural norm statement shows that it is within a majority of the students' control to decide how they would like to dispose of their fashion items. This statement has a mean score of 3.85. The lowest percentage of consumers (48.3%) chose that they either agreed or strongly agreed with the statement in **Q.31** which states *When purchasing fashion I am very concerned with how the brand treats society, its employees and the environment*. The mean for this statement is 3.34.

Table 5.15: Attitudes and behavioural norms

ATTITUDES AND BEHAVIOURAL NORMS		Frequency Distribution						Descriptive Statistics	
		Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)	%Agree/Strongly agree	Mean	Standard Deviation
Q.31. When purchasing fashion I am very concerned with how the brand treats society, its employees and the environment.	Freq	19	49	87	102	43	48.3	3.34	1.105
	%	6.3%	16.3%	29%	34%	14.3%	%		
Q.32. I believe I have an ethical responsibility, as a consumer, to dispose of my worn fashion products in an ethical manner.	Freq	6	17	81	142	54	65.3	3.74	0.889
	%	2%	5.7%	27%	47.3%	18%	%		
Q.33. Consuming ethically is something I would personally like to do, regardless of the opinions of those close to me.	Freq	2	12	76	146	64	70%	3.86	0.818
	%	0.7%	4%	25.3%	48.7%	21.3%	%		
Q.34. In my household I have full control of what fashion products I choose to purchase and when.	Freq	12	27	55	125	81	68.7	3.79	1.064
	%	4%	9%	18.3%	41.7%	27%	%		
Q.35. In my household I have full control of how I dispose of my worn fashion items.	Freq	13	15	55	139	78	72.3	3.85	1.007
	%	4.3%	5%	18.3%	46.3%	26%	%		

5.10.1.1. Mann-Whitney U test

In order to test significant differences in the responses to **Q.31-35**, based on two independent samples, the researcher made use of the Mann-Whitney U test. This non-parametric test enabled the researcher to test the presence or absence of significant differences in the attitudes and behavioural norms of males and females. The two hypotheses for this test were as follows:

H₀: There is no difference between the attitudes and behavioural norms of males and females.

H₁: There is a difference between the attitudes and behavioural norms of males and females.

The results from the test were organised into **Table 5.16** and reflect that there are no significant differences in the attitudes and behavioural norms of males and females for all questions in this section, thus rejecting H₁. The p-values ($p > 0.05$) of these questions were all above 5%.

Table 5.16: Testing for significant differences between the attitudes and behavioural norms of males and females

	Mann Whitney U	Z	Asymp. Sig. (2- tailed)
Q.31. When purchasing fashion I am very concerned with how the brand treats society, its employees and the environment.	9597.000	-.518	.605
Q.32. I believe I have an ethical responsibility, as a consumer, to dispose of my worn fashion	9305.000	-.979	.328

products in an ethical manner.			
Q.33. Consuming ethically is something I would personally like to do regardless of the opinions of those close to me.	9759.500	-.290	.772
Q.34. In my household I have full control of what fashion products I choose to purchase and when.	9196.000	-1.124	.261
Q.35. In my household I have full control of how I dispose of my worn fashion items.	9038.000	-1.378	.168
a. Mann Whitney U test			
b. Grouping Variable: Gender			

5.10.1.2. Kruskal-Wallis test: Grouping variable- Highest level of education

The researcher used the Kruskal-Wallis test to test for significant differences in the attitudes and behavioural norms of the varying educational levels. There were two hypotheses for this test:

H₀: There is no difference in the attitudes and behavioural norms of the educational levels.

H₁: There is a difference in the attitudes and behavioural norms of the educational levels.

The test reflected that differences in the attitudes and behavioural norms do not exist among the educational levels, as all p-values ($p > 0.05$) were above the 5% significance level. These results were organised into **Table 5.17**.

Table 5.17: Testing for significant differences in the attitudes and behavioural norms of the educational levels

	Kruskal-Wallis H	df	Asymp. Sig.
Q.31. When purchasing fashion I am very concerned with how the brand treats society, its employees and the environment.	4.376	6	.626
Q.32. I believe I have an ethical responsibility, as a consumer, to dispose of my worn fashion products in an ethical manner.	5.697	6	.458
Q.33. Consuming ethically is something I would personally like to do regardless of the opinions of those close to me.	3.700	6	.717
Q.34. In my household I have full control of what fashion products I choose to purchase and when.	2.702	6	.845
Q.35. In my household I have full control of how I dispose of my worn fashion items.	3.611	6	.729
a. Kruskal-Wallis Test			
b. Grouping Variable: Highest level of education			

5.10.2. Subjective norms

The subjective norms were probed in Section G using a series of Likert scale statements. The results are presented in **Table 5.18**. The highest percentage of university students (67.7%) either agreed or strongly agreed with the statement in **Q.39**. (*'If I were seen returning my worn fashion for reuse/ remanufacturing/ recycling many of my peers/family members would approve'*). This shows that there is a general consensus that the respondents could expect to receive support from their peers or family members for participating in the front-end activities of CLSCM. The mean score for this Likert scale statement is 3.79. The lowest percentage of students (13.7%) who either agreed or strongly agreed with the provided statement were responding to **Q.36**. (*'I am concerned with how my peers and family members would view me if I wore used fashion'*). The feedback for this Likert scale statement reflects that the respondents are generally independent in their decision-making when it comes to purchasing and wearing fashion, as a lower percentage showed concern for the opinions of their peers and family members. The mean score for this statement is 2.2.

Table 5.18: Subjective norms

SUBJECTIVE NORMS		Frequency Distribution					Descriptive Statistics		
		Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)	%Agree/Strongly agree	Mean	Standard Deviation
Q.36. I am concerned with how my peers and family members would view me if I wore used fashion.	Freq	81	123	55	38	3	13.7%	2.2	1.007
	%	27%	41%	18.3%	12.7%	1%			

Q.37. Purchasing/returning used fashion would make me responsible and ethical in the eyes of my peers/family members.	Freq	7	39	125	105	24	43%	3.33	0.886
	%	2.3%	13%	41.7%	35%	8%			
Q.38. If I were seen purchasing used fashion many of my peers/family members would approve.	Freq	7	27	136	102	28	43.3%	3.39	0.864
	%	2.3%	9%	45.3%	34%	9.3%			
Q.39. If I were seen returning my worn fashion for reuse/remanufacturing/recycling many of my peers/family members would approve.	Freq	5	11	81	147	56	67.7%	3.79	0.844
	%	1.7%	3.7%	27%	49%	18.7%			
Q.40. I would return/purchase used fashion if my peers/family members did the same.	Freq	9	46	114	94	37	43.6%	3.35	0.981
	%	3%	15.3%	38%	31.3%	12.3%			

5.10.2.1. Mann-Whitney U test

The Mann-Whitney U test was used to test for significant differences in the male and female responses to **Q.36- 40**. The two hypotheses for this test were:

H₀: There is no difference between the subjective norms of males and females.

H₁: There is a difference between the subjective norms of males and females.

The test reflected that there is only a significant difference in the subjective norms of males and females for **Q.39**, thus rejecting H₀. For this question alone, the p-value ($p < 0.05$) is below 5% and is highlighted in red in **Table 5.19**.

Table 5.19: Testing for significant differences between the subjective norms of males and females

	Mann Whitney U	Z	Asymp. Sig. (2- tailed)
Q.36. I am concerned with how my peers and family members would view me if I wore used fashion.	9103.000	-1.261	.207
Q.37. Purchasing/returning used fashion would make me responsible and ethical in the eyes of my peers/family members.	9418.000	-.801	.423
Q.38. If I were seen purchasing used fashion many of my peers/family members would approve.	8913.000	-1.577	.115
Q.39. If I were seen returning my worn fashion for reuse/remanufacturing/recycling many of my peers/family members would approve.	8523.000	-2.182	.029
Q.40. I would return/purchase used fashion if my peers/family members did the same.	9576.000	-.555	.579
a. Mann-Whitney U test			
b. Grouping Variable: Gender			

5.10.2.2. Kruskal-Wallis test: Grouping variable- Highest level of education

The Kruskal-Wallis test was used to test for significant differences in the responses to **Q.36- Q40** based on the educational levels. There were two hypotheses for this test:

H₀: There is no difference in subjective norms among the educational levels.

H₁: There is a difference in subjective norms among the educational levels.

The test reflected that differences in the subjective norms do not exist among the educational levels as all p-values ($p > 0.05$) were above the 5% significance level. These values were presented in **Table 5.20**.

Table 5.20: Testing for significant differences in subjective norms among the educational levels

	Kruskal-Wallis H	df	Asymp. Sig.
Q.36. I am concerned with how my peers and family members would view me if I wore used fashion.	8.211	6	.223
Q.37. Purchasing/returning used fashion would make me responsible and ethical in the eyes of my peers/family members.	6.308	6	.390
Q.38. If I were seen purchasing used fashion many of my peers/family members would	4.930	6	.553

approve.			
Q.39. If I were seen returning my worn fashion for reuse/remanufacturing/recycling many of my peers/family members would approve.	10.755	6	0.96
Q.40. I would return/purchase used fashion if my peers/family members did the same.	4.692	6	.584
a. Kruskal-Wallis Test			
b. Grouping Variable: Highest level of education			

5.11. Research objective six: To evaluate support for the activities of closed-loop supply chain management systems from relevant stakeholders

To conclude the questionnaire, the researcher aimed to determine student support for all the activities of CLSCM, in light of their responses to the previous sections. This included the product collection initiatives, the recovery methods and the purchasing of the end-products of these systems.

5.11.1. Types of used products university students are more likely to purchase

The types of used product categories that university students would more likely purchase, were investigated. Of the females who responded to the questionnaire, 46.3% selected that they were more likely to purchase ‘*clothes*’. This is compared to 28.3% of males who had the same response. The second category of products that was most selected by the female respondents was that of ‘*bags*’. 31.3% of the female respondents selected they would purchase bags, compared to

14.1% of males. Only 4% of females and 17.2% of males responded that they would purchase 'footwear'. These results are illustrated by **Figure 5.7**.

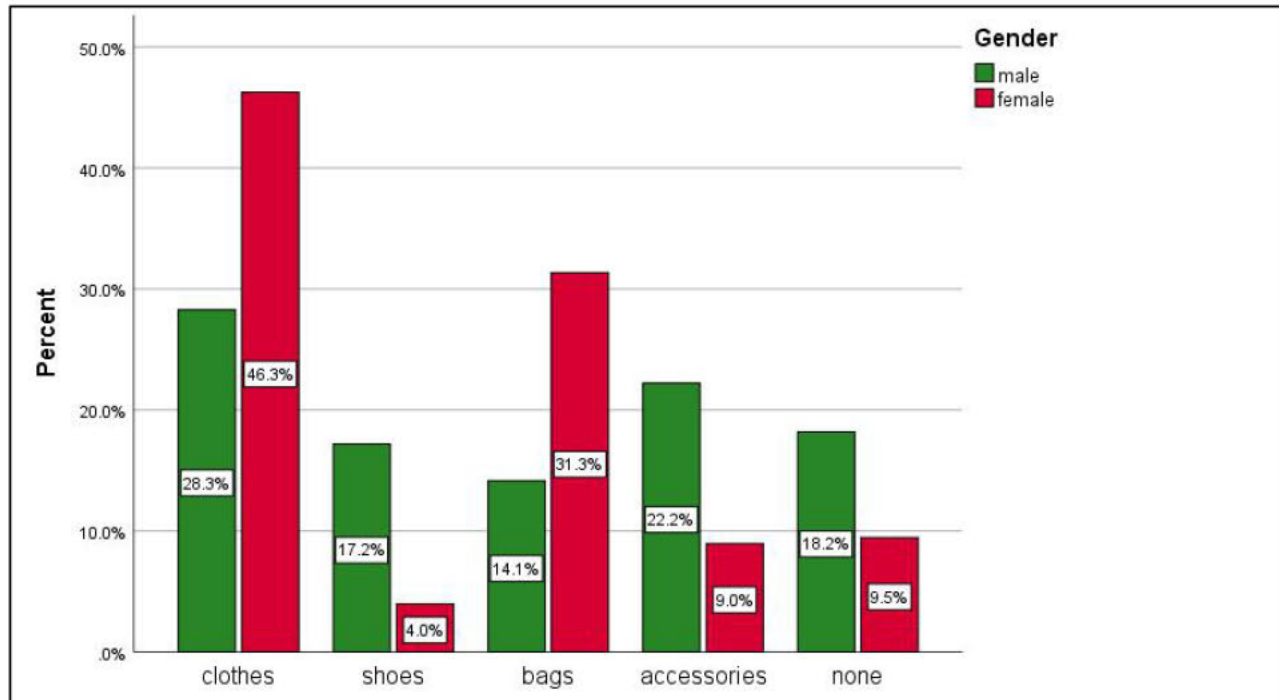


Figure 5.7: Types of used products university students are more likely to purchase

5.11.2. Types of used products university students are less likely to purchase

In addition to determining which used recovered product categories students would be more likely to purchase, it was equally necessary to establish which ones they would be less likely to purchase. This information would be useful for SMME retailers to understand what types of product categories would be more likely to succeed or fail among consumers in an African developing country. As the differences in responses can be significant between male and female consumers, the researcher further split the findings of this question according to gender. **Figure 5.8** illustrates the findings of this variable. It was interesting to note that both male (44.4%) and female (54.7%) respondents selected that they would be less likely to purchase remanufactured or secondhand footwear. The second category of used products that was more popularly selected

by male respondents (24.2%), as least desirable, was that of clothing. In comparison, female respondents (19.9%) found accessories to be the second least desirable category of used fashion. Only 6.1% of male respondents and 6% of female respondents found bags to be a less desirable category of fashion to purchase.

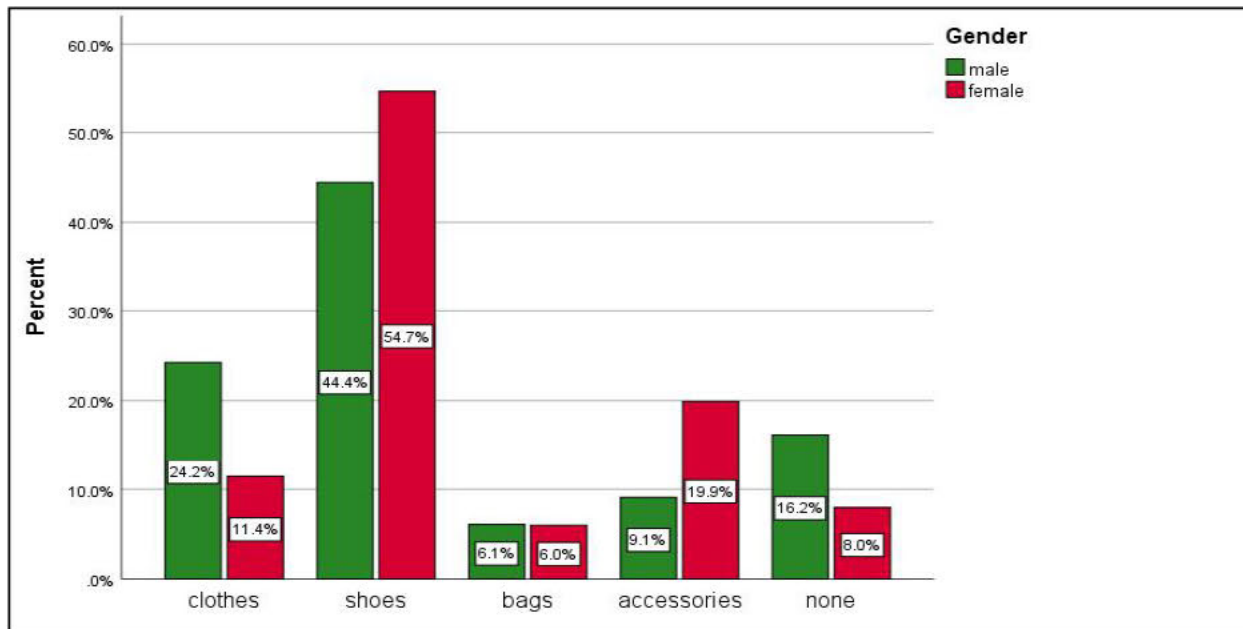


Figure 5.8: Types of used products university students are less likely to purchase

5.11.3. Motivating factors for product return activities

The students were given a multiple response statement: *‘I am more likely to return my worn fashion for reuse/remufacturing/recycling if:’*. They were given six responses to select from. The responses of this question were divided according to gender and illustrated in **Figures 5.9 and 5.10**.

A significant number of female respondents (62.7%) selected that they would be more likely to return their used fashion for recovery if they were offered a discount or cash payment. Female respondents (54.7%) further acknowledged that they would be more likely to give their used

fashion to a charity or hospice. Some female consumers (36.3%) responded that they would be more likely to participate in the front-end activities of CLSCs if they were aware of where the proceeds would be going. Convenience of collection sites was also specified by 35.8% of female respondents. Only 1% of female respondents selected that they would not return their used fashion for recovery. These results are depicted in **Figure 5.9**.

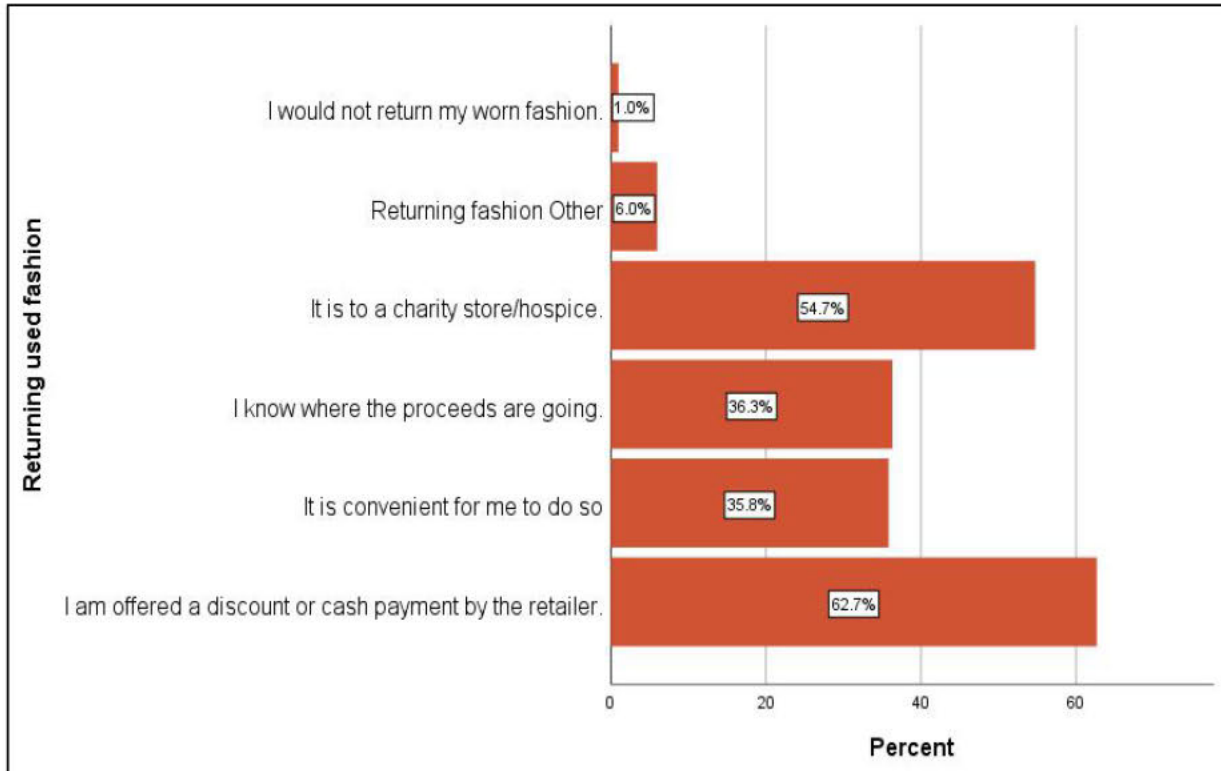


Figure 5.9: Returning used fashion for reuse, remanufacturing or recycling (females n=201)

There were some significant similarities and differences between the male and female responses to this question. Similar to the female respondents, most of the male respondents (58.6%) selected that they would be motivated to participate in the activities of CLSCs if they were offered a financial reward. It is also important to consider that both the female and male respondents (51.5%) insisted that giving their used fashion to a charity or hospice would be more desirable. This is consistent, as in **Q.10.**, for which most male and female respondents preferred

to donate their used fashion. Convenience of collection sites was also regarded as an important factor by 42.4% of male respondents. Similar to the female respondents, only 1% of the male respondents implied that they would not return their worn fashion. These responses were organised in **Figure 5.10**.

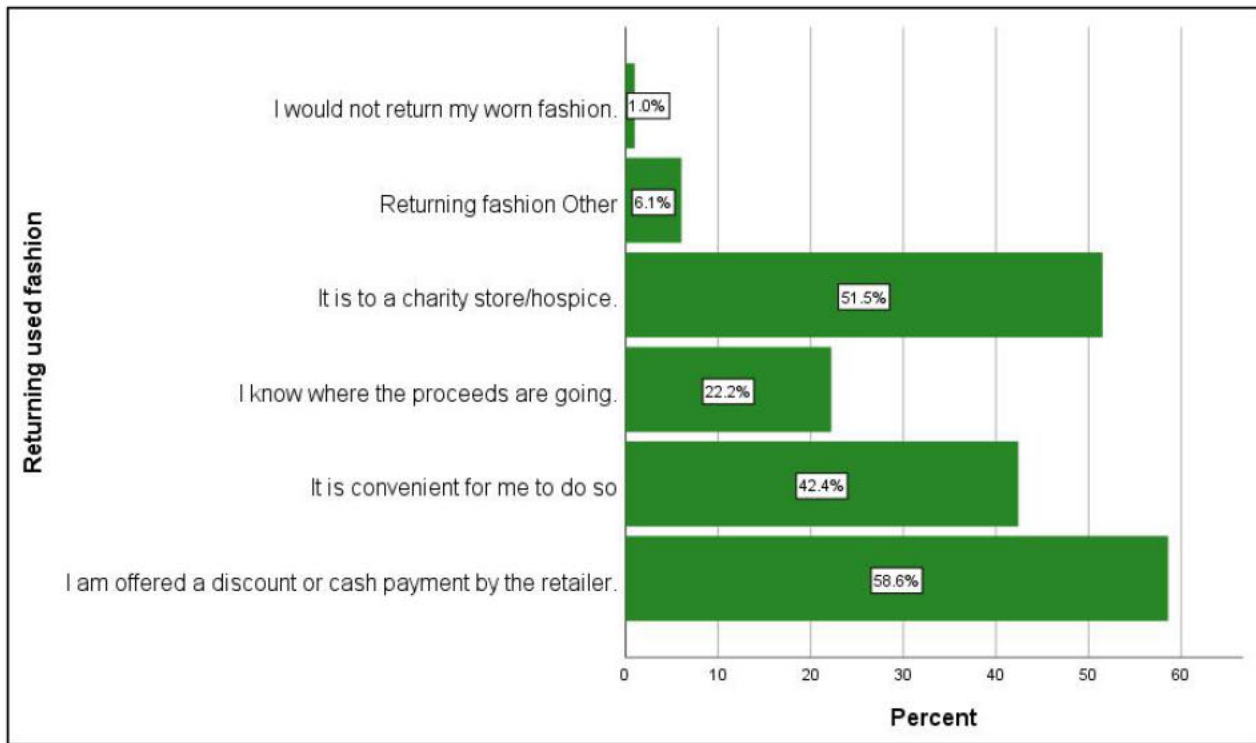


Figure 5.10: Returning used fashion for reuse, remanufacturing or recycling (males n=99)

5.11.4. Purchasing recovered fashion

As this study focuses on recycling facilitated by secondary industries, *'recovered used fashion'* was discussed with reference to products for reuse (secondhand) and remanufactured products. Students were presented with a multiple response statement (*'I am more likely to purchase secondhand/remanufactured fashion items if: '*). They were then provided with six possible responses. The responses for this question were split according to gender and presented in **Figure 5.11** and **Figure 5.12**.

The largest number of female respondents (61.7%) indicated that they would purchase used fashion if it was ‘sold in a convenient and clean environment’. The second largest number of female respondents (43.3%) selected that they would only purchase used fashion if it was remanufactured. Some female respondents (35.8%) indicated they would purchase if the return policies did not differ to those of new fashion items. A significant number of female respondents (24.9%) clarified that they would purchase used fashion if they had information about where the proceeds of CLSC initiatives were going. Female students (19.9%), in the same way, predicted that they would prefer to purchase secondhand or remanufactured fashion products if they knew the previous owner. Only 3.5% of female students indicated that they would not purchase used fashion. These findings are presented in **Figure 5.11**.

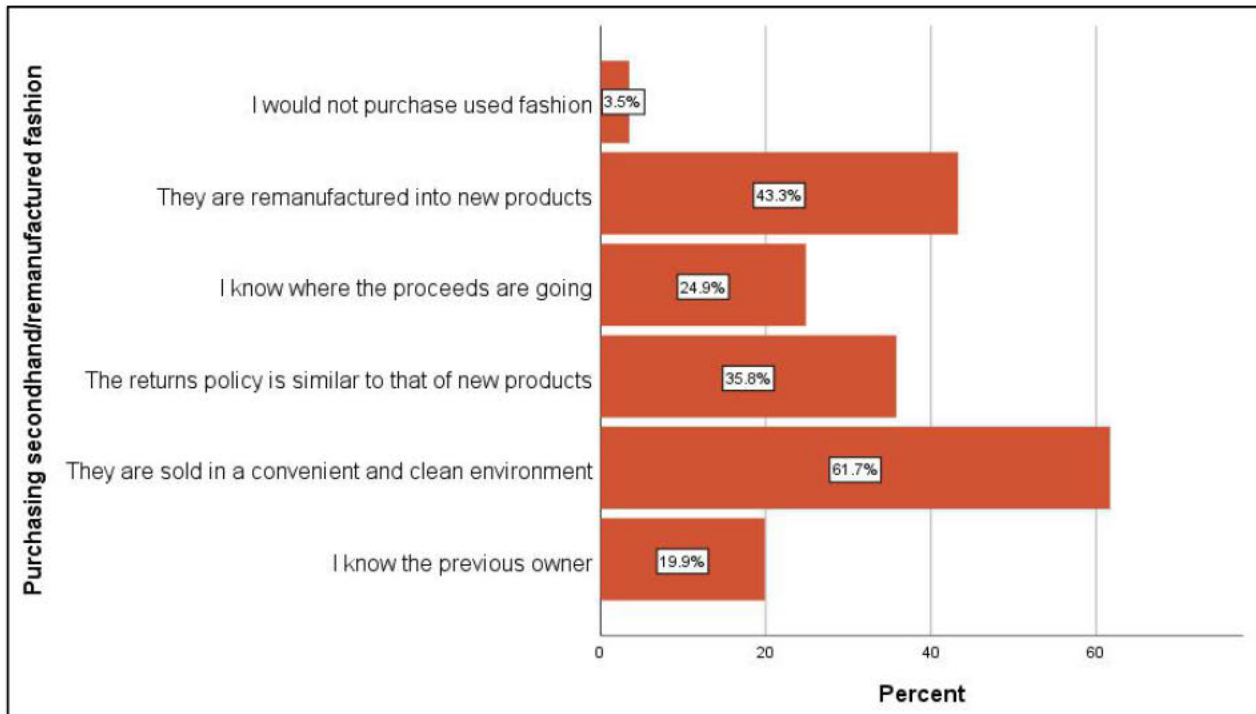


Figure 5.11: Purchasing recovered fashion (females n=201)

Corresponding to **Q.43** and presented in the previous section, the responses to **Q.44** in this section, were fairly similar for both male and female respondents. Male respondents (55.6%), likewise, considered a ‘convenient and clean environment’ as a selling point for purchasing

secondhand or remanufactured products. This category was followed by both the returns policy (35.4%) and ‘remanufactured into new products’ (35.4%). Of the male respondents, 20.2% stated that they would prefer to purchase used fashion if they knew the previous owner and 14.1% stated they would only purchase if the retailer or seller could account for where the proceeds were going. A larger number of male respondents (9.1%), compared to female respondents (3.5%) preferred not to purchase used fashion. **Figure 5.12.** presents these results.

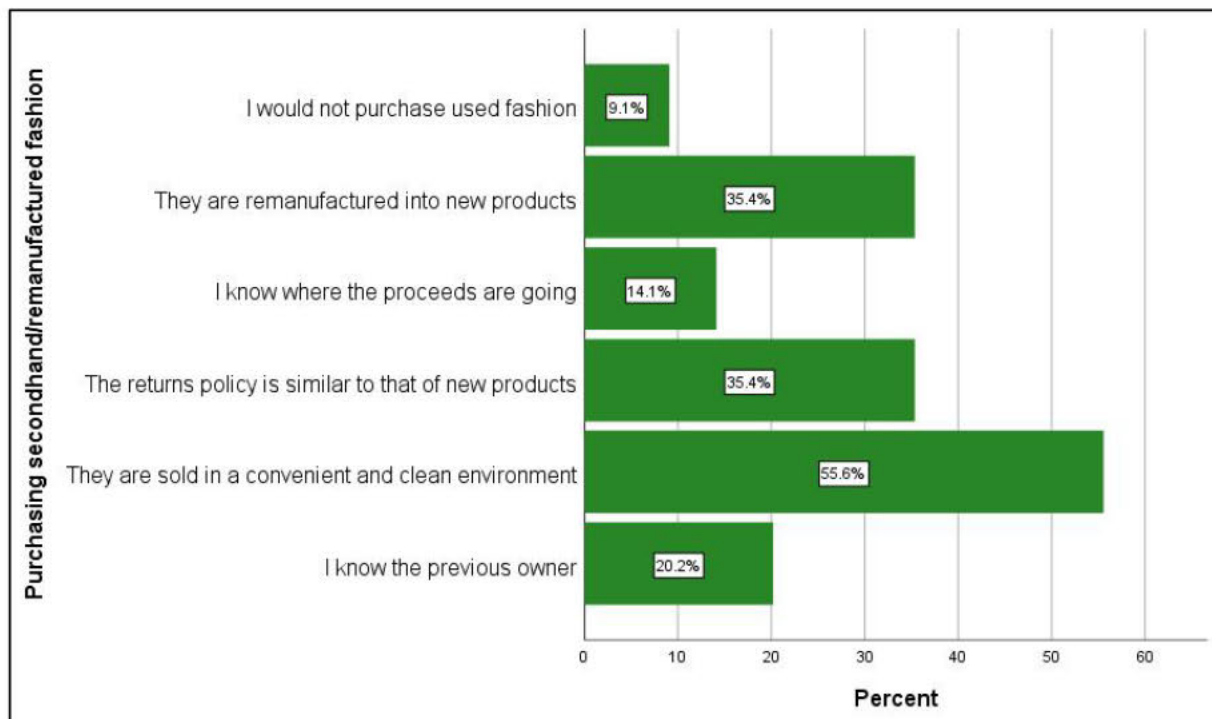


Figure 5.12: Purchasing recovered fashion (males n=99)

5.11.5. Sources from which university students are more likely to purchase used fashion

The study explores the potential coordination of CLSCM activities by SMME fashion retailers. In doing so, it was necessary to establish what types of activities would more successfully coordinated to serve a developing market in Africa. University students were selected as the focal point of the quantitative study due to their strategic positioning as current and future

consumers, who are more likely to be educated, aware and interested in sustainable practices such as those of CLSCM. The researcher asked the students to indicate the source from which they would be more likely to purchase used fashion from. Based on the responses, SMME retailers and their partners could determine what type of approach would be most suitable for the redistribution of recovered products. Students were asked to select one out of seven possible responses. These responses were divided according to gender.

Both male (47.5%) and females (55.7%) selected that they would prefer to purchase secondhand or remanufactured products from a well-known retailer. More male respondents (15.2%), compared to female respondents (4.4%) suggested they would prefer to purchase from a luxury brand. While results in section **5.10.3** showed that both male (51.5%) and female (54.7%) respondents clarified they would prefer to return their used fashion to a charity store or hospice, it is interesting to note that only 12.1% of males and 6.5% of females, who responded to **Q.45**, would purchase used fashion from this source. Only 7.1% of males and 5.5% of females stated they would not purchase used fashion. These results are illustrated in **Figure 5.13**.

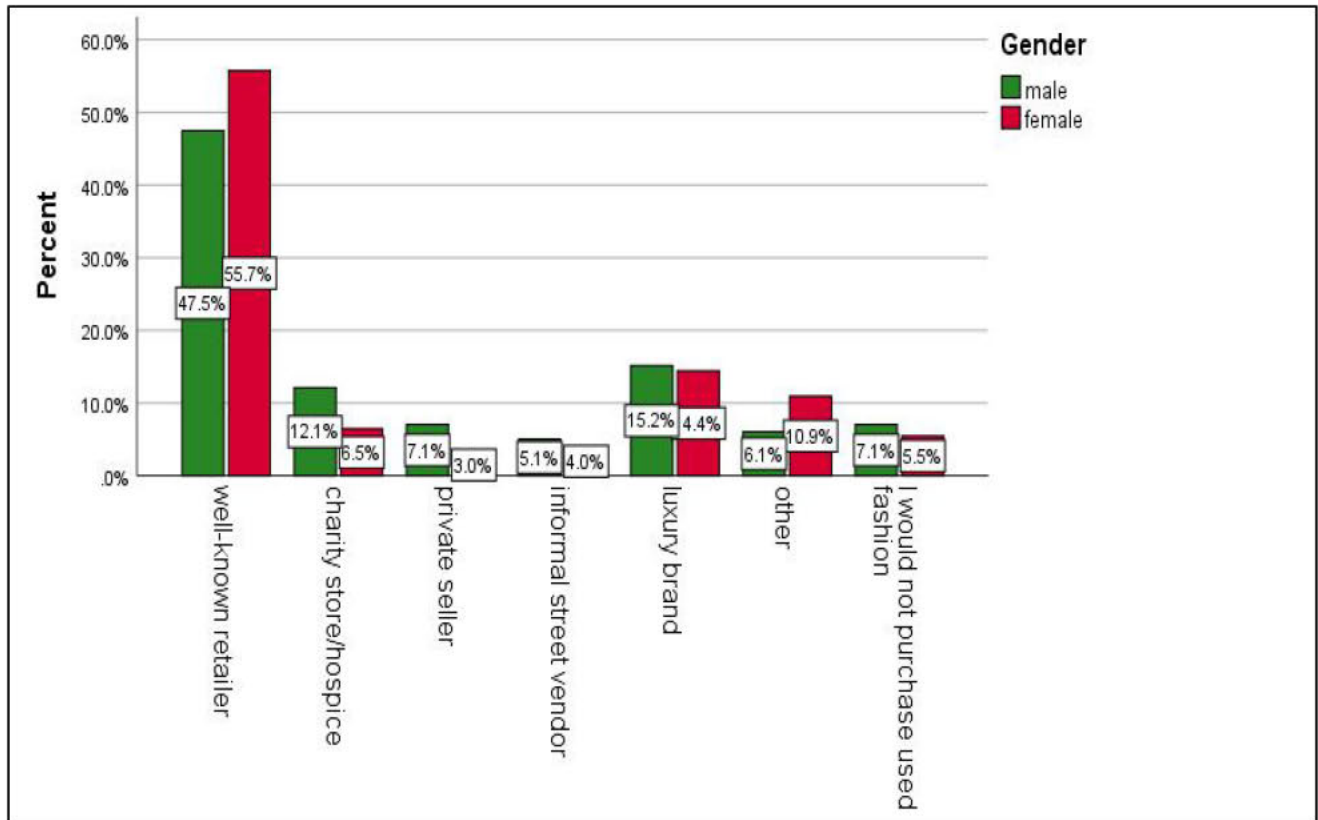


Figure 5.13: Sources from which university students are more likely to purchase used fashion

5.11.6. Student support for closed-loop supply chain activities

To conclude the questionnaire, university students were asked to select one type of CLSC recovery and redistribution method they would be more likely to support. The first option was ‘secondhand sold by retailer’. The majority of female respondents (33.3%) and male respondents (25.3%) chose this option. The second option most selected by both male (24.2%) and female (31.3%) respondents was ‘remanufactured fashion sold by retailer’. The male respondents (20.2%) chose ‘recycling for use in different industries’ as the third most desirable option, while female respondents (17.9%) chose ‘secondhand sold by local secondhand store or charity store’ as the third most popular option. A significant number of both male (5.5%) and female (12.1%)

respondents indicated that they would not support any of the four types of CLSC recovery and redistribution methods presented. These findings are provided in **Figure 5.14**.

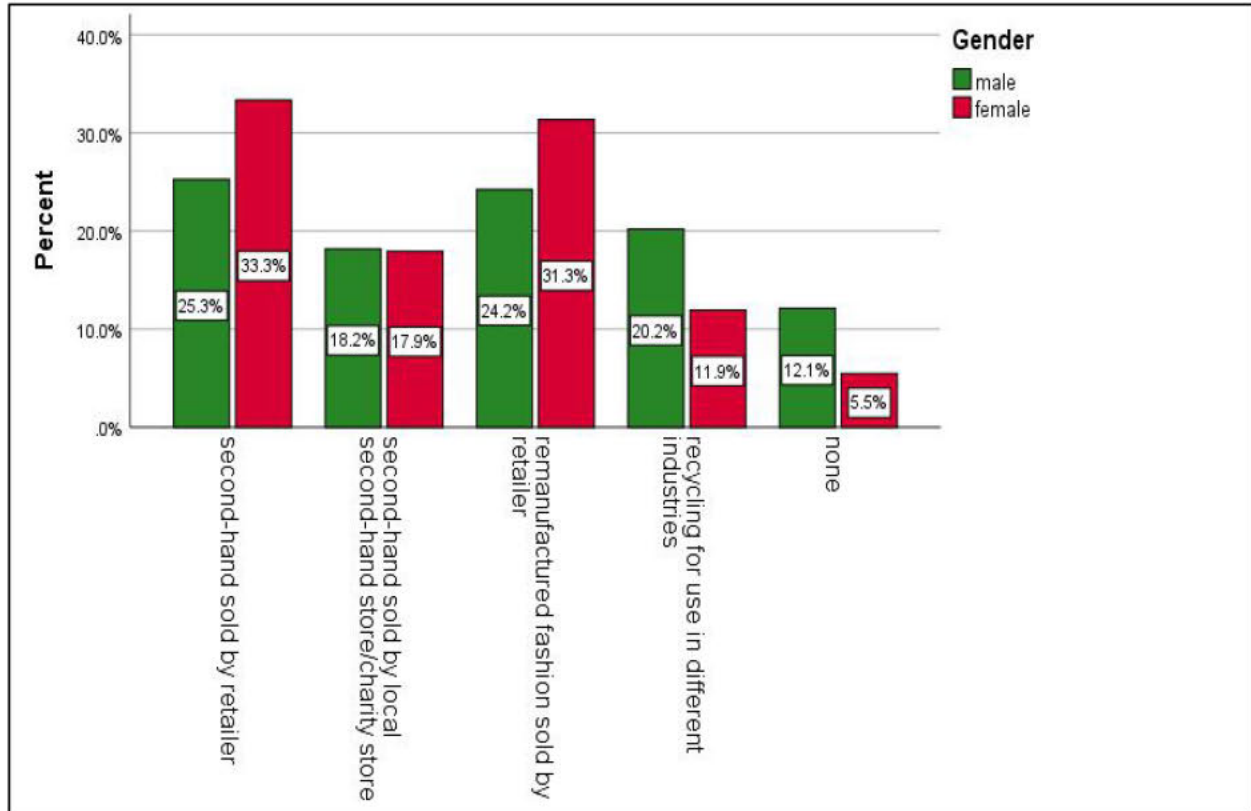


Figure 5.14: Student support for closed-loop supply chain activities

5.12. Conclusion

The data collected from university students using the questionnaires were organised and analysed in this chapter. Various statistical tests were employed in the data analysis process. In order to determine the normality of the variables in the study, the researcher applied the Kolmogorov-Smirnov test. This allowed the researcher to determine if parametric or non-parametric statistical tests would be appropriate for the study. The results showed that the variables were not normally distributed, so as a result, the researcher used non-parametric tests in the analysis. These included the Mann-Whitney U test and the Kruskal-Wallis test. Descriptive

statistics were also used to measure frequencies of the responses. To test the reliability of the constructs, Cronbach's Alpha test was used. As may be expected with an exploratory study, the results were varied. The findings reported in this chapter show a generally positive association with the activities of CLSCs. Similarly, they disclose student consumer willingness to participate in the product collection initiatives and in the purchasing of recovered fashion products. Student responses also reveal that a primary retailer facilitated CLSC would be appealing to a developing market.

CHAPTER SIX: QUALITATIVE RESEARCH FINDINGS AND ANALYSES

6.1. Introduction

The previous chapter presented the findings and analyses of the quantitative data collected from university students as the potential and future market for the activities of CLSCM in South Africa's fashion industry. To further assess the opportunities for the adoption of CLSCM activities by SMME retailers, this chapter gives an account of the qualitative findings from the interviews conducted with owners of 12 SMME fashion retailers, one CMT stakeholder that manufactures for SMME retailers, and one non-profit organisation that advocates for reform in the South African fashion industry. The interview questions focused on current perceptions, operations and experiences with sustainability in the fashion supply chain. The interviews also explored perceptions of CLSCM activities facilitated by SMME retailers in South Africa, as an African developing country. The benefits and risks of adopting a CLSC were then investigated. In conclusion, participants were asked to consider additional limitations associated with adopting CLSCM activities as SMME retailers, and were further asked to recommend how to alleviate some of the identified limitations. The findings were analysed using NVivo™ software. Thematic analysis was applied to distinguish themes, categories and codes within the responses provided by the participants. Four themes were found in the transcribed documents. The themes were organised according to the following objectives that were applicable to this section of the study:

- Research objective two: To determine the extent to which product knowledge would impact the adoption of CLSCM.
- Research objective three: To assess the extent to which perceived benefits would influence the adoption of CLSCM activities.
- Research objective four: To analyse how perceived risks would affect the adoption of CLSCM.

- Research objective six: To evaluate support for the activities of CLSCM systems from relevant stakeholders.

6.2. Response rate

The qualitative data were collected using in-depth interviews. The targeted sample for this section of the study was sixteen participants. Due to time constraints and the challenges presented by the COVID-19 pandemic, eleven participants in total were interviewed using telephonic and web-conferencing applications such as Zoom. Three participants communicated that they preferred to submit written responses to the interview guide. Consequently, the total response rate for the qualitative section of the study was 87.5%.

6.3. Organisation profiles

SMMEs contribute greatly to the operations of the South African fashion industry. They appear at all levels of the extended supply chain. This study focuses on SMMEs operating as retailers, but also includes the perceptions of one CMT stakeholder, and one non-profit organisation that is knowledgeable about the operations of the South African fashion industry. The fourteen representatives who participated each held senior positions as owners in their organisations. For the SMME retailers and CMT, this meant that they all had a well-informed impression of their business' internal and external operations and its short and long-term objectives. The representative of the non-profit organisation holds the highest position in the organisation's South African team, as country coordinator. The positions of the participants also ensured that they were better informed to provide advice on potential future and current adoption of CLSCM activities. Also, owing to their positions in their businesses, the representatives of the SMME retailers were able to provide insight into the ethical consumption habits of their consumer bases, with particular reference to university students, and their expected perceptions of the activities of CLSCM.

The profiles of the participating organisations and their representatives are summarised in **Table 6.1** and are as follows:

- **Participant 1:** This participant represents an SMME operating from Durban in KwaZulu-Natal. The business focuses on producing custom-made designs and ready-to-wear fashion for its female target market. The participant, who is the owner of the business, has a degree in Biotechnology and has several roles in the business. These include being a fashion designer and seamstress. The business has an office in central business district. In addition, its products are available at markets in the Durban area and sold from the business' social media platforms.
- **Participant 2:** The participant represents a business based in Durban, KwaZulu-Natal. This SMME's product offerings are not limited to fashion, but extend to decor accessories as well. The business does not outsource the manufacturing of its products. The participant representing the business has a diploma in textile design and is a director and the owner. In addition, the business has a social media presence and operates as an E-commerce vendor. This makes its products available to consumers across South Africa. Its products are also sold at various markets in the province.
- **Participant 3:** This participant represents an SMME retailer that has a physical store in KwaZulu-Natal. The business' main focus is on manufacturing bespoke garments and on providing its consumers with environmentally sustainable products. The manufacturing of the products of this business is done in-house.
- **Participant 4:** The participant represents a lifestyle brand based in the Western Cape province. The business outsources its manufacturing, and has physical stores in the province. The business is also an E-commerce vendor, allowing it to serve consumers across South Africa.

- **Participant 5:** The participant represents a newly established business that is based in Rustenburg, in the North West province. The business offers affordable clothing to female consumers. It operates through various social media platforms, including Whatsapp and Facebook. The business' products are also available at local markets in the area.

- **Participant 6:** This participant is an owner of a business that is based in Beaufort West, Western Cape. The owner is a student and supplies secondhand clothing to consumers through social media platforms such as Instagram.

- **Participant 7:** The participant represents a brand that sells Asian street-wear. The business is based in Durban, KwaZulu-Natal and distributes its fashion items through its online store. The participant is an owner of the business.

- **Participant 8:** This participant represents a medium-sized business with eight stores in the Western Cape province. The business was established in 1997 and sells Bohemian style clothing, accessories and footwear. Consumers are also able to purchase the business' products through its online store. The participant owns the business.

- **Participant 9:** This participant is one of two owners of a CMT business that is based in Durban, KwaZulu-Natal. The business caters to SMMEs in the fashion industry.

- **Participant 10:** This participant represents a business-to-consumer and business-to-business supplier of clothing and footwear, based in Musina, Limpopo. The business also exports to countries within Southern Africa. The participant owns the business.

- **Participant 11:** This participant represents a global non-profit organisation with representatives and offices across 92 countries. The organisation was founded following the collapse of Rana Plaza in 2013. It aims to educate stakeholders about the sustainability injustices within the global fashion industry supply chain, and advocates for ethical supply chain practices and mindful consumption. The participant has twenty years working in the South African fashion industry, and is the country coordinator of the non-profit organisation's South African team.
- **Participant 12:** This participant is an owner of a vintage clothing retailer, based in Durban, KwaZulu-Natal. The clothing items of this brand are distributed through social media platforms such as Instagram.
- **Participant 13:** This participant owns a secondhand and vintage clothing brand that is based in Johannesburg, Gauteng. The business' products are sold through social media platforms such as Instagram.
- **Participant 14:** The participant represents a medium-sized online activewear brand established approximately five years ago. The brand has an online store and is based in Durban, KwaZulu-Natal. The participant is an owner of the retail store.

Table 6.1: Organisation and participant profiles

Participant	Type of business	Location	Participant position	Size of organisation	Methods of operation
Participant 1	Custom-made and ready-to-wear designs	Durban	Owner/ Fashion designer/ Seamstress	Micro	Physical store, markets, social media
Participant 2	Fashion and decor	Durban	Owner/ Director	Micro	Markets and online store
Participant 3	Bespoke fashion	Durban	Owner/ Head designer	Micro	Physical store
Participant 4	Lifestyle apparel	Cape Town	Founder/ Director	Small	Physical stores and online store
Participant 5	Women's clothing	Rustenburg	Owner	Micro	Social media and markets
Participant 6	Secondhand clothing	Beaufort West	Owner	Micro	Social media
Participant 7	Asian street-wear	Durban	Owner	Small	Online store
Participant 8	Bohemian fashion	Cape Town	Owner	Medium	Physical stores and online store
Participant 9	CMT manufacturer	Durban	Owner	Micro	Physical location
Participant 10	Clothing and footwear	Musina	Owner	Small	Physical store and social media
Participant 11	Non-profit organisation	Cape Town, Durban and Johannesburg	Country coordinator	Multi-national	Remote voluntary outreach
Participant 12	Vintage clothing	Durban	Owner	Micro	Social media
Participant 13	Vintage and secondhand clothing	Johannesburg	Owner	Micro	Social media
Participant 14	Active wear	Durban	Owner	Small	Online store

6.4. Consumer base profiles and product offerings

The participants were asked to describe their markets. The responses for both target markets and product offerings were varied. Their consumers include those who are trend conscious, those who value unique designs and those who extend their environmental consciousness to their fashion choices. Although some retailers identified working class consumers as part of their preferred target markets, retailers were asked to participate if there was a presence of university students within their target markets. The participants' responses were as follows:

“So, target market is ...mostly ladies, who want to dress up. You know, they want something to complement their lifestyle and also the trendy boss lady. So it's mostly working class, trendy, outgoing ladies”. [Participant 1]

“My target market is those people who appreciate art and vintage art. I also attract those who are looking for something unique and custom made. Some of the products I make are macramé bags, wall decor, woven chairs, fashion accessories and bespoke lighting, just to mention a few”. [Participant 2]

“Definitely someone who is after conserving the environment and they want to have style. But definitely someone who wants to be educated about their clothing, is educated about their clothing and just cares. They don't just buy for the sake of buying but they put thought into what they are purchasing. So that is my consumer, and then obviously they want to look cute”. [Participant 3]

“So its focus is women, between the ages of 18 to 50, preferably working class woman...it's more for plus sized women”. [Participant 5]

“I would say my target market is girls from the ages of 16 to about 24”. [Participant 6]

“So our target market is between the age group of like, 16, to about 35 with mostly people who are into anime -that's majority of our people - but also people who like the Asian aesthetic or type of clothing”. [Participant 7]

“My business targets a niche market of customers who want to be both unique and trend setters, who are both “savvy”, and environmentally conscious”. [Participant 10]

“We target everyday consumers that feel they can relate to our lifestyle brand, which is [sic] between 18 and 35 years. We sell both male and female clothing”. [Participant 4]

“I run a vintage and secondhand clothing business that’s just started to dip its toes into the upcycling markets and repurposing markets...In essence, it's people who are thrifty people; who don't like fast fashion and who'd like to look unique. But within a few months, it became evident that it was mostly women between 18 and 55”. [Participant 12].

“...is a business that basically curates unique vintage pieces, vintage and modern pieces for resale...I would say it's maybe from teen years, upward. Literally anybody that can fit the sizes that I provide”. [Participant 13]

“Age-wise, probably from your teenage years from 16 all the way up until about 40”. [Participant 14]

6.5. Research objective two: To determine the extent to which product knowledge would impact the adoption of closed-loop supply chain management

Using this objective to guide this section of the study, the researcher aimed to first determine the knowledge and expertise participants had with sustainable practices. Where CLSCM practices were not yet adopted, this enabled the researcher to investigate their position when it comes to adopting socially and environmentally beneficial strategies. As a form of triangulation, participants gave further insight into the knowledge and expertise that their consumers and other consumers in South Africa have of sustainable consumption, with particular reference to university students and to CLSC activities. The identified theme that encompassed all the responses given by the retailers, CMT and non-profit organisation was: sustainable supply chain management.

6.5.1. Theme one: Sustainable supply chain management

CLSCs allow retailers and their supply chain partners to enable their consumers to participate in increasing the end-to-end sustainability of supply chains. Theme one therefore assesses responses related to the sustainable practices of these two key stakeholders. Their familiarity and expertise with such practices is discussed under this theme. Participants not only commented on their business' use of sustainable practices, but they also detailed the adoption of sustainable practices from both global and local perspectives. Two categories were established under this theme. The first category was '*adoption of sustainable practices*'. The other category was '*ethical consumption practices in South Africa*'. These are presented in **Table 6.2**.

Table 6.2: Theme one: Sustainable supply chain management

Category	Code
1. Adoption of sustainable practices	<ul style="list-style-type: none"> - Limited global adoption - Limited local adoption - Role of sustainability in SMME retailer supply chains -Sustainable strategies currently adopted by SMMEs
2. Ethical consumption practices in South Africa	<ul style="list-style-type: none"> - Ethical purchasing decisions -SMME retailer accountability for consumer disposal of used fashion - Consumer familiarity with CLSC activities

6.5.1.1. Category one: Adoption of sustainable practices

Four codes were defined under this category. These are discussed in the sections below:

Limited global adoption

The participants commented on the global adoption of sustainability in the fashion industry. According to Participant 3, sustainability has played a disruptive role in the fashion industry and has transformed the manner in which supply chain stakeholders are expected to conduct their supply chain operations. The participant further explained that sustainability has had an impact on ‘*traditional processes*’, some of which have since had sustainable alternatives provided.

Sustainability has also encouraged stakeholders to become more innovative in their approaches to these new standards. Participant 12 further noted that sustainability is becoming more important to how the global fashion industry operates, especially with growing focus on the reuse of fashion and on business' that do this. Participants 14 and 12 highlighted the benefits of adopting sustainable practices as reasons to support their value to the industry:

“For me it’s literally been a disruptor [sic] role and it has forced companies to re-look their working model or their supply chain, and how those are set up, and begin to implement processes that will protect their workers, the environment and the consumers. So the role that it plays is incredibly important, that goes without saying, and it forces people to be creative...It’s playing the role of a disruptor in a chain that we have been so used to, for so many years”.
[Participant 3]

“Sustainability was pretty much not on the top of the priority list before, but it’s gaining more momentum to the point where fast fashion is actually kind of shaking in their boots a bit because thrift, and a call to be more accountable and ethical is coming into play”. [Participant 12]

“Globally, I think sustainability is really important. It’s of vital importance to all industries. The global fashion market, I suppose, is no different to that. Obviously, sustainability has got a lot of pros. It can help improve your sort of productivity by increasing the efficiency with your manufacturer and also, over time, decreasing your costs, if you can go to the sustainable route”.
[Participant 14]

“Sustainability seeks to preserve. That’s its core. With a sustainable supply chain, the fashion industry could slowly start to halt the damage to the environment that it’s caused, since the birth of the industrial revolution, which made it possible for a fast fashion culture to come to being”.
[Participant 9]

“This [sustainability] has a vital role, as it means thinking differently about clothing from start to finish. It is thinking about how all the elements of the supply chain will affect the earth and its people. It also means proper treatment and pay for the individuals working throughout industry #whomademyclothes?” [Participant 11]

Although sustainable practices are growing in popularity, their application is currently limited. Participant 4 observed that despite the increasing use of sustainable supply chain practices, globally, its focus is largely on manufacturing and its inputs. According to the participant, CLSC activities are not yet a focal point of global sustainable practices. Participant 1 established that while sustainability has recently continued to grow globally in its enforcement, this is mainly occurring in developed countries. According to the participant, the developments have not been fully embraced by emerging economies, particularly those in Africa, including South Africa, which the participant suggested is *“...still catching up with regards to that”*. Likewise, Participant 1 summarised that the adoption of sustainable practices is mainly carried out by larger fashion brands:

“Globally, I do feel sustainability plays quite a big role these days. In order for brands to keep up with the current trends, they do create a lot of importance on sustainability. However, I do feel that sustainability across the globe is more focused on the manufacturing side and what materials they are using, instead of the closing the loop side”. [Participant 4]

“So for now, like in the global market, they are pushing the sustainability thing but it’s mostly, if I may say, international. Like in Europe mostly, and in America they are pushing it a lot. In the African market it’s a bit slow in terms of catching up because we’re mostly behind with these things, especially in terms of fashion. So it does play an important role, but only now in the past, I would say, under five years that sustainability is being picked up and being taken seriously, especially in the fashion industry...It’s more on demand because you can see with your big clothing retailers that have picked it up, but it’s not on a big scale”. [Participant 1]

Limited adoption in South Africa

Participants suggested that sustainability has been adopted in South Africa, however, this has not been adopted at the same level as in developed countries. According to their responses, some of the usage in South Africa is limited due to a lack of demand from consumers, the limitations of outsourcing processes and insufficient resources. As such, Participant 1 reiterated that this is mainly applied by larger retailers:

“...it’s not being applied as much as it should be with regards to catching up with the rest of the world. So it hasn’t really affected South Africa as much”. [Participant 1]

“I think as the demand for ethically sourced products grows, South African stakeholders will obviously be forced to adhere to the standards... as the world progresses into more sustainable ways of doing things, it’s going to force South Africa to try and see what can we, in our section of the supply chain, implement that is going to be ethical and sustainable, and that is going to make sure that every link within the chain is protected as best as we can”. [Participant 3]

“In South Africa, I do think it is a bit harder to be sustainable due to our limited resources”. [Participant 4]

“I would say, overall, we are not where we should be as a fashion industry in South Africa, because we’re still very reliant on imports, which I think if we were not, then it would have a lot of positive impact on the people in South Africa- stakeholders such as your customers and investors”. [Participant 5]

“I think sustainability is a big trend for retailers. So they find big gains from opening businesses such as thrift stores. I think there are large amounts of people who have opened online thrift

stores in the past few years. And supplier wise, I think it's a good way for individuals and for smaller thrift stores, that are physical stores, to earn an income". [Participant 6]

"Although the first world countries are leaning more towards the recycling and sustainable practices, South Africa generally... we catch up to what the rest of the world does eventually...It does have a big role to play. You can see recycling and stuff is becoming a big thing in the country". [Participant 7]

However, while South Africa is still behind developed countries, Participant 3 noted that pressure resulting from global adoption of sustainable practices will encourage more stakeholders to adopt them. The participant believed that pressures from the local environment will also encourage more ethical practices. Participant 11 also argued that the Rana Plaza incident changed the perceptions of business:

"So the impact is forcing a lot of companies within South Africa to re-look how their products are produced. As a company, how am I producing my products and am I looking after my employees? Which is why I think, over the past couple of years, we have had a lot of strikes. Not just looking at the fashion industry, but looking at industry as a whole, because there aren't those ethical and sustainable measures put in place. So as workers and global standards are put under the microscope, then companies or stakeholders are forced to have a look at what they accept and what they don't accept". [Participant 3]

"...if you looked at 2013, brands were not doing anything prior to that. I think after the Bangladesh collapse, and because it was such an uproar in terms of how can humans work in this condition, etc, etc, I think brands started paying attention. So I would say that from 2013 onwards, there definitely was a shift that they realised sustainability consciousness, ethical values, within the fashion value chain, was important". [Participant 11]

Role of sustainability in SMME retailer supply chains

Sustainability in the fashion industry is often reported from the perspectives of larger retailers and their supply chains, however there is limited information on the roles that SMME retailers in developing African countries, such as South Africa, currently have in the adoption and enforcement of sustainable supply chain practices. It was important to have an impression of the role that participants felt SMME retailers currently have or should have when it comes to utilising sustainable practices. Participants 1 and 2 considered the role of sustainability in their businesses. Participant 1 discussed this from an environmental perspective, while Participant 2 discussed it from an economic perspective:

“So I don't play such a big role with regards to pollution and stuff. So being held accountable would be more for your macro retailers, your famous brands... So, there's not much accountability with your SMEs”. [Participant 1]

“The business should be able to sustain itself. In my line of business, which is fashion and decor, I am able to liaise with the manufacturers of raw materials that I will need to sustain my business. These people are very important in my business, as they determine how much I sell my products for and the quality of my products. So if the raw material gets more expensive then I will be forced to up my prices, which also in turn can affect my business”. [Participant 2]

Sustainable strategies currently adopted by SMMEs

Participants recognised the different sustainable strategies they have currently adopted in their businesses and in their interactions with their supply chain partners. Participant 4, for example, added that their business had already begun the process of adopting CLSC activities. Limitations of carrying out sustainable strategies, resulting from the sizes of the businesses, were discussed. However, despite such restrictions, participants asserted that their businesses did apply

sustainable methods where possible. Methods discussed included the refurbishing of fashion, reduction of waste and excess stock, the elimination of plastic, the maintenance of fair and ethical supplier relationships, and the facilitation of garment collection initiatives:

“I think using recycled material for fashion is very creative and I do use such in making most of my products”. [Participant 2]

“But one thing we have been looking at was just customising and a simple thing like taking an old jacket and maybe doing something different with it ...whatever the customer wants. I have had off-cuts and I would make something else out of the off-cuts and try [to] sell that. So it is just the simple things, because that is what we can manage at the moment, and also taking a business and turning it into a green type of business”. [Participant 3]

“...for us, because we are quite limited with sustainable fabrics and raw materials, we are trying to eliminate the use of plastic. So we don't use any plastic in packaging and, as well, we don't use any in the production processes. We also focus on fair trade and looking after our manufacturers in terms of having more of an ethical role. So we use smaller CMTs and have quite close relationships with them. In the future, we would only want to use sustainable fabrics, when it becomes more available. In terms of closing the loop, we have tried to implement a project and we have been working on it in terms of allowing our customers to return our goods and giving them a percentage off in their next purchase to incentivise them. So we always thought about coming up with a returns policy like this”. [Participant 4]

“So it obviously does play a role because I'm looking for ways for how to use the, say for example, leftover fabric or the pieces that have been left over from making a ready-to-wear garment. Say, for example, it's five items left, then I do look at ways to economically save that and that means less waste and a more sustainable environment to work with, and looking in the future for better ways to dispose of the fabric that is not used, the cotton, plastic and things like that”. [Participant 1]

“Basically we are a small company and we try to never buy too much. So we hardly have any excess stock. So whenever we have extra, we sell it cheap. From time to time, we have to donate. We never got big, big quantities. So that is how we try to manage. Sometimes it's worked for us and sometimes it's obviously against us because we don't have enough stock”. [Participant 8]

“My business does have a role it plays in that I do make purchases of secondhand fashion products, refurbish the items purchased and resell the items in a completely different region, whilst meeting the demand for the good in the region I send my goods” [Participant 10]

6.5.1.2. Category two: Ethical consumption practices in South Africa

Consumer ethical consumption practices were discussed by the participants, particularly those related to university students. They provided insight into how consumers in South Africa relate to this subject and also referred to how their target markets relate to it too. In addition to the responses given by the university student's in the study's quantitative section, these discussions allowed the researcher to develop a deeper insight into the level of familiarity and expertise this market in South Africa has with ethical consumption. The roles of SMME retailers in the ethical consumption practices of consumers, particularly university students, in South Africa was further explored. These insights were useful for determining the presence of market opportunities for the adoption of CLSCM activities. Three codes were established and are discussed in the sections that follow.

Ethical purchasing decisions

Participants gave the researcher insight into the purchasing habits of consumers in South Africa, particularly those who were currently university students. The responses were varied. Participant 1 insisted their consumers were more focused on the brand, look and quality of the product, rather than on the sustainability implications or contributions it may have. The responses from

the other participants showed that there was a general sense of interest in sustainable and ethical consumption among the participants' consumer bases. The consumers were not only concerned with the economic and social sustainability of the products, but Participant 3 considered that some of their consumers also preferred to purchase durable fashion, rather than disposable fast fashion items. This would ultimately reduce the impact of waste on the environment. Despite Participant 5's argument that the average university student is not concerned with ethical consumption, Participants 6 and 12 highlighted that Generations Y and Z were more likely to consume ethically and to hold other stakeholders accountable too. These insights were significant to this study, given the majority contribution of Generations Y and Z cohorts to the quantitative findings of this study. Participant 11 also identified young people as interested in ethical consumption:

“ It also depends on their background. So it would depend on what they've been exposed to, what they are studying. I think people who are more aware of sustainability, that we need to be environmentally friendly, [and] that we need to be thinking about the future...would be more concerned. But the other average students, no, I don't think”. [Participant 5]

“I feel like especially the gen Z's, I'm a millennial, but I see the Gen Z's are being more ethical. Thank God because it's trendy. It wasn't a trend when I was young. It was trendy to have bad eyeliner, but for them, being ethical, is now trending. And it's something that they're holding people accountable to. So I do think they're more ethical in their choices. And I think that there's a judgmental element around consumerism already, and you know, with 'cancel culture', just thriving, people are hyper vigilant about the choices they make and how they consume online because everyone feels like all eyes are on them”. [Participant 12]

“Africa has not picked that up as much, but it's a very little percentage. I would say about 15 to 20%. So that means about 70 to 80% of consumers are just more concerned about the brand, are more brand conscious of your name brands and your quality and obviously how it looks. [They

are] more focused on that instead of the ethical or sustainable practices behind the manufacturing”. [Participant 1]

“Definitely, ethical consumption plays a major role as nowadays people are very conscious of environmentally friendly fashion or materials. Most of the products I make are made from recycled materials and consumers often ask about it and get excited knowing that they are contributing to the environment”. [Participant 2]

“Most of my consumers are people who want bespoke garments but, from conversations that I have had with some of them, they do want something that will last them a long time. They do want something that you as the designer have put thought into. I have even had a customer that was actually very interested in the detail of just the construction of the garment. ‘If you use this thread will it keep my sleeve intact for long?’ At the moment, it is construction of the garment because it is one thing to have a fabric that is sourced ethically but if you are going to make a garment out of the fabric and it doesn't last the consumer longer than 6 months then what is the point, because it is badly made up”. [Participant 3]

“The main problem is not the consumer, the main problem is the manufacturer[s], which are producing thousands and thousands... I don't know if you have ever seen that movie about fashion regarding how much fashion is going into the rubbish? In this country, South Africa, I don't think there is even like, the idea of to try to... it's almost like wrong...With any secondhand of our clothing, we just giving it to the worker, to the maid, to like the gardener... There's so many people that are in need”. [Participant 8]

“Yes. I would say it does for the majority of our consumers. We do have quite a [sic] educated consumers in terms of ethical consumption and our consumers like to support local. And there is a big local movement and fair trade movement. So I would say it does play a huge role”. [Participant 4]

“So I think, especially Generation Z and millennials have a strong focus on sustainability and ethical purchasing, in contrast to how consumption was in previous years. I think often people are willing to pay more for something that is ethical than something that is cheaper and unethical”. [Participant 6]

“I have found in conversation with young people and students in South Africa, transparency is key to them as consumers”. [Participant 11]

SMME retailer accountability for consumer disposal of used fashion

CLSCM activities start with retailers and their supply chain partners participating in the disposal of fashion products used by consumers. Participants discussed the extent to which their organisations should be held accountable for the manner in which consumers dispose of their fashion products. Some participants did not think that retailers should be held accountable for this. Other participants believed there were ways, albeit limited, for SMME retailers to encourage and participate in the sustainable disposal of their consumers’ fashion products. According to Participant 3, the fashion industry is *“the second largest contributor to waste globally”*. The participant explained that accountability was equally dependent on supporting legislation and the extent to which a country upholds sustainable practices. The participant suggested that legislation should be drafted that guides fashion supply chain stakeholders on what is expected and how it is expected to be done. Participants 4 and 14 believed that it was necessary for SMME retailers to educate their consumers on how to dispose of their used fashion, or to promote the disposal of such products. Some of the responses to the question were as follows:

“So I wouldn't hold my customers accountable or will they be able to hold me accountable”.
[Participant 1]

“As a retailer you can only do so much. Unfortunately, once the product is with the consumer you have no power or control over it. As a retailer, we do promote recycling and encourage our consumers to be aware of such”. [Participant 2]

“They should be held very accountable, but it also goes into as a country or as the industry how much do you uphold your sustainability or ethical standards? So I think the bar can only be set as high as the law is willing to set it. So the consumer can make as much noise as they want to make and unless laws are also passed to support what the consumers are saying, there is not really much that can be done. Because if a company decides to do things a certain way, then they will do things the way they have set them out to do”. [Participant 3]

“So we feel they could be held responsible to a certain extent. We feel that they should almost put certain measurements in place where consumers are able to close the loop and dispose of it correctly or return their items once they have stopped using them, but also I feel that it is quite important for SMMEs to educate their consumers about sustainability and being able to return and recycle and reuse”. [Participant 4]

“I don't think they should necessarily be held accountable, and especially looking at SMMEs, as you know, new businesses... most of them are struggling financially, and we don't see it with the big retailers being held accountable. So I don't think it would be fair to do that to SMMEs, but I do believe that it should be encouraged across the board. It should become a norm, and it should become a culture”. [Participant 5]

“They should be taking responsibility. They need to equip themselves with knowledge to create products that are able to live out its [sic] life without causing any harm. Most garments that consumers part with end up in dumps or landfill”. [Participant 11].

“It's quite difficult to hold a retailer accountable for basically the attitudes and decisions of their customers. I do believe that all retailers should promote sustainable disposal of their products and the sustainable use of their products, and it should be something that's done regularly. Your retailers should advertise more about sustainability and discuss openly with their customers on how to be more sustainable with the product, and things like that. But ultimately, the decision is always going to lie with the customer as much as what the retailer does”. [Participant 14]

“Oh, this is a tough one. Because, to be honest, I don't think some people actually think about it. Do you think people think about it? Maybe some people just think, “Look, I'm running a business here. Once somebody buys it, they can do whatever they want to do with the item”. So I'm just thinking maybe, for some people, it doesn't even concern them. They don't even get moved by it”. [Participant 13]

Consumer familiarity with closed-loop supply chain activities

Product knowledge explores consumer expertise and familiarity with a product or service. All participants suggested that consumers in South Africa are familiar with some of the methods used to close the loop in fashion supply chains. Some participants expressed that young people were more likely to be familiar with these activities. Participants detailed the reuse of used fashion as the most common recovery method that consumers are familiar and have expertise with. According to participants, there are consumers who are thrifty with secondhand and vintage fashion. Consumers also actively participate in the resale of used fashion on secondhand resale platforms, that include those on social media. Participant 3 further indicated that the popularity of reusing fashion in South Africa is often a result of the financial savings they present to economically vulnerable consumers. The participant further explained that acceptance of reuse methods in South Africa was also dependent on the age groups of consumers. In addition, Participant 11 also detailed that consumer familiarity is increasing with local brands that promote recovery of materials.

The responses were as follows:

“...I would say, primarily South Africa, we are familiar with secondhand. You can see on Gumtree people are selling secondhand stuff, even on Facebook and Instagram. So with secondhand stuff, we are quite aware. If it's good quality, you can always resell it. With the remanufacturing and recycling, it's not a famous practice right now in South Africa. It hasn't lifted off the ground as yet”. [Participant 1]

“Currently South Africans are slowly grasping and promoting the concept of using recycled materials. Many people are actually advocating for the use of such”. [Participant 2]

“Very familiar, but with South African culture this can go two ways. So you have the younger generation who are like, ‘Oh my gosh, ethical is completely the way’ and they support. From an environmental point of view they are like, ‘Yay, we saw this!’ and they see the long term impact for the environment. Then you have the ones in our mums’ and aunties’ age group, the generation before us, and for them secondhand has a negative connotation. So you find that maybe they are not purchasing secondhand as much as we would want them to because for them it’s, ‘I am not poor, so why should I shop secondhand?’ Then you have South Africans who are forced to buy secondhand because that is what they can afford. So there is not even purchasing out of ‘I am conserving the environment’, they are thinking, ‘This [is] what my wallet can allow me to do, so this is what I am going to do’”. [Participant 3]

“I think the younger generation is quite familiar with it and quite accessible to it. There is quite a bit of a vintage scene and a lot of people wanting to buy vintage clothing and secondhand clothing and they have no problem with it”. [Participant 4]

“So there are people who have been living below the breadline, for whom it's been a way of life. And that's the majority in South Africa. And when I source in more informal settlements, I'm sourcing with a lot of people who are much less privileged than me”. [Participant 12]

“I don't think they are familiar, you know? Generally, when I go to the store and stuff, I don't see it pushed as much that this is recycled. You do get your brands... but it's not such a major thing in this country”. [Participant 7]

“I think they're more aware of the the secondhand one. I'm not sure about the recycled and remanufactured one, but I'm very sure the secondhand one and lots of South African consumers are aware of that one”. [Participant 13]

“...my opinion on the matter is that majority [of consumers] are not too familiar. I think reason being the familiarity has a very high dependence on the age of the person, and also the education of the person”. [Participant 14]

“The SA consumer is well aware of this. But not many practice this lifestyle. But we are seeing a growth in awareness”. [Participant 9]

“Brands like Sealand gear are educating the South African consumer on recycled products... There are amazing local brands that are using remanufactured processes and South Africans are supporting these local brands”. [Participant 11]

6.6. Research objective three: To assess the extent to which perceived benefits would influence the adoption of closed-loop supply chain management activities

The participants discussed a number of benefits of adopting CLSCM activities within SMME retailers. These were all related to economic, social and environmental sustainability, and were essential for further establishing the opportunities for adoption. As a result, Theme two is titled: *'Sustainability benefits of closed-loop activities'*.

6.6.1. Theme two: Sustainability benefits of closed-loop activities

The sustainability benefits identified by the participants were divided into two categories. The first category focuses on the perceived benefits of the reuse, remanufacturing and recycling recovery methods. Benefits under this category included the creation of employment and opportunities to have a competitive advantage. The second category looks at the perceived benefits of used product collection initiatives. These are summarised in **Table 6.3**.

Table 6.3: The perceived benefits of closed-loop supply chains

Category	Code
1. Perceived benefits of recovery methods	<ul style="list-style-type: none">- Innovation- Brand image and positioning- Economic benefits- Consumer acceptance- Social and environmental benefits- Providing a diverse catalogue

2. Perceived benefits of used product collection initiatives	<ul style="list-style-type: none"> - Corporate social responsibility - Extending the logistics network - Providing incentives - Opportunities for collaboration
---	---

6.6.1.1. Category one: Perceived benefits of reuse, remanufacturing and recycling

The participants provided insight into the potential benefits that SMME retailers, their supply chain partners and consumers could derive from the reuse, remanufacturing and recycling of used fashion. Benefits discussed included opportunities for innovation, social, financial and environmental benefits, and the provision of a diverse catalogue of products:

Innovation

According to participants, the recovery methods of CLSCM systems present an opportunity for stakeholders to become more innovative with how they approach sustainability in their businesses:

“The other benefit I can identify is probably showing people the creative way of turning old items or recycled material into something beautiful and re-usable”. [Participant 2]

“There is definitely a growing demand for trying to find a creative way to address this topic. There is so much more room for brands to creatively use their dead stock or recycled stock”. [Participant 4]

“A t-shirt could have been thrown away after three months of use, but because you thought I need a little coat or a little slouchy bag, that I can put my groceries in once I am done, then you have given that garment an entirely new life”. [Participant 3]

“So my upcycled pieces make the piece truly unique, whereas before it was a jersey that could have been available 40 years ago at Woolworths, but there's still many out there in the world. If I buy that jersey and embellish it with embroidery, it truly is one of a kind...it's interesting to rethink something that you think is done in its life-cycle, as a fashion garment, and to then reimagine it and repurpose it as something.”. [Participant 12]

“Well, I think taking clothing and remanufacturing it, you can conform to certain trends that might still be demanded, and still not form part of the fast fashion industry in which there's a lot of pollution. And I think it can create unique products for consumers, and that each product will be completely unique and other people might not have the same product”. [Participant 6]

Economic benefits

The participants summarised opportunities as profitable and cost effective. According to Participants 3 and 12, there is potential for SMME retailers and their supply chain partners to gain financially from remanufactured fashion, if a market for such products is present. Participant 12 expanded that these financial benefits of reusing fashion can be extended to consumers. Participant 1, similarly, explored the financial cost savings of not needing to purchase new fabric by remanufacturing what can be collected through product return initiatives. Participant 7 briefly referenced the economic benefits of selling the used fashion to recycling facilities:

“My thing is, if there is a demand for the remanufacturing of these garments, it benefits all persons involved because if customers are saying, ‘This is what I want. This is how I want it

done', then there is obviously a demand for it. Then I go with my remanufacturing requests and I say, 'Listen, this [is] what I want made'. So every person within the supply chain gains, regardless of whether it is being remanufactured or if it something that is done from scratch. So I think there are benefits, mainly financial benefits". [Participant 3]

"The other benefit could be saving a bit of money because you're using what already has been used. So if I have it then I don't have to purchase [another], which means less money being spent. So that might improve some savings on the side". [Participant 1]

"I think obviously, benefit wise, I would say, with sales. I mean, I do think that there are few people out there that could benefit from having garments come in at a slightly cheaper price, especially good quality garments that may have just been reused. From a remanufacturing point of view, as well, I mean using these garments to remanufacture to make other things, you're obviously cutting costs. You're saving from a cost perspective, and then obviously, ultimately, from a sustainability point of view, as well. You do it playing your part in assisting from a sustainable point of view". [Participant 12]

"I think there could be benefits to it, especially reselling to people who can recycle it. Because at the moment, obviously, our business doesn't have the capacity to go and recycle clothing or that sort of stuff... You can go to consumers and maybe have drop off zones for offloading, and then recycle them... Because even if you can gain the capacity to reuse material, if you take it back, you can start another sector of the business, just maybe taking material of used clothing, and then turning it into just material and selling it to other brands who could use it. So in that way, you could kill two birds with one stone, on your end; using it for your clothing, but also start another business where, because you have the capacity you can". [Participant 7]

"I think it would, obviously, reduce costs for my side. So I wouldn't have to buy new material..." [Participant 5]

“I think one of the biggest benefits is obviously the cost, because my input costs are very low, and therefore I can also make my prices quite low for consumers. So obviously, it therefore leads to increased profits and sales”. [Participant 6]

“...it would benefit my supply chain through discounts from manufacturers... for providing them with the reusable materials”. [Participant 10]

Brand image and positioning

According to Participants 3 and 11, CLSCs provide an opportunity for stakeholders to position their brands favourably in the marketplace. As global and local supply chains move towards enforcing more sustainable practices, stakeholders who pioneer these processes will establish a competitive advantage in the industry. Participant 4 further explains that this positioning would also enable businesses to increase their profits and improve their brand image:

“You save the environment and then you also position yourself to be in a place where you can compete when the systems are completely put in place, because that is where companies or industries are headed or forced to head anyway. So you put yourself at a competitive advantage because you started out early and you put yourself in a competitive place where people are like, ‘Cool, here is the go to in the industry. We can trust this person because they have done this for such and such a time’”. [Participant 3]

“I do also feel that... it could increase sales and give you good publicity”. [Participant 4]

“A lot of people who consume our products are much younger people, you know, between the 18 to 35, or like, 16, to 35 age group... they are very much engaged in wanting to see change or sustainability... So, I would say it would make them excited and want to support the brand even more, if they knew that we are using sustainable products”. [Participant 7]

“Obviously, a good reputation for a company that repurposes, reuses and remanufactures”.
[Participant 5]

“...in terms of business image and loyalty, that's credited to the fact that I use sustainability and I use used clothes and resell”. [Participant 6]

“Yes. It would give a competitive edge globally”. [Participant 9]

“...from a marketing perspective, it can also be used as a proactive mechanism to kind of show consumers that this particular brand cares about the environment. That this is what they are doing”. [Participant 11]

Consumer acceptance

Participants indicated that there would be benefits of reusing and remanufacturing fashion, particularly regarding potential consumer feedback and acceptance. Participant 1 inferred that consumers would be receptive of a quality product. This would especially appeal to consumers who prefer sustainable practices. In the same way, the participant considered the role that branding would have in the acceptance of products. Participant 2 acknowledged that the current popularity of vintage fashion could reflect potential acceptance of remanufactured apparel. In addition, Participant 4 further anticipated that consumers would be receptive of CLSCM practices. Participant 11 added that acceptance would also depend on their knowledge. This importance of awareness and knowledge of sustainable practices motivated the selection of university students, from a university that considers sustainability in its strategies, for the quantitative section of this study:

“So I think that we are almost a 50/50. So, there are some people that won't mind as long as it looks good and obviously for the guys that have more of an ethical mind-set, they won't mind”.
[Participant 1]

“Nowadays people are excited about vintage clothes or thrift collections coming back to fashion. So consumers want so much to identify with vintage or promoting recycled materials. So I don’t think they will have a problem using remanufactured clothing or materials for fashion”.
[Participant 2]

“People want to be educated. People want to be helpful and if you present them with something that is going to help them be what they want to be, that helpful human being without even having to lift a finger, they are going to do it and it goes down to how do you sell it and how do you package it? If you can buy that jacket from a dodgy looking thrift store in that dodgy part of town and the jacket smells like pee then I am pretty sure you can buy a jacket that is also secondhand but it is obviously presented a different way. So I think they would respond very positively”. [Participant 3]

“I think if we had to release reused capsules where we would say our one jacket didn’t sell right and we have got some dead-stock and we re-purposed it, I think our consumers would be really keen on that. Even selling reused items if they are in a good enough state, then our consumers would be really keen on that”. [Participant 4]

“I think that they [the consumers] would actually even be excited about the remanufactured ones”. [Participant 13]

“If you have to bring sustainability into it, I feel like people would be quite excited about it”.
[Participant 7]

“Fashion is meant to be fun and quirky – I think consumers will be fascinated by this process [remanufacturing] but will endorse it once they have the knowledge on why this is important”.
[Participant 11]

Social and environmental benefits

There are both social and environmental benefits of CLSCM activities. Participant 1 specifically predicted the contributions that remanufacturing would make towards improving the sustainability of the environment. Participants 3 and 11 mentioned that CLSC recovery methods would allow for the extension of a product's life-cycle. This could reduce the amount of waste generated by fast fashion products, for example. They also narrated the societal implications remanufacturing might present, particularly for supply chain labour:

“With the benefits, obviously, it's sustainable with reusing and remanufacturing, and so less pollution and less waste. So that proves to be a lot of benefit to the environment and the surroundings and also with regards to the working conditions”. [Participant 1]

“...it gives the product a longer lifespan...” [Participant 3]

“Other benefits, I would say, just for our own knowledge that we are being more sustainable and that there is not so much waste”. [Participant 4]

“...so that I am not having a negative impact on the environment and actually doing something positive for the environment”. [Participant 6]

“Yes, it would give my company the chance to upgrade our CSR portfolio as well as do our part in helping the fight against global pollution”. [Participant 10]

“With global warming less a rumour, more an irrefutable fact, the fashion industry does its fair share in polluting the planet. With brands that endorse recycling, reuse or remanufacturing – it

simply means that the brand is interested in creating a product that is able to live out its life without causing any harm – this should be celebrated”. [Participant 11]

“Benefits are doing our bit to lessen our carbon footprint. An ethical approach means we are happy and our staff is happy and our customers are happy”. [Participant 9]

“It's a good way to save the environment, I guess. Making sure that instead of an item may be ending up somewhere being dumped in a way that is harmful, then it's reused”. [Participant 13]

Providing a diverse catalogue

Participants predicted that consumers might accept a diverse catalogue that includes both new and recovered products. Participant 2 mentioned that their business was already in the process of establishing such a product offering. Participant 3 explained how such a catalogue would appeal to consumer desires to be more responsible with their consumption. The participant further suggested that such a catalogue could allow the retailer to rent garments to consumers, which is another method for reuse. Providing a quality used product was established as essential towards ensuring consumer satisfaction with a diverse catalogue:

“There will be customers that will be quite open to the fact that there is used and reused and then brand new items, depending on how it looks and depending on the quality...Mostly that's what my customers look for. The fabric, is it good quality and is it not torn...stitched properly...? If that's on point, then they definitely won't mind”. [Participant 1]

“It's something that we are actually working on at the moment. I think consumers need to be made aware of what's available for them and make a choice. I am sure they will be excited to be presented with both old and new, as we have a lot of people who desire one over the other”. [Participant 2]

“So here you know they have where you are able to rent garments, so consumers will bring in their garments. So the benefit is I would have a catalogue of options to provide to the consumers. So I could turn garments that are brought in to be made into something else and others could be rented out. So that is the benefit, that there would be many avenues of making money out of what is brought in”. [Participant 3]

“I think consumers would be quite acceptable and quite keen on the idea, especially if the used products are of good state and of good quality. I think they would be very keen on that type of idea”. [Participant 4]

“I believe there would be, in that you've broadened our client reach”. [Participant 9]

“I think it's a great option to give the consumer the ability to make the decision of whether they want to go for either something when it's new, and it's firsthand, or something that is a used product”. [Participant 12]

“The diversification of the two types of products will give me the opportunity to tap into both markets, mainly the eco-friendly users who purchase goods that come from companies with good Corporate Social Responsibility concepts and policies in effect, as well as customers who choose goods according to either their affordability factors...” [Participant 10]

“The consumer market is so segmented, right? So there are people that love vintage shopping, and these people are people that love sort of looking at older clothes. It depends on where their style preferences are. And there are consumers that are actually not interested at all in old clothes. They want something new. So I think a catalogue that explains the process is actually quite a good thing”. [Participant 11]

6.6.1.2. Category two: Perceived benefits of used product collection initiatives

Due to the value of used product inputs to the CLSC, participants identified some benefits of facilitating product collection initiatives.

Corporate social responsibility

Participant 1 highlighted how the facilitation of product collection initiatives could enable the businesses to establish the CSR sections of their operations. Participant 3 also mentioned that collection initiatives would allow their business to be sustainable and to extend this to their consumers:

“You can donate to charity. Things like that can prove to be a benefit and can prove to be a social enterprise portion of the business, if that makes sense. You can add to the social enterprise of the business because you can create a whole project that could help with a charity and help those in need with necessities, such as clothing” [Participant 1]

“If your customer comes in [and says], ‘Hey. This is the stuff that I have’, and then there is obviously an incentive given to them, then I can turn it into whatever I want to turn it into or what they want it turned into. So from a sustainable point of view, I guess that is where we would be and I would be playing my part as well” [Participant 3]

Extending the logistics network

According to Participant 3, product collection initiatives would present an opportunity for the extension of logistics networks, which could then allow for the creation of employment and the

production of new technologies. Participant 4 discussed extending the SMME retailer's network through including NPOs:

"The only thing I can think of as being a benefit right now... wouldn't it then create another branch or way for employment? Cause you have all these clothes coming in and those clothes need to be sorted... I know there are companies that take old clothes or waste that could even just be plastic and actually break down those garments and from there new fabrics are made. So I think there is definitely a benefit to it in that the lifespan of the garment is not over and that then creates a demand for technologies to be developed". [Participant 3]

"...we would be able to see the whole process evolve, especially when collecting and putting it in the right place and be able to decide if the garment is reusable or if it should go to the recycling process or if it can be reused and donated to the right cause or the right people". [Participant 4]

Providing incentives

Participants 3 and 4 estimated that providing consumers with incentives in exchange for their used fashion could increase their consumer base and profits. The use of incentives to attract younger consumers to sustainable practices is consistent with reviewed literature from Liu and Hei (2021, p. 19), who argued that Generation Z would be more likely to support sustainability initiatives if it was also affordable, or economically beneficial to do so:

"...that would be a great way of encouraging them". [Participant 2]

"And implementing those things such as coupons and discounts encourages consumers to participate in the activities. So if there is an incentive for them, they obviously want to go back and they want to keep doing it 'cause they know they are not doing it for nothing. Even if they are doing it to save their own planet, but just that incentive will get them going". [Participant 3]

“That was one of the ideas we were thinking of implementing in our one store. For our customers to be able to return our items that they don’t wear anymore and we were thinking of giving them a discount for their next purchase. So I definitely think there are quite a lot of benefits for that in terms of driving sales and closing the loop at the same time and I think our customers would make the effort in terms of bringing their garments back if they are going to be getting a discount. Just some form of incentive would drive our customers to be able to bring their garments back”. [Participant 4]

Opportunities for collaboration

Some of the retailers of vintage and secondhand fashion identified the benefits of collaborating with retailers of new fashion products to facilitate the collection of used fashion from consumers:

“First of all, for me, I think, if obviously, I'm telling my clients that I'm collaborating with so and so, that would create a lot more excitement. And more of my clients would want to also be involved and just kind of own a piece from this brand that I'm collaborating with, and that would be my business growing”. [Participant 13]

“I think it's very important for a business that's growing to collaborate with retailers of new clothing because most people still do buy new clothing and do not wish to have recycled fashion or thrifted clothing. And in working with these retailers, they can for instance offer their customers a rebate, in order to bring the clothing back once they are finished using it, and then I could purchase that from them”. [Participant 6]

“I think it would be, if it was organised. Well, I think it could be a really cool drive, you know? You could get young designers involved to upcycle used pieces. That could be an amazing campaign. But whether or not huge retailers would be interested in such a thing is the real question...I'd rather collaborate with a local, small scale business...” [Participant 12]

6.7. Research objective four: To analyse how perceived risks would affect the adoption of closed-loop supply chain management

Although participants predicted several benefits of adoption, they also assessed some risks that could be involved. These were organised into Theme three.

6.7.1. Theme three: The risks of closed-loop supply chain management activities

One theme was identified for this objective. It was divided into two categories of perceived risks: those related to the product collection initiatives and those related to the three recovery methods under study (reuse, remanufacturing and recycling). These are highlighted in **Table 6.4**.

Table 6.4: The risks of closed-loop supply chain management activities

Category	Code
1. Perceived risks of used product collection initiatives	- Quality, quantity and types of product returns - Providing incentives
2. Perceived risks of product recovery	- Offering a diverse catalogue - Quality management - Diverting business from other stakeholders - Consumer uncertainty - Initial investment

6.7.1.1. Category one: Perceived risks of used product collection initiatives

Participants anticipated the risks associated with retailer facilitated product collection initiatives. These include the quality and types of products that will be collected, and the risks of providing incentives for product returns:

Quality, quantity and types of product returns

Participants 1 and 2 noted that if the quality and types of products collected through the product return initiatives is compromised, then it could have a negative impact on the success of the CLSC. Similarly, Participant 9, as the CMT stakeholder, identified that the quality of the products returned could affect the reprocessing:

“The only risk is the type of materials the consumers would bring. Some might not be really what you need necessarily”. [Participant 2]

“In terms of fashion, it’s sustainable but at the same time, with that kind of trade or project, if I buy a jacket- it’s been used already, at times you would buy it quickly and not have a proper, thorough look at how it is inside. If it’s good quality. The con is if you get home and then you realise there’s a hole or if there’s a button missing, so things like that can be a bit hidden if you’re purchasing and only find out when you’re home. So that’s [sic] the cons of that kind of sustainable approach”. [Participant 1]

“A risk is in receiving used fashion that cannot be reprocessed because it is too old”. [Participant 9]

“There are risks involved from failing to collect enough used fashion to make the process viable...”. [Participant 10]

“Then, also, what can be risky is purchasing from consumers who might scam you or overcharge in items that you think will sell and then they don’t sell”. [Participant 6]

Providing incentives

While participants presented that there would be several benefits of providing consumers with incentives to return their used fashion, they did assume risks could potentially be involved that include a reduction in profits:

“So with people needing the money, because now they know they can exchange the items, they might not work on being loyal, and being honest. So trust might be an issue as well. Just trusting your customers and trusting whether they are telling the truth with regards to how long the item has been used or there's only been one button missing or the zip is working properly, when it's actually not working properly, and still needs a revamp or remanufacturing or needs to be removed”. [Participant 1]

“Yes. Wherever there are benefits there will be risks ‘cause you could end up with all this stuff and then it never moves, just talking from a small business perspective. You could just have a whole bunch of stock that you have accumulated because you have put out this ad that says, ‘Hey, my company is willing to do this’, but if I haven't implemented more than one way of turning the items the customers have brought in into something else, then I am sitting with all this stuff and I just become a junk yard for it”. [Participant 3]

“If you are giving coupons or discounts then obviously we will lose revenue”. [Participant 4]

“...just to give them a discount when they bring the secondhand item or any item they bring they can get 20% discount or something from you”. [Participant 8]

“...incentivising the process, because some of the consumers would not maybe want to just give you their old product. They would like to get something in return. So it's just then deciding how much is worth giving, when somebody has given you a certain amount of items”. [Participant 5]

Diverting business from other stakeholders

As a CMT, Participant 9 reflected upon the potential reduction in business that could result from the recovery of used fashion. Participant 8 also argued that profiting from used fashion would impact stakeholders in South Africa that currently benefit from donations:

“It would negatively effect [sic] us because that means we are making less garments”.
[Participant 9]

“There's so many people that are in need. So if we turn it around and say give it to us, and we resell it, we're actually cutting off the donation. There's so many like, U-Turn... If we are going to start asking people to give us our clothing back and we're gonna give you money for it, we're gonna cut that. I mean, maybe it's good in Switzerland where they have no place for it, but I don't see why we need to make money again from our clothing. I think let people donate them”.
[Participant 8]

“And also fashion is fashion... I mean it is recycling itself. It's going to secondhand shops. That's what secondhand shops do. I don't see a point to compete with them”. [Participant 8]

6.7.1.2. Category two: Perceived risks of product recovery

The researcher further aimed to determine if participants might foresee any risks associated with the three recovery options. These are discussed in the sections that follow.

Offering a diverse catalogue

Most of the participants did share the same sentiment that providing consumers with a catalogue that includes both new and used fashion products could have a number of benefits. However, Participant 3 suggested there also could be some risks. Participant 4 indicated the potential for cannibalisation of sales of new products. According to the participant, this could affect their profits. Participant 1 also explained that the size of her business would not support a diverse catalogue:

“They [the consumers] could hate it or love it or I might just end up with a lot that I really can’t use, then what do you do?” [Participant 3]

“In terms of risks, for us, we could risk losing some sales on new products if our customers are wanting to buy our reused products, as obviously our margins would be bigger on our new products. But other than that not too many risks”. [Participant 4]

“I don’t think there will be any benefits because I’m still small and pushing for more of your brand new and on trend fabrics. So that’s why I have to stay on the cutting edge with regards to what I’m selling and so I don’t think it would be much of a benefit to the business, at the moment, because I’m not as big yet”. [Participant 1]

“I said that we have [a] small shop and there’s no place for us to have”. [Participant 8]

Quality management

Participants 1 and 4 identified the risks that could result from a compromise in the quality of the end-products of CLSCs. Participant 1 found it more ideal for consumers to purchase new products than to purchase low quality products from CLSCM systems. Participant 4 stated that not focusing on maintaining the quality of the outputs of CLSCs could affect the opinions consumers have of the brand and its offerings:

“The recycling, so say for example it’s got a hole. Okay, if I’m going to stitch a fabric or you know, try and cover it up or make it look funky or make it look stylish, you can do that but then the con about it is that, with specific fabrics, if you add something new, and for example that something new is lighter or less strong than the one that’s been used on the jacket, for example, then it won’t last long. You’ll see a tear....So I’m not very happy with your patching work, patching a hole here because it doesn’t last. I have learned that from experience... Until you’ve spent your money and you could have saved money to buy something new”. [Participant 1]

“If not performed properly on the remanufacturing then our customers could think that our products are of less quality”. [Participant 4]

“So maybe as one of the risks that could come up is maybe the quality of some of these items. The new ones that I bring in that are, let’s say, remanufactured, and maybe if the quality is not as good, maybe that could be a risk”. [Participant 13]

Consumer uncertainty

Participants noted costs related to consumer responses, particularly regarding uncertainty of the products of CLSCs:

“I personally think that people wouldn't really want to reuse, for instance, your gym tights or things like that. I think people sort of see it as unsanitary, once someone's worn these things, and they've sweated in them.” [Participant 14]

“ ...consumer ignorance/dis-interest...There is the risk of certain consumers feeling the use of reused goods discomfoting ”. [Participant 10]

“So I think the biggest cost would be how consumers view me collaborating with a sort of new clothing manufacturing business, as many of my target market customers don't support these retailers and are very anti-supporting these retailers. So they might become less loyal as they feel I'm losing part of my sustainability aspect, by actually partnering with something that they do not support”. [Participant 6]

“Yeah, so obviously, the risk is manufacturing something that consumers do not want. Very often I buy clothing items that don't sell because consumers aren't interested in the fashion anymore”. [Participant 6]

“You have to take into consideration what is the image of your brand and how much does the target market engage in that? How much would it excite them to have an entire catalogue of that?” [Participant 7]

“...I have a risk of maybe losing some clients...you do get that one or two clients, that would be like, okay, where was this made? Where does this come from?”. [Participant 13]

“Although it's not secondhand off the person, and while you might have washed it, but it's that mental aspect to it, that how does the person feel towards it?” [Participant 7]

“And if people don't react as positively to it as you think, there is a bit of a financial risk...if you start to advertise reused and recycled garments, some people might not really want to see that associated with your brand and maybe it could devalue the brand”. [Participant 14]

Initial investment

Participants identified that the initial cost of investing in a CLSC could present a risk of adopting the activities:

“Yeah, I think just facilitating the process, and the logistics of getting the product, from the customers to the business, that would be the cost and also getting the machinery and the equipment that I would need to use in order to remanufacture and repurpose some of the items that I will be getting from the people”. [Participant 5]

“Risks would be financial. Set up costs but are worth it in the long run”. [Participant 9]

“...the wastage of resources in the acquisition of vehicles or staff to collect the recycled fashion products”. [Participant 10]

“You have to make things as easy as possible for consumers. So putting the infrastructure in place to try and collect all this clothing might end up being like a huge loss to the company, you

know, and might not be much benefit at all in the long run...It does cost a lot of money. So trying to be too sustainable, in the start, might make you kill your business before you can even grow it to a point where you can be sustainable and do things the way that you really want to do”.

[Participant 7]

“I mean, the financial risk is we obviously want to try and set this up, because it will take a bit to get it going and to set up the whole model...And when you try to incorporate your courier charges and things like that, especially with us being mainly online based, your courier costs and things like that could sort of almost price you a bit out of it in that regard, which is unfortunate”. [Participant 14]

“There will be costs associated to this. Moving products from A to B would come at a cost. People to sort out the garments would also be a cost involved. The risks involved would be...lack of knowledge with textiles in the sorting process, as well as the remanufacturing process”.

[Participant 11]

6.8. Research objective six: To evaluate support for the activities of closed-loop supply chain management systems from relevant stakeholders

Using this objective, the researcher aimed to identify the most suitable CLSCM activities for the South African market. The participating SMMEs clarified the activities that they found could be more beneficial to their businesses. The non-profit organisation also communicated those that would suit the South African operating environment. The potential limitations of adopting CLSCM activities as SMMEs operating in an African developing country were also highlighted. Participants also provided recommendations to assist in the widespread adoption of CLCM activities. These were organised into Theme four.

6.8.1. Theme four: Most suitable activities for the South African market

The respondents selected suitable recovery methods for SMMEs:

“So reusing or remanufacturing, I think, would be more of a benefit to a brand, like myself.”

[Participant 1]

“Recycling would be ideal for me, as I am able to use, for example, t-shirt yarn or materials that might be considered to be of no use and then make good use of them”. [Participant 2]

“At the moment, I would definitely say recycling and reuse. Only because they are so much easier to manage because reuse is, ‘Oh here is the bag’, and you quickly do something else to it or patch it up or whatever else you want to do. I think I would be able to use all of them. It definitely depends on how, but the easiest one would definitely be reuse”. [Participant 3]

“I would say it would be a mixture of reusing and recycling. Recycling of a garment just so that it is not going to waste and it can be used in different means. Reusing just because I feel that reused clothing will definitely become a lot more popular than it is now as people are more aware of sustainability and how much waste clothing is creating. Remanufacturing is also a good alternative but for us we wouldn’t be able to do that unless we had our own CMTs remanufacturing it”. [Participant 4]

“I think at the moment, the cheaper one for me would be reuse, because that will mean that I won't have to remanufacture or repurpose. It's just reuse. So you get it from the customer and then you then resell it to another customer. So for me, if I was to do it today, that will definitely be the one because it will be much easier to manage”. [Participant 5]

“I think it would definitely be remanufacturing of clothing items, because I feel like there are so many good quality materials out there that you can get, but that might not be in the form of the garment that someone would like, and so you could transform it to what their needs are”.
[Participant 6]

“I think maybe more the reusing of material. So maybe they could take apart old shirts and reuse the cotton to make new shirts, so the product is practically new. It's just like reclaimed cotton”.
[Participant 7]

“Recycling or remanufacturing, because the set up costs are minimal”. [Participant 9]

“I would opt to remanufacture used fashion into new fashion. It would take less effort and would be more profitable in the long run...and maximised use of old fashion into new”. [Participant 10]

“Yeah, look, definitely recycle, because we have a lot of clothing that goes into landfill, and remanufacturing. Those two, 100%. I mean all three, actually, yeah, but I think recycling is a big thing, because we do have a lot of waste”. [Participant 11]

“...I guess getting the people [consumers] more involved”. [Participant 12]

“I don't know if I'll call it remanufacturing. But maybe just reworking some of the items...But after what we've been talking about, I've also been thinking maybe I could incorporate asking some of my clients to also maybe do an exchange of clothing. Let's say they have an item that they don't want any more, but they see an item on my page that they like, maybe we can do an exchange”. [Participant 13]

“Reuse or remanufacture. I did sort of like both of them. I think the remanufacture, as I said, taking and bringing them back and try to see how we can basically remanufacture the products to manufacture something else. And also from the reuse side...the collecting of the garments, and then we can look at going the donation route...or going the retail route to a different market or something like that”. [Participant 14]

In addition to recognising suitable CLSCM activities for their businesses, participants provided both limitations and recommendations. These are divided into two categories which are summarised in **Table 6.5**.

Table 6.5: Limitations and recommendations for adoption

Category	Code
1. Limitations	<ul style="list-style-type: none"> - Size of business - High costs - Limited time and resources - Supplier relationship management - Limited control of supply chain processes
2. Recommendations	<ul style="list-style-type: none"> - Attention to detail - Stakeholder support - Educate and engage consumers - Transparency - Target market for circular activities

6.8.1.1. Category one: Limitations

In order to determine the extent to which the identified CLSC recovery methods would be adopted by participants, the researcher needed to determine if there would be any additional limitations that might hinder the process. This section of the data analysis recognises themes that occurred frequently, throughout the interviews, as the representatives gave responses to the interview questions.

Size of business

The sizes of the businesses of the SMME retailers was consistently referenced as a limitation throughout the interviews:

“...If it’s a big company that approaches this project, it might take off a bit better than my business because it’s still small, at the moment”. [Participant 1]

“At the moment my business is very small. It is a team of two people and one part-time person, who is hardly there”. [Participant 3]

“...but the bigger you go I guess the easier it becomes...” [Participant 1]

High Costs

Participants consistently referred to the high costs associated with the activities of CLSCM:

“Unfortunately it takes money at this time. We would like it to be free and we would like it to be cheap, but that is not what it is looking like at the moment”. [Participant 1]

“A risk would be it’s expensive. A risk would definitely be that as much as we want to implement all these things and in as much as that is where things should be headed, not everyone can afford ethically sourced clothing because there is a price tag that is attached to it. So you have to strategise basically and be careful in how you implement what you implement and make sure that the cost of this entire picture enables an ordinary person to be able to purchase as H&M is doing. They are pretty affordable. So that is the only risk I can see from a start-up point of view...” [Participant 1]

“...and just increase costs in terms of what we are going to be doing with the garments after that. If we aren’t re-purposing it, if we are having to recycle it or redistribute it then there would be extra costs involved in that”. [Participant 4]

“It might be quite costly in terms of logistics”. [Participant 4]

“And in order for us to be completely sustainable, we would need to import fabric directly and obviously that comes with high costs and minimum order quantities. And for a smaller business, it is quite hard, obviously, to bear those costs and import sustainable fabrics directly”
[Participant 4]

“...some form of startup capital to get it going because it is gonna take a bit to get going”.
[Participant 14]

Limited time and resources

Participants agreed that time and resources would be potential limitations for adoption. This appeared consistently throughout the interviews:

“...but from a start-up point of view, my biggest risk would be finances”. [Participant 1]

“For smaller brands, this step of the loop is most challenging due to logistics and restrictions, because SMMEs have smaller teams. I do feel, sometimes, the logistics kind of holds us back from being able to do this as we are so focused on manufacturing and trying to advertise and doing so many other things, that it does slightly get lost, but once the processes are set in place then it would be a bit easier”. [Participant 4]

“This needs dedication and time really...” [Participant 2]

“Just because SMMEs and companies like ourselves have smaller teams and obviously our time is very limited so any help in getting this closed loop process going would definitely allow us to do it more often”. [Participant 4]

“The time [it] will take to sell them is not covering the cost of rent”. [Participant 8]

“As you try and adopt something like this, it's gonna take a lot of time. It's gonna take a lot to get going. And that's also a risk where your time could have been spent on something else”.
[Participant 14]

“Because right now, I'm working one by one. But if I had to commission people to help me do this on a bigger scale, obviously, that margin would get bigger and the risk would be bigger”.
[Participant 13]

“ But at the moment, obviously, that requires like a lot of capital, a lot of investment...”
[Participant 7]

“How long will it be before you start getting back whatever you put in? Does the company, at this stage, as a small business, have the resources to put into that? Whereas bigger businesses, with millions of rands and stuff would be able to put the infrastructure in place, and then reap the rewards later, because, you know, they have that money to throw around”. [Participant 7]

“Because at the moment, obviously, our business doesn't have the capacity to go and recycle clothing or that sort of stuff”. [Participant 7]

“The shops are small, the rent is very high”. [Participant 8]

Supplier relationship management

While relationships with suppliers can be limited for SMME retailers, their management can have an impact on how they successfully and seamlessly adopt CLSCM activities:

“At the moment I don't have much of a relationship with them [suppliers], but as time goes on I can imagine that those relationships will be there. So you have to walk in and be in complete control of whatever is happening and communicate with them and say, ‘This is what I want and this is how I want it done’, and if they don't meet our expectations and sustainable industry standards then its bye and move on to the next one. For a lot of emerging people it's kind of

tedious because how many companies out there are actually ethical?” [Participant 3]

“I know that we first hand felt that that we wanted to be as sustainable as possible, but we were quite limited with our fabric suppliers and our raw materials”. [Participant 4]

Limited control of supply chain processes

Some of the participants mentioned that due to the sizes of their businesses, they do not have control over all their supply chain processes, particularly those conducted by their partners. This can affect their ability to be more sustainable. Participants further informed of the limited application of ethical practices by suppliers, which further compromise their sustainability efforts. However, Participant 11 expressed that SMME retailers do have control to decide who they partner with, in comparison to larger retailers:

“As we carry on we would obviously like to be in complete control of our supply chains, of our processes and plant our own cotton and actually be in control of the beginning right to the end of the entire process, and that is my biggest dream, but at the moment here we are”. [Participant 3]

“For a lot of emerging people it’s kind of tedious because how many companies out there are actually ethical? Like for me, I remember I was trying to find a fabric supplier that is ethical and it is the hardest thing, just to find a fabric supplier that is ethical and they are there but it’s like why can’t I just walk into a shop and find what I want and it be that simple”. [Participant 3]

“Just from our past experience as the retailer, we kind of feel that we do drive the sustainability side more than our manufacturers and a lot of our stakeholders and partners aren’t as aware of sustainability as we are. One of our manufacturers often tries to use plastic to package the individual garments and we keep trying to tell them and make sure that they are aware that we

don't need any of the plastic. So I do feel like as a retailer we kind of have to drive the sustainability and it is less so from our partners and manufacturing partners". [Participant 4]

"For us, reusing is quite hard for us. Not necessarily selling secondhand products but more re-purposing it, just because we outsource a manufacturer. So unless we have our own CMTs that work directly for us, they won't be as accepting to the reusing or re-purposing of garments, as they can make a lot more money from doing a full production run". [Participant 4]

"At the moment, there is not a great deal of the supply chain within the South African borders because, if you look at it, there is a lot of outsourcing that happens in South Africa. So at the moment, you get South Africa adhering to the standards of other countries and how they run their businesses." [Participant 3]

"I definitely think there would be some benefits, but I think for us to be able to do that we would need CMTs working for us directly, just so we can have more control over how they do remanufacture. Because obviously with remanufacturing, if our customers are returning stock and we are remanufacturing it, then each garment will be quite different from the next one, as there might be a hole on the sleeve on the one and it means we must be replacing the sleeve and the next one has a defect on the neck of the garment. So unless we have our own CMTs handling it, I feel it would be quite hard outsourcing it to other CMTs". [Participant 4]

"I think firstly, obviously willing suppliers. So suppliers that are able to assist with this model". [Participant 14]

"We are not manufacturing..." [Participant 8]

"I would like to flip that around and say that I do think that SMEs actually have a lot of power, and I think that they have the choice, you know? They can choose to support sustainable sort of

suppliers, because they make the decisions. Unfortunately, at a bigger retail, the decision is very top heavy, so if it doesn't suit top management, it's never going to work. But I think that the smaller SMEs, they have the power to actually change the mindset of the consumer. They also have the power to support ethical and sustainable suppliers...I think the power has shifted to the smaller SMEs. They need to understand their power". [Participant 11]

6.8.1.2. Category two: Recommendations

Participants provided recommendations for how CLSCM activities can be adopted by SMME retailers and consumers in South Africa. These recommendations included quality management, financial support and collaborations.

Attention to detail

Participants identified attention to detail as a focal point for successfully adopting CLSCM activities. This included paying attention to the end-to-end processes in the supply chain and maintaining a quality end-product:

"You have to be very strict and you have to put every single partner or stakeholder under a microscope... Wherever I might be in the supply chain, I have to make sure that from where my fabric is sourced, how they grow that fabric, how it is transported, who makes it... the entire thing has to be put under a microscope. It makes it kind of tedious cause I was also reading up, 'What do you have to do to make sure that your entire supply chain is clean and that you can proudly say to your consumer that my product is ethically sourced and I have an ethical brand?', and it involves putting industry processes or the supply chain under a microscope". [Participant 3]

“It depends on how you package it and sell it. I think the response would be positive ‘cause I know there are some cute little bags I have been making from reused or up-cycled fabric, where I was using old cushions or off-cuts and the response was good. So people were not like, ‘Euww, sis’[sic]. It just depends on how you put it across and how you sell it and is the fabric still quality and I know going forward my consumers would definitely be like. ‘Yay!’ as long as what I am presenting is of quality”. [Participant 3]

“I think consumers would be quite acceptable and quite keen on the idea, especially if the used products are of good state and of good quality”. [Participant 4]

“...as long as it's something that is obviously good and that is stylish and that is good quality”. [Participant 13]

Stakeholder support

Stakeholder support, for example, from suppliers, government and larger retailers was proposed as necessary to assist SMME retailers to better execute CLSCM activities:

“I would say, especially for your small businesses and brands, it will be, I think, assistance with regards to economic assistance and more support with regards to your small businesses. To be more exposed. To obviously be able to trade at the same level as your big brands. For there not to be such a big gap because sometimes as a small brand it's hard to get it out there or it's hard to get it done”. [Participant 1]

“So if there’s a way for the gap to be closed with the small markets and small brands are able to work with the bigger brands so that the gap is closed. So then it would be much easier for your small brands, like myself, to consider taking part in such projects, as using those closed loop projects”. [Participant 1]

“It’s just a business owner sitting down and thinking, ‘Okay cool. This is what I have decided to go into. These are the people involved and how can I collaborate with these people and make sure that what the vision is can be implemented in the best way possible. So it is a mixture of government and private people coming together and saying, ‘Okay, how can we now do this together without it damaging the change?’” [Participant 3]

“I think maybe just encouraging collaborations, like with brands, and retailers, too, to work with businesses like myself in helping them to remanufacture and to recycle. I think it could be good for both parties. Just to kind of encourage that collaboration, because then we could all learn from each other. We could learn from the bigger retailers and they could also learn from us in terms of what the consumers are actually looking for”. [Participant 13]

“But in all of this, because I do create relationships with some of my suppliers, I think I’d also kind of bring this up to them just to let them know what other options they have if they don’t know about it”. [Participant 13]

“So obviously, SMEs the big thing there is funding. Do they have the capital to do this? So, and when I talk about support, specifically, I’m talking about support from government, because SMEs need to be encouraged. So if you’re telling them to show their interest, their transparency, to show their value chain, what support are we giving them? Are we telling them that they get percentages off on fabric? Tax? How do we support them?”. [Participant 11]

“I’d rather collaborate with a local, small scale business...” [Participant 12]

“I would say if it’s recycling or redistributing or donating it to people... If there were organisations or somewhere we could take our off-cuts or even our products that are returned to us. If there are certain organisations that are set up, that would make it helpful”. [Participant 4]

“I say it's to find manufacturers that incorporate that type of clothing. Even if we collect the clothes, and we can take it to maybe a manufacturer that can recycle the clothes for us, where it's not too expensive or too much effort, too much resources to go into... I feel like it's all dependent on suppliers to take on that role - that do they want to provide a service like that”. [Participant 7]

“I think what is needed is for large production and manufacturing companies, that reverse engineer the fashion items, should offer incentives and discount[s] on their remanufactured goods, as well as offer training about the closed-loop supply chain processes”. [Participant 10]

“Laws that encourage cheaper sourcing of equipment that will help aid this or lower taxes or strict regulations on international outsourcing would be great”. [Participant 9]

“A demand for change from the consumer and new laws that make it mandatory to participate in the activities of a closed loop supply chain”. [Participant 9]

“I think definitely training courses and funding would be necessary. Because I, for instance, would love to remanufacture clothes, but I do not have the necessary skills to sew and make new clothing items. So I think definitely training would be necessary and funding in order to cover the costs - the potential costs of not selling the items”. [Participant 6]

Participant 11, as country coordinator of a global non-profit organisation that supports the adoption of sustainable practices by supply chain stakeholders, explained the type of support their organisation could extend to SMMEs looking to adopt CLSCM activities:

“So, for instance, if an SME doesn't know how to put together a funding model, and how to talk about this, and in terms of their value chain, or even if they didn't understand what the value chain is, we have people in our team that can assist locally here. And then obviously, if we need to secure grants and funding, wherever we have a link, we can also look into that as well...we listen to what they want, and obviously each one is a different ask and no one size fits all. So they're kind of tailored to what the SME actually needs, and then we look for partners in South Africa that offer that assistance. So do we link them up with Cape Town Fashion Council, as an example? Do we put them into an incubator process? Do we find alternatives to fabric? So if they can't find sustainable fabric, do we look for the alternatives and give them a network? A database, that they can access... So that's really what we offer”. [Participant 11]

While Participant 12 had positive perceptions of collaborating with small businesses to facilitate the collection of used fashion, the participant explained that such a strategy would be compromised if larger retailers are involved and are not completely transparent about their operations:

“The risk would be if it came out that this brand I was collaborating with was using sweatshops or something, then it kind of obliterates what we're doing”. [Participant 12]

Educate and engage consumers

The importance of engaging and educating consumers was acknowledged as necessary for encouraging them to adopt the activities of CLSCM:

“So it was based on knowledge and that's why it's not as big yet in South Africa or Africa, as I would say, because not everyone is aware of the practices or worried about where it's from”. [Participant 1]

“Primarily I would think knowledge. Some knowledge needs to be out there with regards to who made your clothes and where do they come from, what are the conditions, whether people are working in proper conditions, whether they are abused, are they being overworked, do they have a say?”. [Participant 1]

“Educate. I think we just have to educate consumers. Industry experts will have to educate businesses and in turn businesses educate their consumers. There is no other way around it. The louder that industry is about it, the more it will become the norm for consumers”. [Participant 3]

“...but also I feel that it is quite important for SMMEs to educate their consumers about sustainability and being able to return and recycle and reuse”. [Participant 4]

“I think a whole campaign or way of educating our consumers would definitely need to be done in order for them to go through the effort of bringing the garments back, we would have to show them how it is helpful for the environment and for reducing waste”. [Participant 4]

“...just educating the consumers and trying to see if they would be willing to make the changes to their retailing habits, what they are buying, when they buy, how they buying, and just to

basically tell them about the model and why it is being done, how it works, and how it can benefit them". [Participant 14]

"I do think it is very much dependent on the age and education. For instance, the older generation weren't as educated on global warming, or the effects that you have on the environment, or waste and stuff, whereas, the younger generation, our generation that we grew up in, from a very young age we've been taught in school that all of our actions impact the environment". [Participant 7]

"I think more advertising and marketing would need to be done to raise awareness, followed by general informative meeting being held to educate people of the benefits of joining closed-loop supply chain activities". [Participant 10]

"Information is always key. I think consumers will appreciate the knowledge. I have found that people want to know about the manufacturing processes. Once they know, they want to shop better. This is the right approach". [Participant 11]

"Incentives. There must be something that they are getting from the process except for getting to live in a better place, because we are being environmental friendly. I think people want to get something from giving you their old clothes". [Participant 5]

"Well, I think consumers must be informed on their consumption behaviour and how the fashion industry actually impacts the environment, and how the consumption behaviour can create more sustainability and the support of ethical companies can actually improve their living conditions". [Participant 6]

"Educating our customers. Providing recycle options. Incentives for returns of used garments so they [are] remanufactured". [Participant 9]

Transparency

Based on their experience and attempts to engage with large retailers adopting CLSCM activities with the intention to ‘green-wash’, Participant 11 advised that transparency of all the processes involved in the system can encourage further acceptance by consumers:

“...that's why I can confidently say it's green washing...if you walked into the store, and if you had a poster and like an infographic that showed that this is the shirt that you could buy, but when you bring it back, this is how we spin out the fiber. This is how we repurpose it and this is what happens to produce, then you show a different garment, and maybe even in a section where all the garments in that section are repurposed. To me that is showing the whole process and then I can understand, “Oh, okay, now I'm going to support this brand, because I see what they're doing””. [Participant 11]

Target market for circular activities

In order to further explore the opportunities available to SMME fashion retailers to adopt CLSCM activities, it was necessary for stakeholders to identify whom to target. Some participants described the type of consumer that would be more likely to participate in the activities of CLSCM. While the responses were varied, a number of participants identified that young people would be more likely to participate in these activities, further motivating the selection of university students for the quantitative section of the study. In addition, some participants also highlighted that an educated and conscious consumer would be more open to participating in such activities. This also explains the researcher’s decision to select students from the University of KwaZulu-Natal, as a university that incorporates sustainability in its strategic plan, which is evident in the practical and scholarly efforts of its staff and students:

“...the younger generation definitely, and someone who is very environmentally focused and supports green initiatives. I think the reason for this would be obviously because they would like to show others their personality, so to sort of create a self perception and to show them how they support the initiatives to include the consumption of clothing into their lifestyles”. [Participant 6]

“But it's more those University educated, younger people are those who are more aware and more wanting to be involved in businesses that use sustainable practices”. [Participant 7]

“I think the more environmentally aware consumers would be more likely to support closed-loop supply chain initiatives as they are consciously purchasing from, and supporting companies and suppliers who are aware of the environmental footprint that the production of their fashion has on the environment and atmosphere with regards to pollution, emissions, waste, and water contamination caused by production, along with employee working standards and general overall outcomes that are experienced by the fashion production and supply processes”.
[Participant 10]

“Women. I think either like a lot of older women, especially like in the Western Cape and stuff, it's something very close to their heart and trendy, but I think the Gen Z's would jump on board quickly...Well, it's quite popular, and it's something that they are almost vigilant about gate-keeping you know, like, the accountability of “Are you being sustainable?”, “Are you being woke?”. That kind of thing. I think they put in a lot of thought, even into how they dress. Yes. So they will jump on board”. [Participant 12]

“I think it's just basically all age groups, maybe more the young people”. [Participant 13]

“I think obviously, the educated consumer that knows about closed-loop supply chains and how they work. I also think the consumer would need to be fairly open minded on the matter and not someone who is going to shut down that idea straight away and say, “No, I only buy new

clothing or I only buy new items". Educated, open minded consumers... Probably a consumer that understands the need for change and the need for sustainability in our fashion industry".
[Participant 14]

"A conscious consumer. They understand that their shopping habit has a direct effect on the fashion value chain. They care for the environment and they care for the people that make our clothing...I think your Gen Z and your Millennials are early adopters. And they certainly are more interested in the value chain and they're more interested in sustainable fashion. I think in mature markets, they actually just don't care. For them, it's just a point of let me buy what's affordable, what looks good, what feels good, or at any price, if they're not price sensitive. Do they really care about the fashion value chain? Do they really care about all of that stuff? Not all of them do". [Participant 11]

"...you have to have a fair understanding of what's happening on the planet. And you have to have a clear understanding of what's happening in the human aspect of child labour, slave labour, and the people that are making materials. So education and access to information is fundamental. Because those people that are driving sustainability... they care about this, and that access comes from education by seeing stuff, you know, reading things online, and that's important". [Participant 11]

6.9. Conclusion

SMME participants provided insight into their current sustainability practices. They showed that they were familiar with the practices of CLSCM, despite not all having adopted them. Participants also provided detail of the ethical consumption habits of consumers, with particular insights given on the habits of young people. The accountability of SMME fashion retailers, regarding how their consumers dispose of their products, was also explored. While the responses were varied, they gave a balanced impression of the possible perceptions of other SMME stakeholders in South Africa. Representatives further provided advantages of circularity. These

included financial benefits, opportunities for innovation and to achieve a competitive advantage. However, there were some risks that were identified. These were related to the product recovery methods and to the product collection initiatives. Despite recognising potential risks of adoption, all participants highlighted CLSCM activities that would be most suitable for their businesses or for adoption in the South African market. The participants provided additional limitations of adopting CLSCM activities. These were mainly associated with the sizes of the businesses of SMME retailers and the country they are operating in. Recommendations were also given to support SMME fashion retailers in their adoption of CLSCM activities in South Africa. Some participants further highlighted that young and educated consumers would be more likely to participate in the activities and would, as a result, be the most ideal target market for them.

CHAPTER SEVEN: DISCUSSION OF FINDINGS

7.1. Introduction

The previous two chapters presented the empirical findings and analyses of the study. A discussion of the findings from both Chapters Five and Six is given in Chapter Seven. Chapter Seven further offers insight into the contribution the study's findings make to the literature. For a systematic approach to be observed, these discussions were organised according to the research objectives of the study.

7.2. Overview of demographic and organisational profiles

The findings from both the quantitative and qualitative data represented the perspectives of two types of key stakeholders in CLSCM systems: the university students as consumers of fashion products, and the SMME fashion retailers. They also included perspectives from a CMT stakeholder that could potentially be involved in the remanufacturing of used fashion. Perspectives from an NPO that educates and campaigns against unsustainable practices in the global and South African fashion industries were also included to have a wider perception of the phenomenon. The consumers play two roles in circular systems. They act as suppliers of the used fashion products that are needed for maintaining the processes of these regenerative systems. They also act as consumers of the recovered products of CLSCM activities. University students were chosen due to their likely exposure to the topic of sustainability in their studies, and due to the discussions in literature by authors such as Liu and Hei (2021, p. 17) and Marques, Marques and Ferreira (2020, p. 2) that emphasise the growing interest that younger consumers have in participating in sustainable practices. With reference to the perceptions of multiple stakeholders, the study examined the potential and future opportunities for CLSCM activities to be coordinated and facilitated by SMME fashion retailers in South Africa.

7.2.1. Respondent profiles

The data analysed in Chapter Five were collected using questionnaires collected from 300 university students, who responded to the research instrument in their capacity as consumers of fashion products in South Africa. Data were accumulated from the University of KwaZulu-Natal, a top-rated, culturally and demographically diverse tertiary institution in South Africa (University of KwaZulu-Natal, 2017, p. 1-15). The findings indicated that there was a higher presence of a younger adult demographic (73.7% of males and 96% of females) between the ages of 18 and 24 years. This was compared with only 8.1% of males who were between the ages of 35 and 44 years and no females who were above the age of 34. This is consistent with Statistics South Africa's (2016, p. 42) evaluation of the initial ages at which students enrol for post-secondary education.

Due to the disparities in the University of KwaZulu-Natal's gender distribution, there was a significant difference in the percentages of women (67%) and men (33%) that participated. Collecting data from a tertiary institution inevitably meant that consumers who took part in the study were mostly studying towards either undergraduate or postgraduate qualifications. It cannot be concluded that all the findings of the study are generalisable to university students across the country, however, as one of the top universities in the country, the University of KwaZulu-Natal attracts students from different socio-economic groups (University of KwaZulu-Natal, 2017, p.15), similar to other educational institutions of this nature. This was evident in the total annual expenditures on fashion products. As a result, the opinions presented provide an insight into the diversity of university students, within South Africa, and the socio-economic disparities of a developing nation.

7.2.2. Participant profiles

The qualitative data presented in Chapter Six was gathered from fourteen participants. As the study was examining retailer facilitated CLSCM activities, twelve participants represented

twelve SMME fashion retailers. Three of these retailers sell vintage and secondhand fashion. The CMT was interviewed as a representative of internal supply chain stakeholders needed in the remanufacturing of fashion. The non-profit organisation was interviewed as an external stakeholder that has insights into the sustainability of the South African fashion industry, along with the operations of SMME retailers. The participants took part in the study in their capacity as stakeholders in an emerging economy in Africa. They also took part as stakeholders that include university students as part of their target markets, or stakeholders informed of the behaviours of this market. The organisational profiles of these stakeholders showed differences in their operations. For example, while Participant 1 is based in KwaZulu-Natal and caters to a largely working class female market looking for custom-made or ready-to-wear designs, Participant 4 is located in the Western Cape and has a lifestyle brand that caters to both male and female consumers between the ages of 18 and 35 years. Participant 11 is a country coordinator of a global NPO that campaigns for reform in the fashion industry. While the participants representing SMMEs were all owners of the businesses they were representing, some of them had additional roles, within their firms, ranging from designer to director. The diversity of the profiles of the participants' businesses was beneficial in terms of providing a perspective of the feasibility of CLSCM activities for varying businesses.

7.3. Research objective one: To assess the sustainability contributions of closed-loop supply chain management in the fashion industry

Sustainability is at the core of CLSCM and circular economies (Hvass, 2016, p. 85; Kumar and Kumar, 2013, p. 157; Ashby, 2018, p. 2). This is evident in literature and industry conversations from organisations such as the Ellen MacArthur Foundation (2013, p. 11) that states the sustainability benefits of circular practices. It is also evident in this study as the economic, social and environmental sustainability issues of the fashion industry are what motivated this research. As a result, sustainability formed the foundation of the research instruments, particularly those of participants in the qualitative study. Participants specifically explored the extent to which sustainability is adopted in the global and South African fashion industries. Participants highlighted that the adoption of sustainable practices was not widespread, particularly in

developing countries, however, there is noticeable interest in improving this. According to Participant 1, the adoption of sustainable methods is more prevalent in the USA and other developed countries, for example in Europe. Despite this, Ditty (2015, p. 16) explained that consumers in both developed and developing countries are now showing more interest in purchasing more sustainable products, and in holding supply chains more accountable for their practices. Participant 3 explained that global developments in sustainability will pressure South African stakeholders to apply similar practices. Participant 1 further expressed that SMME retailers were less inclined to adopt sustainable practices because their businesses had less impact on the environment, for example, than larger stakeholders. However, Fetter (2019, p. 154) warns that SMMEs should adopt sustainable practices as potential changes in regulations and in supply chain partner requirements could create a competitive need to do so. From Ditty's (2015, p. 16) research, it can also be assumed that changes in consumer behaviour could also put pressure for SMME retailers to adopt more sustainable practices, too, despite the sizes of their businesses. The theme of economic, environmental and social sustainability continued throughout the responses of the participants as they noted related benefits of adoption. This is also consistent with studies such as Hvass (2016, p. 81) and Govindan, Soleimani and Kannan (2015, p. 604) that highlight similar varying themes in the adoption of CLSCM activities.

7.4. Research objective two: To determine the extent to which product knowledge would impact the adoption of closed-loop supply chain management

This variable tests the level of familiarity and expertise with a product. These influence attitudes and purchase intentions. It was adapted in this research to determine consumer and SMME familiarity with the activities of CLSCM.

7.4.1. Consumer familiarity and expertise

In order to ascertain university student knowledge, the questionnaire probed the percentage of their annual expenditure that is spent on used fashion. This was useful for distinguishing current

practices that facilitate expertise with the products of CLSCs. The results showed that only 2% of males and 2% of females spent more than 50% of their total yearly overall budget on used fashion. Consumers also showed more familiarity and expertise with purchasing reused products than they did with remanufactured products and recycling their fashion products. Perspectives from the participants corroborated these results.

According to the representatives, consumers in the country have knowledge of used fashion, particularly secondhand or reused fashion, and have less expertise with recycling. This is evident in the literature that references the practices of secondhand product distribution by secondary markets in Africa (e.g. Tóta, 2015, p. 24). Participant 1, for example, explained that the expertise that the consumers have is seen in their private resell activities on social media and other platforms, such as Gumtree. Participant 4 specified that the purchasing of secondhand clothing is quite popular among young consumers, particularly those looking for vintage clothing. However, despite the interest in used fashion among young consumers, Participant 3 explained that older demographics have negative associations with used fashion. Participant 12 further argued that the familiarity with used fashion is largely owed to the economic vulnerability of many consumers in South Africa. This is consistent with studies such as Norris (2015, p. 185) and Tóta (2015, p. 24) that reference the distribution of used fashion in informal markets in Africa, to price-sensitive consumers.

Participants 7 and 13 reasoned that consumers were less familiar with the recycling of used fashion. However, Participant 11 argued that consumers in South Africa are familiar with remanufacturing and recycling due to emerging local brands that pursue such recovery methods. Participant 14 added that the limited familiarity is largely dependent on the age and education of the consumer. An investigation of current key stakeholders of circular systems in the fashion industry reveals that H&M is one of the industry's main pioneers of retailer facilitated CLSCM activities. Evidence of its target consumer base shows an existence of a mostly young female demographic in the low and middle class markets (Delirium, 2017, p. 2). This information substantiates the value of conducting the quantitative research with young, mostly female

consumers, who may initially represent a larger portion of the target market for CLSCM activities.

In order to determine their potential willingness to participate in product return initiatives, the researcher probed the disposal habits of consumers. The findings showed that students (82.1% females and 73.5% males) were more likely to donate their fashion than they were to throw it out. This implies that landfill waste generation of EOU products that are in a condition to be reused may not be as significant an issue, in an African emerging economy, as it is in developed countries. This supports Participant 8's argument that consumers in South Africa prefer to donate their used fashion to those in need. It is still essential to note that other research, such as Bick, Halsey and Ekenga (2018, p. 2) argues the existence of landfill waste from used fashion products in developing countries, with Brooks and Simon (2012, p. 1265) making particular reference to those in Sub-Saharan Africa. It could be argued that such waste mainly stems from the unsold products donated from developed countries, and might not be a reflection of how local consumers dispose of their own used fashion products.

In the absence of product knowledge, brand equity can influence adoption (Abbey et al., 2015, p. 490). A significant number of students (61.3%) agreed that purchasing from a brand that they perceived to be of high quality would make used fashion more attractive. Similarly, Participants 1 and 3 also declared that consumers in South Africa are more concerned with the quality, durability and brand of a product. The social and environmental consciousness of consumers can equally be an influencing factor. While Participants 2, 4, 6 and 12 explained that ethical consumption had a key role in their consumer bases' habits, quantitative insights showed that participating students were less motivated by the social and environmental impacts of the products they purchased, in comparison to the products' affordability and how the students viewed themselves wearing them. This is despite Participant 6's argument that Generations Y and Z consumers are more concerned with sustainability and ethical consumption, and are willing to pay extra to achieve this. These perspectives are similar to those from studies such as Wang (2017, p. 9). However, Brantemo, Carlstedt and Wilhelmsson (2020, p. 39) argues that, despite their interest in sustainability, Generation Z consumers are more likely to purchase

sustainable products if they are affordable. Similarly, Participant 11 added that ethical consumption is present in young people and students, particularly where there is transparency. The need for transparency of sustainable practices through reporting has also been emphasised in research (e.g. Egels-Zandén, Hulthén and Wulff, 2015, p. 3; Kozłowski, Searcy and Bardecki, 2015, p. 378), with Kim, Kim and Rothenburg (2020, p. 1-3) also expressing how consumers are increasing their demand for more transparent brands.

It was also necessary to establish the extent to which consumers have been exposed to information about CLSCM activities in South Africa's fashion industry. Only 32.3% of university students agreed that they had seen advertisements of such activities or had been exposed to information about them. In addition, only 33.7% of students noted that they were aware of retailers that conducted product return initiatives. This lack of exposure to such advertisements and initiatives reveals gaps in the marketing of CLSCM activities, and perhaps a limited appreciation of how to approach consumers in a CLSC system. These gaps have influenced consumer behaviour studies by authors, such as Wang et al. (2013, p. 867) and Abbey et al. (2015, p. 489). Such research can be used to establish marketing strategies that are suitable for creating awareness and encouraging consumer participation in CLSCM activities. While it was evident that a larger population of the sample of students had very limited exposure to information related to these systems, 73% expressed that they would be more likely to purchase the products of CLSCs if they were more informed. Moreover, 89% assumed that with more information they would likely participate in product return initiatives.

7.4.2. Participant familiarity and expertise

The researcher explored SMME retailer familiarity and expertise with CLSCM activities. Their current practices that support such activities were investigated. Although the findings showed that representatives believed that there were limited applications of sustainable supply chain practices locally, some of the participants claimed that they had already adopted sustainable strategies that aligned with their business practices. Some of these were related to CLSCM

activities. Participant 2 uses recycled materials in product designs, while Participants 1 and 3 ensure that there is limited fabric waste generated in their internal manufacturing processes. Participant 4 focuses on a more end-to-end approach to sustainability by engaging in strategic relationships with suppliers and outsourcing to small CMTs. This participant also stated that their business already had a long-term plan to adopt and coordinate the activities of CLSCs. As retailers of vintage and secondhand fashion, Participants 6, 12 and 13 participate in the reuse of fashion. Participant 10, as a retailer of new fashion, identified that their business also refurbishes fashion to distribute to secondary markets, while Participant 8 explained that their business avoids excess stock and donates where possible. The adoption of such practices, by these stakeholders, supports Ashby and Smith's (2014, p. 3) argument that small businesses are more flexible and strategically positioned to adopt environmentally and socially sustainable practices, based on the personal values and interests of their owners. Through their non-profit organisation, Participant 11 engages in sustainability activities through educating and engaging consumers, and supporting business.

As CLSCs require supply chain stakeholders and consumers to be accountable for the disposal of used fashion, the participants also discussed the extent to which their businesses should be held accountable for their consumers' disposal methods. While Participant 11 argued that business should be accountable, Participant 13 highlighted that most businesses have little concern about what happens to a product post-consumption. Participant 1 also explained that neither the consumer nor the retailer should be accountable for disposal practices. Participant 2 and 14, on the other hand, stated that there were limitations to what could be done about consumer disposal habits. However, they noted that they did attempt to educate consumers and encourage recycling. Participant 5 argued that if large companies are not held accountable, then it would be unfair to hold SMMEs accountable. Participant 3 suggested that although accountability was extremely important, legislation that supports it would influence more consideration for ethical disposal methods. As stated by Govindan, Soleimani and Kannan's (2015, p. 603), evidence of this can be seen in the disposal of electrical products in countries such as Japan and Canada, where laws have been enforced to support this. Participant 4 suggested that retailers should provide consumers with in-store options for disposal. Similarly, studies such as Chow and Li (2015, p. 233) argue that retailers are more strategically positioned to coordinate this due to the

convenience they offer to consumers. While the responses were varied, the findings do show some level of interest in facilitating used product collection initiatives.

7.5. Research objective three: To assess the extent to which perceived benefits would influence the adoption of closed-loop supply chain management activities

The researcher explored the perceived benefits of CLSCM activities that could potentially influence consumer and retailer adoption of the activities of these systems. Based on literature from studies such as Abbey et al. (2015, p. 488-491) and Wang et al. (2013, p. 871), and the findings of the empirical study, it can be deduced that the perceived benefits identified by both students and SMME retailers can be categorised as personal, economic, social and environmental.

7.5.1. Respondent perceived benefits

University students were provided with a list of possible benefits that they can derive from participating in the activities of CLSCs. A greater percentage of university students (77.3%) strongly agreed/agreed that used fashion products would be more affordable compared to new ones. A significant percentage of them (76%) also found that product initiatives would make it simpler for them to dispose of their used fashion more ethically, and as a result allow them to be more responsible. Students (62.6%) further considered the social and environmental contributions of product returns and purchasing recovered products as attractive features of CLSCs. In addition, 62.3% strongly agreed/agreed that the potential affordability for used luxury brands would be a benefit. However, only 39.3% of the university students strongly agreed/agreed that used fashion is trendy and unique. These results show that a significant number of university students do have positive associations with used fashion and with the activities of CLSCM. With most of the students characterised as either Generation Y or Z consumers, these findings are consistent with those identified in studies, such as Liu and Hei

(2021, p. 17) and Wang (2017, p. 9), that express that these cohorts are interested in sustainable practices.

7.5.2. Participant perceived benefits

Participants pointed out several benefits of CLSCM activities. These were categorised into benefits related to the product recovery methods and benefits related to the used product collection initiatives.

Participants 1, 3, 4, 6 and 12 identified opportunities for innovation in the recovery of used fashion. This included potentially creative ways to use dead stock and to extend the life-cycle of a product. Participants 1, 3, 5, 6, 7, 10 and 12 recognised the economic benefits, including those that can be derived from lowering costs through using fabric that already exists. Participants 3, 4, 5, 6, 7, 9 and 11 further highlighted the benefits that adopting CLSC practices could have towards enhancing the brand image and positioning. Participants 1, 2, 3, 4, 7 and 13 anticipated that their consumers would accept the activities of CLSCM, with particular reference made to remanufactured and reused products. Participant 3 claimed that CLSCM activities would appeal to a consumer's desire to be more responsible with their consumption, by providing them with convenient methods to achieve this. Additionally, social and environmental benefits of application were highlighted, particularly those regarding waste reduction and extending the life-cycles of products. Participants made specific reference to the benefits of playing their part when it comes to sustainability, particularly with reference to the environmental contributions of such initiatives. Providing consumers with a diverse catalogue was also identified as a potential benefit of recovering and redistributing products in the SMME retailers' stores. Participants 11 and 12 added that there are benefits of providing consumers with options to choose.

Product collection initiatives are essential to the front-end activities of CLSCM (Kumar and Kumar, 2013, p. 157). It is from this activity that these supply chains receive the used products to recycle, reuse or remanufacture. The quantities and quality of the products returned through

these initiatives inform the type of CLSC recovery and redistribution methods that will be adopted and the extent to which these supply chains will be successful. Participants 1, 3 and 10 acknowledged the corporate social responsibility opportunities of CLSCM. Participants 3 and 4 also identified the potential to extend supply chain networks and, as a result, create employment. With the negative impacts of the COVID-19 pandemic, for example, countries are entering a period where economies will need to be revived through the development of new, innovative and robust industries. Due to their role in the economy, McKinsey & Company (2020, p. 11) put forward that reviving the operations of SMMEs should be a concern for key industry stakeholders in South Africa, such as government. Similarly, Participant 13 expressed the financial strains their business has experienced as a result of the recent global pandemic. Enhancing economic activity through CLSCM activities will therefore be relevant to this challenge. These economic perceptions contradict Ndachengedzwa and Stecca's (2016, para. 9) argument that the redistribution of used fashion can challenge employment in the mainstream market. Participants further noted that incentives in the collection initiatives would be useful towards encouraging consumers to return their used fashion. In addition, as retailers of vintage and secondhand fashion, Participants 6, 12 and 13 identified the opportunities that can arise from collaborating with retailers of new fashion products to facilitate the collection of used fashion from consumers. These insights, from the perspectives of South African stakeholders are new, and, to the researcher's knowledge, have not yet been explored in the existing body of knowledge. Such collaborations can facilitate the development of mutually-beneficial relationships between primary and secondary fashion industry stakeholders in the country.

7.6. Research objective four: To analyse how perceived risks would affect the adoption of closed-loop supply chain management

The researcher needed to establish if there were any risks that the respondents and participants could specify that may compromise stakeholder ability to adopt CLSCM activities.

7.6.1. Respondent perceived risks

University students were provided with a variety of Likert scale statements related to the perceived risks of the products of CLSCM systems. The findings show that there were less negative associations with CLSCM activities than there were benefits. However, a larger percentage of students (40.4%) either strongly agreed/agreed that the quality of used fashion is always inferior to that of new products. In addition, only 14.7% of these consumers either strongly agreed/agreed that they would be uncomfortable knowing that someone else was wearing their used fashion. The high number of students that donate their used fashion corroborated this point. However, while 39.3% of students noted that used fashion was trendy and unique, only 12.3% either strongly agreed/agreed that used fashion is not trendy and is generally outdated.

Abbey et al. (2015, p. 490) indicate the presence of disgust as a consequence of the prior ownership of used fashion. As a result, a similar point was added to the Likert scale to test student perceptions related to this negative attribute. Only 7.3% of students either strongly agreed/agreed with this point. On the other hand, Participants 7, 10 and 14, for example, noted that consumers may have issues related to the prior ownership of certain fashion items. The participants mentioned words such as, *'it's that mental aspect to it'*, *'discomforting'*, and *'they've sweated in them'*, respectively, in reference to consumer perceptions. These perceptions echo Abbey et al.'s (2015, p. 490) findings that such uncertainty can exist among consumers.

The results of this section of the questionnaire reveal that students found there to be fewer disadvantages of used fashion. An earlier study by Velia, Valodia and Amisi (2006, p. 20) revealed that some consumers viewed the purchasing of secondhand fashion as an action that can compromise their social statuses. These findings differ from those of this study as only 4.6% of consumers either strongly agreed/agreed with this statement. However, it is necessary to point out that perceptions of used fashion may have also significantly changed since their study was published.

Significant differences in the perceived risks of males and females were identified in student opinions of the cleanliness and level of disgust associated with used fashion. These significant differences were also present in their opinions of the trendiness and outdated nature of used fashion and used fashion's ability to compromise the social statuses of the respondents. Results from a Kruskal-Wallis test revealed that significant differences in perceived risks do not exist among the various educational levels.

7.6.2. Participant perceived risks

While the participants detailed several benefits of adopting CLSCM activities, they assumed there were fewer risks of adoption. Similar to their perceived benefits, the perceived risks were categorised as those related to the recovery methods and end-products, and those related to the product collection initiatives.

Despite the benefits of product collection initiatives, Dissanayake and Sinha (2015) speculate that uncertainty regarding the types of products that will be collected and the amounts that will be collected can challenge product returns management and limit strategic planning. Similarly, Participants 1, 2, 6, 9 and 10 expressed that the quality and quantity of the products returned can pose a challenge. Participant 9 explained that receiving used products that would be too old to reprocess could be a challenge. In addition, Participant 10 argued that such a system would only be viable if the business could collect sufficient quantities of used fashion from consumers. Finally, Participant 6 noted that anticipating which used fashion items would sell and those that would not, could compromise the process.

Companies such as H&M offer financial incentives for product returns (Balch, 2013, para. 5). Although Participant 4 expressed that such incentives could increase consumer participation, they identified that these can be potentially costly and reduce profits. Participant 3 explained that an increase in the quantity of products returned can be particularly challenging if the business does not have comprehensive systems in place for reprocessing and redistribution. Participant 1

added that trust can become a problem in the quality management of returned products if consumers are financially motivated. Participant 6 shared similar perceptions as they noted that consumers might '*scam*' or '*overcharge*' for their used fashion. These perceptions bring additional insights into the challenges that SMME retailers could potentially face when adopting CLSCM activities in an African developing country.

Participants 8 and 9 further argued that certain circular practices could divert business from stakeholders. As a CMT stakeholder, Participant 9 emphasised that CLSC practices, such as the reuse of fashion, could reduce the quantities of fashion they need to manufacture. Through researchers, such as Govindan, Soleimani and Kannan (2015, p. 604), it has been argued that CLSCM activities are often adopted for the opportunities they present to extract value and generate profits from used products. However, a potential reduction in the need for new products could impact the profits of existing CMTs, as discussed by Participant 9. Participant 8 also put forward that CLSC activities, in which retailers of new fashion gain financially from the recovery of used fashion, could affect donations to those in need and affect the businesses of secondhand fashion. Such insights are often not evident in the body of knowledge, particularly regarding the socio-economic dynamics of Africa's developing countries that present unique needs.

Risks of product recovery were assessed. In the literature, Ramani and De Giovanni (2017, p. 1010) explain that cannibalisation of the sales of new products can occur if both new and recovered products are sold by a retailer. Stakeholders therefore need to encourage sales while avoiding cannibalisation (Reimann, Xiong and Zhou, 2019, p. 512). Participant 4 noted similar concerns. However, the reviewed literature showed that consumers of used fashion often already have intentions to purchase pre-owned fashion, reducing displacement or cannibalisation rates (Farfetch, 2019, p. 63-65). Participant 1 also insisted that their business has an objective to offer trendy products and the resale of recovered products would not compliment this. Moreover, the responses of students in the quantitative section of the study showed a limited association between used fashion products, and trend and uniqueness. Due to frequent changes in trends and styles in the fashion industry, product obsolescence can present a challenge for CLSCs if

returned products have reached the end of their life-cycles. As a result, establishing the optimal return window for online fashion products was explored by Difrancesco, Huchzermeier and Schröder (2017, p. 5-6). However, the commonly documented activities of the secondhand markets in Sub-Saharan Africa (e.g. Norris, 2015, p. 185; Tóta, 2015, p. 24) reveal potential limitations to these concerns.

Participants noted some additional risks. Participant 8, for example, expressed that there would be no space to sell both new and used fashion within their stores. A lack of space could, for example, present a risk of overcrowding a store in order to adopt CLSCM practices. This reveals the potential space limitations that SMME retailers could experience, as a result of the sizes of their businesses, that could inevitably influence the types of activities they can adopt. Participants 1, 4 and 13 added that a lack of quality management in the recovery process could compromise their brand positioning or present a risk to their businesses. Participants identified potential costs related to consumer responses to the products of CLSCs. Many of these concerns were related to the prior ownership of the used products and the extent to which reuse would be sanitary. As mentioned earlier, these sentiments have been communicated in other studies, such as Abbey et al. (2015, p. 490). Participants highlighted that consumers may question the decision to adopt CLSCM activities and how these relate to the brand, and this could cause the business to lose customers. Finally, Participants 5, 7, 9, 10 and 14 discussed the initial costs related to investing in CLSCM. Participant 10 added that resources may be misspent if the system is not successful. However, Participant 9 stated that the investment could reap rewards in the long run. These varying insights are necessary to add to the body of knowledge, as they present concerns of adoption that may impact the adoption rate by SMME retailers in an African developing country.

7.7. Research objective five: To determine how consumer frame of reference would impact closed-loop supply chain management adoption

Under this objective, attitudes, perceived behavioural norms and subjective norms were investigated. Their evaluation was based on their potential impact on intention to participate in the activities of CLSCM. This research objective sought to determine student social and environmental consciousness and attitudes. These were utilised to discover the extent to which university students felt they had control over their fashion purchasing and disposal habits. Questions linked to the subjective norms were used to investigate the extent that peers and family members have influence on respondent purchasing and disposal habits. It was necessary to study such influencing factors to establish any potential enablers and hindrances of student participation in the activities of CLSCM. It is assumed that since many of the university students are in the Generation Y and Z cohorts and are, as such, considered more likely to favour sustainable practices, such factors could impact the extent to which opportunities exist for the current and future adoption of CLSCM activities.

7.7.1. Respondent responses

Although only 2.8% of male students and 2.8% of female students identified the social and environmental impact of a product as a motivating factor for their purchasing decisions, their attitudes towards their ethical obligations in Section F of the study revealed an interest in consuming more responsibly. While only 48.3% either strongly agreed/agreed that they were concerned with how the brand treats society, its employees and the environment, 70% strongly agreed/agreed that consuming more ethically was something they were interested in pursuing, despite the opinions of those close to them. In addition, 65.3% of students either strongly agreed/agreed that they did have a responsibility to dispose of their used fashion more ethically. These findings are consistent with those of Wang (2017, p. 9) and Liu and Hei (2021, p. 17) as these authors refer to the interests that younger consumers have in sustainable practices. However, despite these favourable responses, Joy et al. (2012, p. 288) are of the opinion that

although consumers may acknowledge the benefits of being environmentally conscious, their purchasing and post-purchase decisions do not often reflect this.

The findings showed that a majority of students have full control of how they dispose of their fashion products (72.3%) and what fashion products they purchase (68.7%). This can mean that those interested in participating in the activities of CLSCM would have the independence to do so. However, the researcher probed further to see if there was any concern associated with the perceptions of the students' peers and family members. The findings revealed that only 13.7% of students either strongly agreed/agreed that they were concerned with how their peers and family members would view them if they wore used fashion. This contradicts earlier findings from Velia, Valodia and Amisi (2006, p. 20) of the informal trade of used clothes in Durban, which found that consumers were concerned with how they would be perceived by their relatives and friends if they were aware of the type of clothing items they wore. The majority of university students (67.7%) either strongly agreed/agreed that many of their peers and family members would approve of them participating in the product collection initiatives. Only 43.6% of them expressed that they would participate in the activities of CLSCM if their family members did the same. When analysing these results, it is also important to note Wang's (2017, p. 9) findings that Generation Y would be more influenced by peer pressure to purchase sustainable fashion products, as opposed to Generation Z.

7.8. Research objective six: To evaluate support for the activities of closed-loop supply chain management systems from relevant stakeholders

In light of the responses given for the variables (product and service knowledge, perceived benefits and risks, attitudes, perceived behavioural and subjective norms) provided in Wang et al.'s (2013, p. 873) study, the researcher evaluated respondent and participant support for the activities of CLSCM.

7.8.1. Respondent support

It was necessary to determine if there were any categories of used fashion (remanufactured/secondhand) that students were more likely to purchase. This was important for establishing if there would be a potential and future market for the end-products of CLSCs, along with establishing which product categories would be most preferable. This information could be especially useful for SMME retailers to incorporate in their strategic planning of which categories of products they would encourage consumers to return and the types of recovered products that would be most preferable to a consumer base in South Africa. The responses from students were again divided by their genders. The category for clothes was more popular among both genders (46.3% of females and 28.3% of males). Footwear was the least preferable category for female students (4%), while bags were the least preferable category for the male students. To substantiate their responses, students were asked which category of fashion products they would be less likely to purchase. Again responses (44.4% of males and 54.7% of females) showed remanufactured or secondhand footwear as the least desirable. This could, again, be associated with the assumed sanitary nature of used footwear.

University students were asked to detail, in a multiple response statement, the conditions that would encourage their participation in the front-end activities of CLSCM. The objective of this question was to provide SMME retailers with information that would guide the methods used to facilitate product returns. A common approach used by large retailers, such as H&M, is the use of financial incentives in the form of price discounts and coupons (Balch, 2013, para. 5). However, Ramaniah (2019, para. 7) explained that the media exposed uncertainty over the destinations of the products collected through such initiatives. For example, the literature (e.g. Bick, Halsey and Ekenga, 2018, p. 2) showed that a significant amount of used fashion products are collected and dumped into emerging markets, particularly in Sub-Saharan Africa. As a result, transparency is now especially essential for retailers that do not recover and redistribute the used fashion, they collect, within their own stores. This section of the study was, therefore, also designed to predict methods that may discourage consumers from participating in product return initiatives. The provision of financial incentives was found especially motivating by 62.7% of

female students and 58.6% of male students. Students (54.7% of females and 51.5% of males) further assumed that they would be more likely to participate in a used product collection initiative if it was with a charity store or hospice. This result was not surprising as a significant number of consumers had indicated that they preferred to donate their used fashion. Convenience was identified by 35.8% of females and 42.4% of males as a motivating factor. Transparency of where the proceeds from the product return initiatives would go was mentioned by 36.3% of females and 22.2% of males.

Students were asked to highlight circumstances that would encourage them to purchase remanufactured or secondhand fashion. Females noted that they would be encouraged by a convenient and clean environment for purchasing (61.7%). Others noted that they would prefer a remanufactured product (43.3%) and a returns policy that does not differ from that of a new product (35.8%). Similarly, male respondents indicated they would be encouraged by a convenient and clean environment (55.6%), a returns policy similar to that of new products (35.4%) and a remanufactured product (35.4%). The perceptions of a clean and convenient environment support Participant 3's explanation that consumers of used fashion often purchase from places that are unclean. Such situations may contribute to the negative connotations associated with used fashion. The university students were also asked to identify a source that they would more likely purchase recovered products from. Both male (47.5%) and females (55.7%) chose that they would prefer to purchase from a well-known (primary) retailer. Only 15.2% of male respondents (15.2%), compared to 4.4% of female respondents (4.4%) selected that they would prefer to purchase from a luxury brand. This emphasises the need for SMME retailers to establish their positioning as local pioneers of CLSCM.

To conclude, respondents were asked to identify the type of CLSC recovery and redistribution method that they thought would be most preferable to support. '*secondhand sold by (primary) retailer*' was selected by a majority of female respondents (33.3%), compared to male respondents (25.3%). Both male (24.2%) and female (31.3%) respondents selected '*remanufactured fashion sold by (primary) retailer*' as a second option. Male respondents (20.2%) chose '*recycling for use in different industries*' as their third most preferable option,

while female respondents (17.9%) chose ‘*secondhand sold by local secondhand store or charity store*’. Only 5.5% of male respondents and 12.1% of female respondents selected that they would not support any CLSC recovery and redistribution method. These responses show a stronger support for the reuse of fashion. However, it is necessary to consider that the students were more knowledgeable of this option, based on their responses about familiarity and expertise and the responses from the participants. The responses also show that consumers would be supportive of being provided with a diverse catalogue of both new and recovered products from a primary retailer. This is consistent with the perceptions provided by some of the participants of the qualitative study.

7.8.2. Participant support

The researcher asked participants to determine CLSC recovery and redistribution methods that would be most suitable for SMME retailers and their consumers. The responses are presented in **Table 7.1**.

Table 7.1. Most suitable closed-loop supply chain recovery and redistribution methods

Participant	Type of organisation	Location	Selected method
Participant 1	Custom-made and ready-to-wear designs	Durban	<i>“So reusing or remanufacturing, I think, would be more of a benefit to a brand, like myself.”</i>
Participant 2	Fashion and decor	Durban	<i>“Recycling would be ideal for me”</i>
Participant 3	Bespoke fashion	Durban	<i>“At the moment I would definitely say recycling and reuse. Only because they are so much easier to</i>

			<i>manage... ”</i>
Participant 4	Lifestyle apparel	Cape Town	<i>“I would say it would be a mixture of reusing and recycling”</i>
Participant 5	Women’s clothing	Rustenburg	<i>“I think at the moment, the cheaper one for me would be reuse... ”</i>
Participant 6	Secondhand clothing	Beaufort West	<i>“I think it would definitely be remanufacturing of clothing items”.</i>
Participant 7	Asian street-wear	Durban	<i>“I think maybe more the reusing of material”.</i>
Participant 8	Bohemian fashion	Cape Town	<i>“We are not manufacturing...I think it's great if you can recycle fabrics...”</i>
Participant 9	CMT manufacturer	Durban	<i>“Recycling or remanufacturing because the set up costs are minimal”.</i>
Participant 10	Clothing and footwear	Musina	<i>“I would opt to remanufacture used fashion into new fashion. It would take less effort and would be more profitable in the long run”.</i>
Participant 11	Non-profit organisation	Cape Town	<i>“...definitely recycle, because we have a lot of clothing that goes into landfill, and remanufacturing. Those two, 100%. I mean all three, actually, yeah. But I think recycling is a big thing, because we do have a lot of waste”</i>

Participant 12	Vintage clothing	Durban	<i>“...I guess getting the people [customers] more involved”.</i>
Participant 13	Vintage and secondhand clothing	Johannesburg	<i>“...maybe just reworking some of the items...”</i>
Participant 14	Active wear	Durban	<i>“Reuse or remanufacture. I did sort of like both of them”.</i>

The responses that the participants gave revealed that there were additional limitations to the types of recovery and redistribution methods that could be adopted and to the extent that SMME retailers could adopt CLSCM activities in a developing economy. Participants 1, 3 and 8 detailed limitations to do with the sizes of their businesses. This limitation consistently appeared in the responses of many participants throughout the interview processes. For example, Participant 1 had observed that the size of their business meant that their environmental impact was limited. Although Ashby and Smith (2014, p. 4) explain that the adoption of sustainable practices by SMMEs is often encouraged by the owner’s personal interest, Fetter (2019, p. 154) indicates that the modern environment demands that SMMEs adopt sustainable practices in order to be competitive.

Participant 8 also noted how the sizes of their stores limited the space they could use to also sell recovered fashion. Participants also predicted the high costs involved with administering CLSCM activities, including logistical costs. The general consensus was that such strategies require large financial resources due to the costs of facilitation. To substantiate this, Mura, Longo and Zanni’s (2020, p. 11-12) study of the adoption of circular practices by SMMEs in the Italian fashion industry, found the high costs of adoption as a limitation for such businesses. Participants also mentioned the limited time and resources that small businesses have as a limitation of adoption. According to Participants 1, 2, 4 and 13, human resources, for example, may not be as readily available to focus solely on advancing the use of CLSCM systems. Participants noted that due to this restriction in the number of staff, with each already having

multiple roles, incorporating these activities, as a small business, would compromise and put pressure on this resource. Participants 3 and 4 further assessed limitations in the relationships they currently have with their suppliers that may challenge the end-to-end adoption of CLSCM activities. In addition, the participants suggested that not having full control of all their supply chain processes could limit adoption, as current experiences with some suppliers showed less commitment, on their part, towards consistently utilising sustainable practices. Despite these limitations, Participant 11 argued that SMME retailers, due to their sizes, are more strategically positioned to adopt sustainable practices and to choose the types of stakeholders they would want to partner with, compared to larger organisations. Ashby and Smith (2014, p. 3) came to similar conclusions by stating that SMMEs often do not have shareholder pressure to solely focus on profits, allowing them the opportunity to adopt innovative and sustainable practices aligned with the founder's interests.

Although the participants all considered limitations of CLSCM, they each showed interest in the adoption of such a strategy. As a result, they provided recommendations for similar stakeholders to consider. Participants 3, 4 and 13 stated that attention to detail is very important when adopting CLSC practices. This was especially observed with regards to the quality of the packaging and presentation of recovered products. Participant 3 further suggested that in order to have an end-to-end approach to facilitating sustainable practices, such as this, it was necessary to pay attention to how every process in the supply chain was being conducted.

Participants identified a need for SMME retailers to receive support in order to better adopt CLSCM activities. Participants 1 and 11 highlighted financial support. Participant 1 explained that this is essential towards enabling SMME retailers to adopt CLSCM activities at the same level as larger brands. Participants further noted various stakeholders, with which SMME retailers can collaborate, which could provide support. Participant 1 identified collaborations with larger fashion brands, while Participant 12 preferred to collaborate with smaller businesses. Participant 3 recommended collaborations with government and other private stakeholders. Similarly, Participant 9 noted a need for legislation that supports the activities of circular systems. Participants 6 and 10 emphasised the needed for training to be provided through collaborations.

Participant 4 also recognised collaborations with organisations for the donation of products collected using the product return initiatives. However, Participant 12 warned against collaborating with large companies that are not transparent about the unsustainable practices in their supply chains, in an attempt to green-wash or present a false impression of their sustainability initiatives. The participant expressed that this could negatively impact their brand. Similarly, Kim, Kim and Rothenburg (2020, p. 1-3) emphasised the importance of transparency to the modern consumer. In addition, Participant 11 explained that the role of government is necessary to incentivise business and show them what rewards they can derive from being transparent. This role was previously discussed from the perspectives of Govindan, Soleimani and Kannan (2015, p. 603) who noted the roles of the governments of Canada, China, Japan and the USA in establishing laws to encourage the disposal of electrical goods. Similar laws may be required for fashion products, as well, due to the environmental effects they have throughout their life-cycles.

A general perspective among participants was the importance of engaging and educating consumers on the benefits of participating in sustainable practices and in CLSCs. Participant 9 mentioned that consumers need to be provided with options to recycle. Participant 5 and 9 noted the need to provide consumers with incentives to encourage their participation. Participant 2 specified engaging consumers via social media in order to encourage them to participate in the activities of CLSCs. Similarly, Participant 10 expressed the need for advertising and marketing. Despite studies such as Abbey et al. (2015, p. 489), this is an area that is yet to be studied in as much detail as in forward-driven supply chains. Participants 6, 7, 9 and 14 also reasoned that educating consumers about these practices would be necessary, with Participant 7 arguing that education about sustainable practices is what encourages young consumers to adopt such practices in comparison to older ones. Hvass (2016, p. 22) explains that limited awareness could hinder the success rate of CLSCM activities. In spite of the assumption that university students would have more insight into various sustainable practices, responses from students showed a lack of awareness of CLSCM. However, students noted that information was an important factor that could impact their perceptions and determine participation in CLSCM activities. Participant 11 added that this education should extend to the level of transparency that the business has about its CLSCM activities. The participant explained that in order for the consumer to fully

understand and appreciate the purpose of such a system, they need to be visibly informed about all the processes involved.

Participants also described the consumer that would be more likely to adopt CLSCM activities. Participants 6 and 10 concluded that they would attract an environmentally aware consumer. In addition, Participant 11 added that the consumers need to also be conscious about the social elements of the supply chain. Participants 6, 7, 11, 12 and 13 mentioned that young consumers would be more likely to participate. In reference to young environmentally aware consumers, Participant 6 emphasised that such a consumer would want to support CLSC initiatives as an extension of their personalities and to reveal their sustainable interests in their social circles. Participant 7 argued that CLSC initiatives would particularly appeal to young consumers who have a university education. Participant 12 further expressed that Generation Z consumers would be more keen, as they tend to hold stakeholders accountable for their practices, while Participant 14 stated that the consumer would need to be both open-minded and educated in order to adopt the practices. Participant 11 emphasised that Generation Y and Z consumers are '*early adopters*' and are more concerned with the supply chain and with sustainable fashion, in comparison to consumers in more mature markets. These latter opinions provide further motivation for the researcher's decision to study the perceptions of university students in order to establish potential and future opportunities for the adoption of CLSCM activities by SMME retailers.

7.9. Conclusion

To conclude, the findings from both the quantitative and qualitative data show that both respondents and participants were attracted to adopting the activities of CLSCM. Both gave the impression that the South African market is familiar with the redistribution of secondhand fashion. This is also evident in the body of literature that refers to the secondhand market's trade in developing countries in Africa. However, there was limited experience with other methods of recovery such as recycling. The SMME retailers further expressed that they were familiar with the practices of sustainable supply chains and had incorporated some of them within their

businesses. The research further revealed that both respondents and participants identified significant benefits of participating in CLSCM activities. While risks were highlighted, both stakeholders advised that they would be interested in adopting circular practices. Due to the market's familiarity with secondhand fashion, both participants and respondents deduced that the reuse of fashion would be their preferred recovery method. However, a substantial number of participants showed an added preference for the remanufacturing of fashion. Students also noted that they would prefer to purchase such products for reuse from a primary retailer, thus providing them with both new and recovered fashion. The participants highlighted limitations of SMME retailers adopting CLSCM activities due to the sizes of their businesses. However, they concluded by providing recommendations for how some of these limitations could be mitigated.

CHAPTER EIGHT: DECISION SUPPORT MODEL FOR SMME RETAILER ADOPTION OF CLOSED-LOOP SUPPLY CHAINS

8.1. Introduction

The previous chapter provided a discussion of the findings and analyses. These were arranged according to their contributions to research objectives one to six. Chapter Eight addresses research objective seven. With guidance from the review of literature and this study's qualitative and quantitative findings, a decision support model is developed to aid in the adoption of CLSCM activities facilitated by SMME retailers in South Africa, as a developing country in Africa. The chapter explores how the different steps of the model can be effectively used in the decision-making process.

8.2. Proposed model

Based on the findings of the exploratory research, the study proposes a decision support model. The key elements identified in the responses, provided by both the participants and respondents, offered a useful foundation for determining factors that may influence the adoption of CLSCM activities. As a result, fourteen steps were noted that can assist in the decision-making process. These are discussed below and illustrated in **Figure 8.1**:

Step one: Determine a problem with the current supply chain or establish an opportunity to adopt CLSCM activities

The model suggests that decision-makers should begin by identifying a problem or opportunity. This can be related to the social, economic or environmental impact of the business' current supply chain processes. For example, an identified environmental problem could be an increase

in waste or end-to-end pollution. An opportunity to adopt CLSCM, on the other hand, may, for example, be the potential to achieve a competitive advantage. Determining a problem or opportunity would allow SMME retailers to establish their reason for considering the adoption of CLSCM activities. This can then inform the decisions they make in the steps that follow.

Step two: Establish the social, economic and environmental objectives and benefits of pursuing the problem or opportunity

Maintaining the premise that a sustainable supply chain considers all three elements of the TBL, this step invites SMME retailers to regard these components when establishing the objectives and benefits of pursuing the identified problem or opportunity. Based on the findings of this study, economic objectives can include improving the image of the brand and diversifying the product and service offerings. The related benefit could be an increase in profits. Identified social objectives can relate to the creation of jobs through expanding supply chains, for example. Financially empowering the communities in which the business and its supply chain stakeholders operate may be a social benefit that can be derived from such an objective. SMME retailers may also consider environmental objectives such as product life-cycle expansion, which could result in a reduction in waste.

Step three: Evaluate if these objectives align with the business' brand, corporate culture, values and existing or future sustainability goals

Research (e.g. Carter and Rogers, 2008, p. 367-368), shows that in order to achieve a sustainable supply chain, there needs to be an alignment between an organisation's corporate culture, values and its strategies. The responses from the participants further highlight that alignment should also be related to factors such as the SMME retailer's brand image. Step three in the decision-making process considers all these factors. SMME retailers are therefore asked to consider if the identified problem or opportunity (Step one) and the related objectives and benefits (Step two) would correspond with current or future sustainability goals. In order to be

inclusive of both present and future goals, the latter is considered in this step as this study's findings demonstrate that some stakeholders may have sustainability goals that they regard as realistic only for the future. Such goals may better align with the decisions made in the previous steps. This enables decision-makers to think beyond what is currently feasible.

Step four: Identify an appropriate used product collection method

As the discussed CLSCs are enabled by used product returns facilitated by retailers, this step prompts SMME retailers to determine which collection methods would be suitable for their businesses. Since the study's findings show participants to be both optimistic and pessimistic about this CLSC activity, the model invites decision-makers to consider aspects such as the provision of incentives that encourage consumers to return their products, along with the expected quantities and quality of obtained products and their materials. Feedback from the participants shows that considering, the quantities, for example, may be useful towards determining the number of redistribution channels. Considering the materials, on the other, could be beneficial as these may inform on their quality and durability and influence the types of recovery methods that can be employed. Student responses also reveal that certain product categories, such as clothing, are more appealing than others, such as footwear. Identifying recovered product categories that would suit the market could then inform the types of products to accept in the collection activity. Therefore, this step allows SMME retailers and relevant stakeholders to review how the product collection would operate and to anticipate various aspects that would influence other processes. It is also necessary for SMME retailers to keep in mind their business' brand, corporate culture, values and existing or future sustainability goals as identified in Step three.

Step five: Explore a suitable recovery method(s) and the related (primary and/or secondary) redistribution channel(s)

After identifying the appropriate product collection method, an exploration of the recovery methods that are suitable for the decisions made in Step four is necessary. The model does not guide stakeholders towards specific recovery methods as it is understood that there are a wide range of combinations that may be considered here. While the study explored the reuse, remanufacturing and recycling of used fashion, other recovery methods may include the repair of used fashion and sharing in rental systems. The model therefore allows stakeholders to explore the recovery methods that would suit their businesses as identified in Step three and those that would suit their product collection initiatives as identified in Step four. These decisions would then inform the selected redistribution channels for the recovered goods. For example, SMME retailers may identify a need to participate in the collection of used products for recovery, but maintain that redistributing them within their primary stores may not currently align with their brands. As a result, identifying secondary redistribution channels, such as donating to charities or selling to consignment stores, may be highlighted as more suitable.

Step six: Identify current and/or additional supply chain stakeholders that may be required to effectively administer the selected activities

Once SMME retailers have determined the activities that they would like to consider adopting, they may identify the supply chain stakeholders that would be required to successfully facilitate them. These may be stakeholders that the retailer is currently partnered with, such as manufacturers that have remanufacturing capabilities. Where, for example, current partners are unable to participate, additional stakeholders may also be identified in this process.

Step seven: Are targeted consumers and relevant (current and potential) supply chain partners knowledgeable about the identified CLSCM activities and willing to participate?

After identifying all the stakeholders needed to facilitate the CLSCM activities, this step in the model asks SMME retailers to determine their familiarity and expertise with the practices. Both the quantitative and qualitative findings showed that familiarity and expertise may influence the types of activities that appeal to stakeholders and influence their willingness to participate in the related activities. However, the model does consider the possibilities of either an absence of knowledge or the presence of limited knowledge. While, existing social and environmental consciousness in the identified stakeholders can inform their interest in participating in CLSCM activities, Step 7.2 prompts SMME retailers to consider facilitating knowledge enhancing campaigns and activities. These will help inform and educate stakeholders about the adoption of circular systems. As suggested in the qualitative research, social media campaigns, for example, may be cost-effective and useful platforms for educating consumers. However, collaborations with NPOs and industry experts may be beneficial for informing internal supply chain stakeholders in a more technical manner.

Step eight: Are the required resources and capabilities present internally and in relevant supply chain partners?

SMME retailers can evaluate their internal capabilities and the availability of resources such as time, technologies, skills and finances that are required to facilitate the activities of CLSCs. They can also explore the capabilities and resources available in the supply chain stakeholders they have identified as needed for the adoption of the CLSCM activities under consideration. In the absence of such resources and capabilities, Step 8.2 recommends that stakeholders investigate the availability and accessibility of external resources that would improve these. This may include consulting NPOs and industry experts that may help to strategise and leverage skills. WISP, for instance, is an example of an initiative that attempts to bridge the gap between the resources that businesses currently have and those they require to successfully administer

circular practices (GreenCape, 2020, para. 1-2). The qualitative research also suggests that support can come in the form of collaborations with larger retailers or with similar sized businesses with corresponding sustainability objectives. However, based on responses from participants, it is necessary to ensure that the stakeholders the SMME retailers collaborate with are all transparent about their end-to-end supply chain practices.

Step nine: Would relationships with the identified existing and/or future internal supply chain stakeholders support the administration of the selected CLSCM activities?

Restricted relationships with supply chain stakeholders and the resulting inevitable lack of control over supply chain processes were identified by some SMME retailers as limitations of adoption. This step therefore allows SMME retailers to anticipate if their existing and future relationships with relevant stakeholders would support their successful coordination of CLSCM activities. Where there is uncertainty of this, Step 9.2 recommends that retailers mutually revisit these relationships with the identified stakeholders and determine commonalities in their objectives that can be beneficial to all involved.

Step ten: Does the macro-economic environment support the activities under consideration?

This step addresses the need for a presence of a supportive macro-economic environment that may be necessary to mitigate the limitations of operating as an SMME retailer in a developing African economy. Support can come from government or in the form of legislation that corresponds with the identified CLSCM activities. However, while the macro-economic environment can enable the seamless adoption of such systems, it can also hinder adoption. Aspects of developing countries that can have a negative impact include an absence of supporting legislation, high crime rates and unstable economic and political environments (Cant and Wild, 2013, p. 708- 709). Where SMME retailers and relevant stakeholders identify an environment that does not support CLSCM activities, the model suggests that they consider

consulting and engaging relevant industry experts and stakeholders that may assist, for example, in advocating for supporting legislation.

Step eleven: Are there additional risks and limitations of adopting the selected activities?

The model proceeds to invite SMME retailers and relevant stakeholders to identify additional risks and limitations that may affect the adoption of the activities they are considering. The qualitative research revealed a frequent reference to the limitations that result from the sizes of the businesses. Risks also included potential cannibalisation of sales of new products. In the presence of such concerns, the model recommends that stakeholders return to Step eight and evaluate if their supply chain's capabilities and resources could mitigate these. Where risks and limitations are considered too challenging to navigate, the model suggests that stakeholders return to Step four and begin the process of identifying new approaches that may be more appropriate.

Step twelve: Integrate with the relevant internal and external stakeholders to adopt the most feasible activities

After considering all aspects of implementing the desired activities, the model suggests that SMME retailers and all relevant stakeholders integrate to adopt the most feasible activities. Such collaborative efforts are required in order for all participating stakeholders to realise their individual objectives.

Step thirteen: Maintain end-to-end transparency of adopted activities

Transparency with supply chain partners is identified as an essential element of Carter and Rogers' (2008, p. 367) sustainable supply chain framework and a risk management strategy. The findings of the empirical and evidence from modifications in the CLSCM activities of large

retailers, such as H&M, further suggest that maintaining transparency, for example with consumers, about all processes involved is a necessary step for these modern sustainable supply chain systems.

Step fourteen: Monitor and evaluate performance

Monitoring and evaluating the performance of the CLSC is essential to ensure that the current operations are fulfilling the initial objectives of adopting them. This also ensures that they are still serving their purpose of addressing the initial problem or pursuing the identified opportunity. It is also necessary to consistently monitor and evaluate performance to determine areas that require adjustments or to detect potential risks developing in the system. This is particularly vital as research continues to expand and knowledge of the most effective methods of facilitation evolves. Stakeholders can revisit all the previous steps of the model in this process.

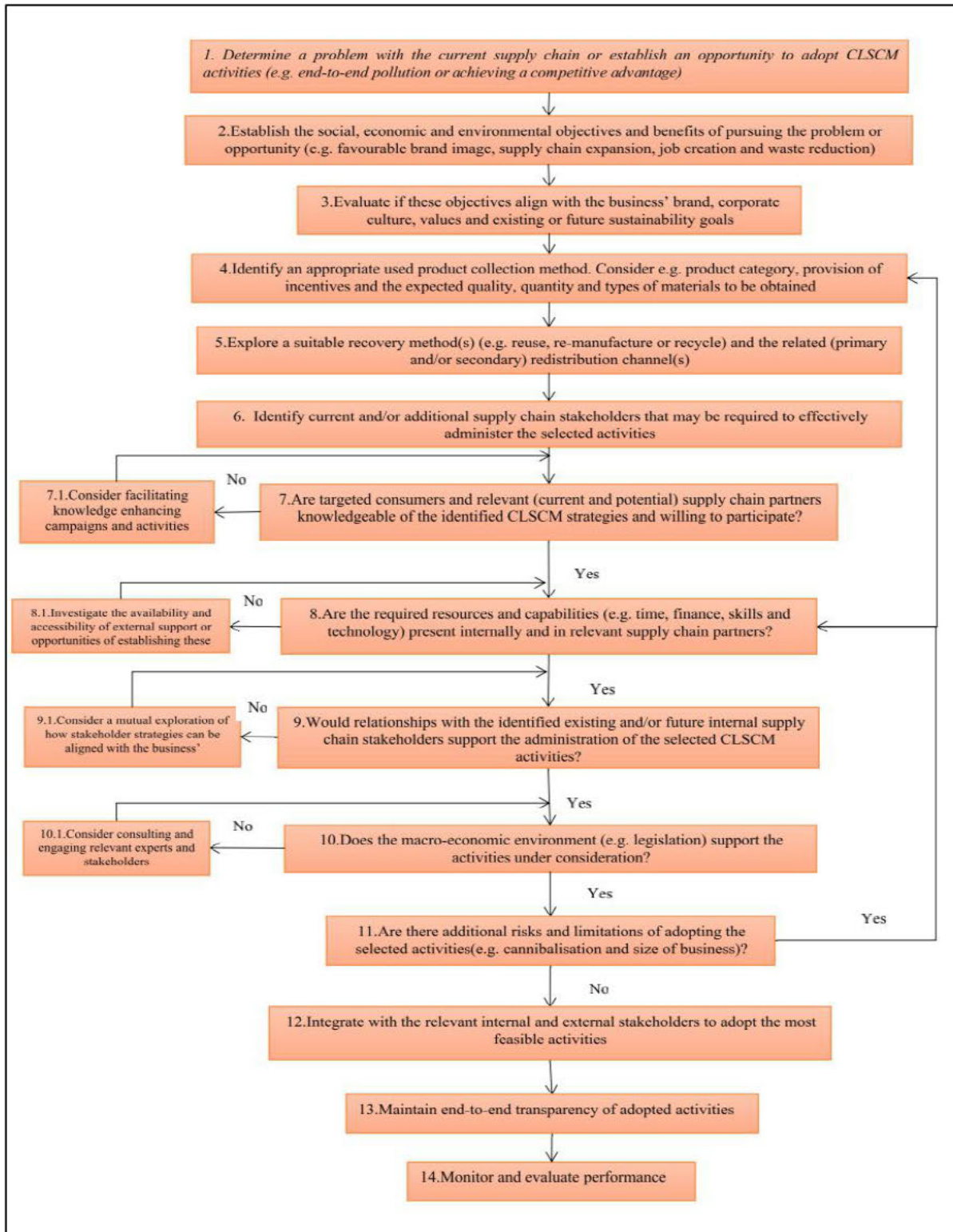


Figure 8.1: Decision support model for SMME retailer adoption of closed-loop fashion supply chains in South Africa

8.3. Contributions

With growing interest in the development of circular economies, the model proposed in this study presents a step-by-step guide for SMME fashion retailers to establish a sustainable position in the modern global operating environment. The development of such a model is not only consistent with South Africa's NDP, but it also echoes the United Nations' 2030 Agenda for Sustainable Development. While CLSCM activities significantly contribute to the facilitation of several of the seventeen SDGs, this study identifies their particular significance in relation to the twelfth SDG, Responsible Consumption and Production (United Nations, 2020, para. 1). A model that considers the generally unique business environments of SMMEs in South Africa, as a developing country, allows for a more inclusive approach. The model also suggests a collaborative approach towards addressing the sustainability issues of the fashion industry. The involvement of stakeholders that include consumers and NPOs reinforces the argument that this is a system-wide problem that requires a system-wide solution. Such suggested collaborations also help reduce the impact of the limitations that are consequences of the sizes of the SMMEs.

The model also contributes academically. The study identified two models (Wang et al., 2013, p. 873; Abbey et al., 2015, p. 492) that explore the perceptions of the products of CLSCs. However, while these assisted with the exploratory nature of this study, they only consider the perceptions of consumers and disregard other supply chain stakeholders. The existing, known applications of the models also do not explore the presence of additional recovery methods such as reuse and recycling. While the scope of this study was restricted to remanufacturing, recycling and reuse, the model developed in this study allows stakeholders to explore the adoption of other recovery approaches. It also enables SMME retailers to consider the methods they adopt in the used product collection initiatives and does not disregard the roles of the business' current corporate brands and strategies.

The consideration of elements that are known to affect the decision-making processes of SMME retailers in developing countries is another valuable contribution of the study. This includes

potentially unsuitable macro-economic environments and restricted relationships with supply chain stakeholders. In order to validate the model, the researcher suggests it be tested in future studies that determine the adoption of CLSCM activities in the fashion industries of other African developing countries.

8.4. Conclusion

The study proposes a fourteen step decision support model to aid in the development of SMME retailer facilitated CLSCs. The model considers the operating environments of these stakeholders and their supply chain partners. It further considers the limitations that may result from the sizes of these businesses. Each of the steps identified in the model allow the focal business to determine the feasibility of the selected activities to achieve circularity. The model contributes both industrially and academically. This includes an alignment with the United Nations' SDGs and provision of a more practical tool for decision-making. Unlike other models and theoretical frameworks, the suggested model considers the entire CLSC system and allows for a more detailed approach to decision-making.

CHAPTER NINE: CONCLUSION AND RECOMMENDATIONS

9.1. Introduction

The study began by introducing the problem statement that prompted this research. The research objectives guiding the study were then presented with reference to the theoretical framework used to design them. Chapters Two and Three proceeded to provide detailed literature reviews of the fashion industry supply chain, the modern practices of the industry that have led to the consideration of sustainable practices and the theory of sustainable supply chain management. To conclude, the use of sustainable supply chain practices by SMME retailers was examined, along with the characteristics of Generation Y and Z consumers who were the majority of the quantitative study's respondents. In Chapter Three, the literature review continued to give an account of CLSCM and its adoption in the fashion industry. The enablers and challenges of facilitating such systems were discussed. The review of the literature indicated that there are no studies that explore the adoption of CLSCM activities by SMME retailers in a developing market in Africa. This is despite the economic value of SMMEs to these countries. This was also the first identified CLSCM study that combined the perspectives of multiple African stakeholders, including university students, to assess the opportunities for adoption. From a review of literature, it was established that university students would be suitable for this study as they are more likely to be exposed to education on sustainable practices through their studies, and as most are also young consumers that are considered to have interest in adopting such practices.

The gap in literature prompted the present study. This exploratory research aimed to establish a foundation for further research into the adoption of CLSCM activities by SMME retailers on the continent. The nature of the research problem and objectives guided the type of research methods that were used in this study. Data were collected from both university students, as consumers of fashion products, and SMME retailers as coordinators of the activities. The findings of the study were presented and analysed in Chapters Five and Six. These findings were discussed in Chapter Seven and the conclusion was drawn that there are opportunities for CLSCM adoption in South

Africa, as an emerging market in Africa. Chapter Eight presented a decision support model for SMME retailer adoption of CLSCM activities. Chapter Nine concluded the study by summarising the research and presenting recommendations and limitations of the study.

9.2. Revisiting the research

The study explored the adoption of CLSCM by SMME retailers in South Africa. A review of literature showed a lack of research that investigates adoption by SMME retailers on the continent. It was insisted that this exclusion in the body of knowledge could prevent such stakeholders from benefiting from the practices of circular supply chain systems. It was also anticipated that research that considers the business size limitations of SMME retailers would be more valuable to these stakeholders. As no studies were identified that explored consumer perceptions of the activities of CLSCs, on the continent, it was deemed necessary to examine their opinions as key stakeholders of these supply chains.

A theoretical framework established by Wang et al. (2013, p. 873) was used to guide the study. While this framework had previously been used to determine perceptions of remanufactured products in the automotive industry, its variables were appropriate to the perceptions of both SMME retailers, the additional approached stakeholders, and the students. As a result, the framework was used to ascertain perceptions of the activities of these supply chains. The research objectives were designed to enable the researcher to establish if a market exists for CLSC activities and to then evaluate the recovery and redistribution methods that would be most suitable for adoption by an SMME retailer in South Africa.

The research design was guided by the research objectives of the study. A mixed method approach was employed for data collection. Perceptions from 300 university students were recorded using questionnaires that included both multiple-choice and Likert scale questions. In

addition, perceptions from fourteen participants representing twelve SMME retailers of either new or vintage and secondhand fashion, one CMT stakeholder that manufactures for SMME retailers, and one non-profit organisation that advocates for sustainability reform in the South African fashion industry, were recorded using eleven in-depth interviews and three written interviews. The quantitative data were analysed using the descriptive and inferential statistics functions of SPSS™ software. The researcher used NVivo™ and thematic analysis to analyse the transcribed data from the interviews. Quality control measures were observed to maintain the reliability and validity of the study. Ethical considerations were observed throughout the research.

Using these methods, the main objectives of the study were achieved. A combination of the perceptions of all stakeholders ensured a more holistic and comprehensive approach to understanding the role of CLSCM in these markets. The study's findings were integrated and a decision support, implementation model was devised for SMME retailer facilitated CLSCM activities in South Africa.

9.3. Conclusions

The conclusions of the study are organised according to the research objectives:

9.3.1. Research objective one: To assess the sustainability contributions of closed-loop supply chain management in the fashion industry

The study shows that sustainability is the foundation for scholarly and industry conversations about CLSCM and circular economies. The sustainability issues of the fashion industry supply chain, such as the use of child labour, the effects of the dumping of used fashion from developed countries into developing countries in Africa, along with the amount of post-consumption waste the industry generates motivate the exploration of solutions to these problems. While it is

understood that various social issues such as the use of child labour and the poor working conditions of factory workers cannot be immediately and directly resolved through the administration of CLSCs, it is understood that these types of supply chains can extend the logistics network, thereby increasing employment and the standards of living of those employed in the systems.

9.3.2. Research objective two: To determine the extent to which product knowledge would impact the adoption of closed-loop supply chain management

This research objective sought to determine respondent and participant knowledge of the products and services of CLSCs. The researcher tested both familiarity and expertise with the activities of retailer facilitated circular supply chains. The objective was to evaluate the extent to which existing knowledge would impact the adoption of CLSCM activities by SMME retailers in South Africa. All stakeholders demonstrated a level of familiarity with some of the activities of regenerative systems. The prevalence of the redistribution of secondhand fashion by secondary markets in South Africa was speculated as the main foundation of student familiarity and expertise. However, university students showed limited familiarity with primary retailer facilitated systems and with the recycling and remanufacturing of fashion. It was also found that brand equity and loyalty could contribute to consumer participation, more than social and environmental consciousness would. In addition, throwing away used fashion was not found to be a frequent option for the disposal of used fashion for consumers in South Africa. From the findings of both the qualitative and quantitative studies, it was found that consumers were more inclined to donate or keep their used fashion items. The findings showed that students lacked awareness of the activities of CLSCs, but that they were still keen to participate if they were provided with more information. Despite identifying a limited adoption of sustainable practices by fashion stakeholders in South Africa, participants did show familiarity and expertise with some practices of circular supply chains. SMME retailers also showed expertise with sustainable supply chain practices in their own businesses and an interest in participating in the disposal activities of consumers.

9.3.3. Research objective three: To assess the extent to which perceived benefits would influence the adoption of closed-loop supply chain management activities

This research objective evaluated the perceived benefits of adopting CLSCM activities. Both respondents and participants gave their perspectives. The benefits examined related to product collection initiatives, the administration of recovery methods and the redistribution of the end-products of CLSCs. The study evaluated three recovery methods: remanufacturing, reuse and recycling by secondary industries. As a result, student perspectives of recovered fashion were limited to remanufactured and reused (secondhand) products redistributed by the primary retailer, or by stakeholders in secondary markets. Recognising the benefits was essential in determining the extent of the influence they would have on the adoption of CLSCM activities. Students pointed out advantages such as the affordability of used fashion and the potential convenience that product collection initiatives would have with regards to enabling them to be more responsible with their consumption habits. By comparison, the SMME retailers and the additional stakeholders mentioned benefits such as opportunities to increase profits, lower operating costs through reprocessing existing fabrics, and to reduce the waste generated by SMME business' manufacturing activities. Responses revealed that stakeholders consider there to be several benefits of participating in the activities of CLSCM.

9.3.4. Research objective four: To analyse how perceived risks would affect the adoption of closed-loop supply chain management

The perceived risks of participation were investigated. The researcher aimed to identify any perceived potential risks that may hinder stakeholder adoption of CLSCM activities. Student responses showed that there were limited negative associations with the products of CLSCs. However, SMME retailers noted some risks associated with product collection initiatives and product recovery and redistribution. These included the high costs of offering financial incentives in exchange for used products and the potential cannibalisation of the sales of new products, where new and recovered products were sold in the same location. The researcher

concluded that both respondents and participants did not find there to be significant risks, in comparison with benefits.

9.3.5. Research objective five: To determine how consumer frame of reference would impact closed-loop supply chain management adoption

The students' personal frame of reference were evaluated based on purchase attitudes, subjective norms and perceived behavioural norms. The researcher aimed to investigate if these would impact their perceptions of participating in the activities of CLSCM. The findings showed that a majority of them believed that they were in control of their purchasing and disposal methods and that they were not influenced by the opinions of their peers and family members. The findings also showed a significant number of university students that believed they had a responsibility to dispose of their used fashion ethically and those that believed that their peers and family members would approve of them participating in used product return initiatives.

9.3.6. Research objective six: To evaluate support for the activities of closed-loop supply chain management systems from relevant stakeholders

With reference to the responses given by both respondents and participants, the study evaluated support for CLSCM activities. Both established preference for reuse strategies. The SMME retailers presented these as simpler to execute, while students appeared to prefer them due to their familiarity and expertise with them. Some participants also showed significant interest in the remanufacturing of fashion. University students additionally noted that secondhand or remanufactured clothing are more desirable categories to purchase from primary retailers. There was a general consensus that footwear would be the least desirable product category. Consumers also mentioned that being provided with financial incentives for their participation in the product collection initiatives would be preferable. The convenience of collection points was highlighted. However, students were still more inclined to donate their used fashion. They summarised

motivating factors for purchasing recovered fashion that included a convenient and clean shopping environment and a returns policy similar to that of new products.

In addition to identifying the recovery methods that would be most suitable for SMME retailers and their supply chain stakeholders, participants recognised limitations of adopting CLSCM activities. The limitations included the sizes of their business, limited time and resources and limited control of supply chain processes. The participants also provided recommendations for similar sized businesses to adopt CLSCM activities. These included maintaining the quality of the end-product and receiving external support, for example from the government. Collaborations with both large and small businesses was also favoured by participants. The type of consumer that would be more likely to participate in CLSCM activities was also identified.

From these findings, including existing sustainable supply chain strategies incorporated by the SMME retailers, the researcher deduced that opportunities for them to adopt CLSCM do exist, but these need to be tailored to cater to the unique conditions of South Africa, as an emerging market.

9.3.7. Research objective seven: To develop a model for closed-loop supply chain management adoption by SMME retailers in South Africa

The results from both the qualitative and quantitative research were integrated to propose a comprehensive model that encompasses the perceptions of both respondents and participants. The model that is proposed in this study considers the unique context of South Africa and was formulated to aid SMME retailers and their supply chain stakeholders to decide whether to and how to adopt CLSCM activities. The model presents fourteen steps that stakeholders can follow when developing their circular activities. Also, it takes into consideration the existence of both favourable and unfavourable conditions. The model suggests how stakeholders can navigate hindering factors and is intended for both academic and industry practitioners' use.

9.4. Recommendations

The recommendations of the study were based on the findings of the qualitative and quantitative research, and the literature reviewed:

- In order to conclude whether CLSCM would be appropriate for their businesses, SMME retailers should consider an initial evaluation of their corporate values, strategies and current product offerings to determine if these align with the practices of circular systems.
- More research that focuses on the adoption of CLSCM by SMME retailers, in African developing countries, should be conducted in order to provide stakeholders with the information they require to successfully facilitate these systems. In the absence of such literature, stakeholders can still refer to the best practices of SMME retailers in developing countries in other continents, as some of the challenges they encounter are similar to those encountered by stakeholders in the continent's emerging economies.
- Legislation that supports the collection, reprocessing, redistribution and ethical disposal of used fashion should be developed to encourage more adoption. The effectiveness of such legislation is seen in the disposal of electrical goods in countries such as Canada, Japan and China (Govindan, Soleimani and Kannan, 2015, p. 603). Legislation that supports circularity in the fashion industry can further assist in the management of the imported used fashion that Africa's developing countries are inundated with. This can present opportunities to reduce the waste generated from products that are not suitable for reuse and establish stakeholders in the supply chain that can reprocess and recover used fashion. Facilitating such systems on a large scale can position South Africa strategically in the global circular economy.

- SMME fashion stakeholders, in all aspects of the supply chain, can establish support systems that have missions to encourage the seamless adoption of CLSCM activities. Engaging all relevant supply chain stakeholders on the subject could allow SMME retailers to establish more collaborative and transparent relationships with upstream partners. Consequently, support systems that focus on engaging and educating supply chain stakeholders could facilitate higher consistency in the sustainable operations of suppliers. For additional support, SMME retailers and their partners can also engage with industry experts from non-profit organisations, such as the Fashion Revolution, the Ellen MacArthur Foundation and WISP. These organisations encourage circularity and sustainability in global supply chains.
- Where possible, SMME retailers can outsource their processes to smaller local suppliers that may be in a better position to develop more strategic, transparent and interpersonal relationships.
- In addition to conducting market research of their business' consumers, SMME retailers can engage with and educate their consumers about the benefits of participating in circular systems. As revealed in the findings, providing consumers with more information could be essential towards encouraging their participation.
- To improve the product collection processes, SMME retailers can investigate and highlight the incentives that may be fitting for their markets and their supply chains. Where financial incentives are not feasible, a business can appeal to consumer desire to be more socially and environmentally responsible with their product disposal. Information about the recovery processes that collected products will experience and the output of these processes may appeal to the market. Increasing transparency, in this activity, is now a focal point for H&M's garment collection initiatives (Jadezweni, 2020, para. 9). While H&M differs in size from SMME retailers, such a case study could provide insight into current practices that appeal to markets.

- Before initiating product returns, SMME retailers should establish the recovery methods they will perform for the various used products they will receive. Options can include donating a surplus of reusable fashion and sending products, that are not in a suitable condition to be remanufactured, to secondary industries for recycling. The retailers can also redistribute excess products for reuse to secondary markets. This will allow a more localised approach to maintaining the activities of these already established markets. Identifying these additional recovery methods and redistribution channels will reduce the possibility of SMME retailers collecting excess products that they do not have the capacity to reprocess and redistribute. In order to be sustainable, these activities should not only be socially and environmentally feasible, but they should be economically feasible for the SMME retailers and their supply chain partners.
- If redistributing recovered products, SMME retailers should advertise and package them in a manner that will appeal to consumers. While there was a fear of cannibalisation of sales, research does show that the markets for used fashion and new fashion can exist separately. As a result, advertising recovered fashion may allow SMME retailers to attract an additional consumer base.
- In order to reduce pressure on available resources, SMME retailers and their supply chain partners should carry out a gradual process for adoption. Short and long-term goals for application can be incorporated in a manner that is suitable for the business' limitations and current practices.

9.4.1. A model of closed-loop fashion supply chain adoption in South Africa

The review of literature, including the theories of Abbey et al. (2015, p. 492) and Wang et al. (2013, p. 873), along with the findings of this study and the implementation model developed and discussed in Chapter 8, were all used to develop a model that represents potential SMME retailer adoption and coordination of CLSCM activities in South Africa Africa. The model is illustrated in **Figure 9.1**.

The following variables and product and information flows are included in the model:

1st variable: Organisational culture, values and strategies. This variable was identified from responses from the SMME retailers and from Carter and Rogers' (2008, p. 368-369) theoretical framework for sustainable supply chain management. Research (e.g. Yurchynska and Serdiuk, 2018, p. 89) shows that the organisational values and strategies of SMMEs can be influenced by the owner's psychological factors such as their reasons for establishing their business. Factors to consider when reviewing this variable include corporate and supply chain stakeholder values and ethics. As seen in the findings, these can influence the seamless adoption of CLSCM activities. The organisation's social and environmental consciousness must also be evaluated as this can influence the level of accountability and responsibility it has regarding the disposal habits of its consumers. These can also be motivating factors for adoption. In addition, SMME retailers can examine the current role of sustainability in their business and decide if the performance of CLSCM activities would complement these. SMME retailers can also analyse if their brand images would align with the proposed recovery methods and redistribution channels.

2nd variable: Knowledge of CLSC practices. This variable was adapted from Wang et al.'s (2013, p. 873) theoretical framework. When evaluating this variable, SMME retailers can investigate internal familiarity and expertise with the practices of CLSCM. They can also evaluate stakeholder familiarity and expertise with such practices. This includes internal supply chain partners and consumers. In the same manner, SMME retailers can assess their familiarity

and expertise with the technologies required to efficiently and effectively recover value from used fashion products. Exposure and availability of education, from industry experts and other external sources, can also be investigated as support in the absence of knowledge.

3rd variable: Internal and external supply chain capabilities. SMME retailers can evaluate their internal capabilities and their external stakeholder capabilities regarding similar factors. Also, SMME retailers can determine the extent of their control over their supply chain processes and the types of relationships they maintain with their supply chain partners. This can enable more seamless adoption of CLSCM activities. Based on Carter and Rogers' (2008, p. 365-367) theoretical framework, SMME retailers should also evaluate their ability to facilitate supply chain transparency and risk management in order to aid the adoption of CLSCM in a dynamic environment.

4th variable: External support. This variable measures the presence of external support that may be necessary to mitigate the limitations of operating as an SMME in a developing African economy. Support in the form of legislation, governmental support, financial support, support from industry experts, consumer support and support from larger retailers and from NPOs can all be beneficial to an SMME retailer's seamless adoption of CLSCM activities. Studies using this model can assess the extent of these supportive systems.

5th variable: Consumer influencing factors. Consumer participation is essential to the operations of CLSCs. However, theories from Abbey et al. (2015, p. 492) and Wang et al. (2013, p. 873), along with findings from this study reveal that consumer participation can be influenced by factors such as their demographics, the factors that motivate their consumption, their existing disposal habits, their CLSC product and service knowledge, their perceived risks and benefits of participation and their social and environmental consciousness.

6th variable: macro-economic factors. Evaluated in this variable, are economic factors that may exist outside the organisation and its supply chain. These can enhance or hinder CLSC activities.

They can include legislation, crime and the economic performance of a country (Cant and Wild, 2013, p. 708-709).

7th variable: Perceived benefits and perceived risks. All the variables identified in the previous sections influence SMME retailer perceived benefits and risks of facilitating CLSC activities. They further impact consumer perceptions of participating in the activities of these systems.

Three product and information flows were summarised in the model:

Product and information flow a): The first product flow is of the used fashion collected from consumers through SMME retailer facilitated return initiatives. Information, regarding their perceptions of this activity, can, in the same way flow from consumers to the SMMEs. Due to the integrated nature of CLSCM, this can also be shared with other, relevant supply chain stakeholders.

Product and information flow b): The second product flow is of the recovered remanufactured products or those for reuse that could potentially be sold to consumers. In addition, information can flow from SMME retailers to consumers as they engage and educate them, for example, through social media campaigns and advertising of the products of these systems.

Product and information flow c): The third product flow is that of the secondary markets. SMME retailers of new fashion items can send them products for recycling in other industries, products for donation and products for resale by secondary markets. Information can also flow between the focal retailers and these stakeholders.

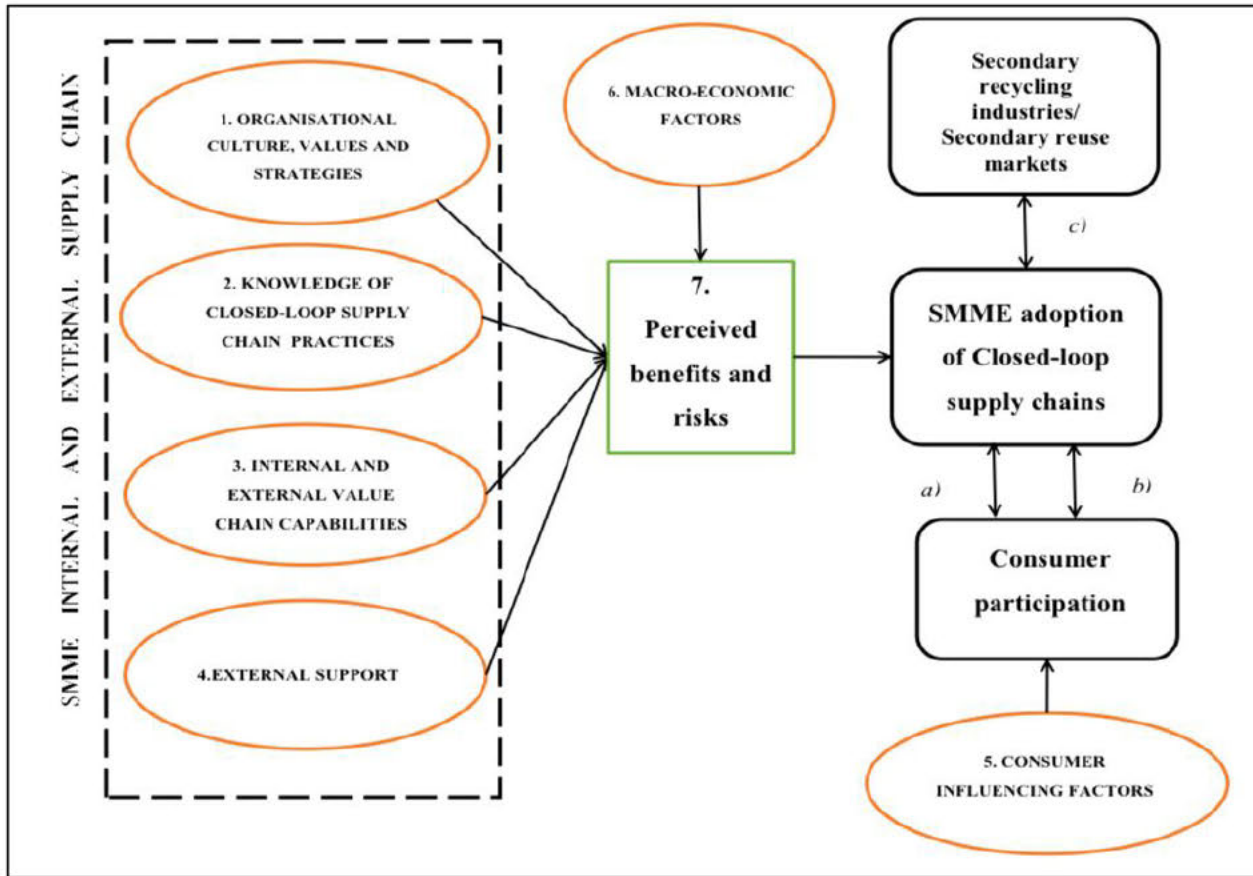


Figure 9.1: Model for SMME retailer adoption of closed-loop fashion supply chains in South Africa

9.5. Contributions of the study

The study provides an insight into the perceptions that multiple stakeholders have of the activities of CLSCM in South Africa. There have been no identified studies that have investigated this. While several studies were found that examine the activities of secondary markets for used products, this literature does not include the roles of retailers. It also does not include the roles of consumers as potential suppliers of used products. The present study integrates the perceptions of multiple stakeholders to determine the feasibility of adopting these practices.

Studies of the perceptions of SMME retailers are limited and the studies that do examine SMME perceptions or practices in CLSCs have been conducted in more developed countries, or in developing countries outside the continent of Africa. As a result, stakeholders are not able to assess if the recommendations of such studies would apply to their operating environment in South Africa. This study serves as a foundation for future research to be conducted that will support the CLSCM activities of SMME retailers on the continent.

The study does not disregard the value of the existing secondary market. The recommendations provided show that there is potential for such systems to co-exist. Furthermore, the study suggests an integration of these stakeholders. If the primary and secondary markets collaborate, the used products collected by primary SMME retailers can be redistributed by the secondary market. This can be found especially useful when primary SMME retailers are not confident that redistributing used fashion within their stores will align with their brands, or where excess products are collected.

9.6. Limitations of the study

There are some limitations to the study. Although it examined the perceptions of different types of stakeholders, data was limited to university students studying at one university in South Africa. This sample is not entirely representative of the entire population of university students in the country.

Also, while SMME retailers approached were asked to participate if university students represented a part of their target market, these consumers may not be the main or sole target markets for all the SMMEs, thus limiting the value of the feedback provided by this sample of stakeholders. However, the researcher motivates that a top university that is ranked as one of the largest universities in the country would attract a socially and culturally diverse student base, representing different parts of the country. As a result, students may be expected to represent the various socio-economic groups that exist within the country.

The study further included participants from only five of the nine provinces in South Africa. This limits the generalisability of the study to other provinces in South Africa. However, the study included three key contributing provinces of the fashion industry, Gauteng, Western Cape and KwaZulu-Natal.

The study also included a larger percentage of female students. While the researcher approached students based on their availability and willingness to participate in the study, male students did not appear equally in the study.

Students included in the study were mainly part of Generation Y and Z cohorts. This limits the generalisability of the findings to students that are outside the age categories of these cohorts.

The study also focused on one African economy. South Africa's unique features may not be representative of the other less developed countries on the continent. This might reduce the applicability and generalisability of the study's findings. However, this study provides a useful foundation for future research to be conducted with consumers and SMME retailers based in other emerging African countries.

The perceptions of other stakeholders involved in the supply chains of SMME retailers were not fully represented in this study. This was because the study's main focus was on retailers. As a result, an in-depth focus of all relevant stakeholders was not feasible for this study. This gap introduces opportunities for future research.

9.7. Future Research

Future research should consider the perceptions of stakeholders of SMME retailer facilitated CLSCM activities in more countries in Africa. This will not only enhance the body of knowledge and be representative of these markets, but comparisons of various countries on the continent

could offer more comprehensive insights into the similarities and differences between these economies.

The proposed model can be tested and validated by additional studies of CLSC operations. Assessing whether this model is applicable to other countries in Africa could offer a wider perspective of its validity. Where possible, adjustments to the model can also be performed to suit the operating environment.

Additional studies can evaluate the participation of other supply chain stakeholders. This can include upstream partners. Identifying the opportunities, challenges and limitations that they may experience as a result of participating in SMME retailer facilitated circular systems would be beneficial and improve the performances of these supply chains.

In addition to the operations of circular supply chains in the fashion industry, more studies should be conducted that examine SMME retailer coordinated CLSC practices in other industries in developing economies in Africa. It was found that the gap in knowledge was not just limited to the fashion industry, but also extended to other industries. Comparisons with other industries would be beneficial.

Future studies can be conducted with a more diverse consumer base. While this study was a useful starting point, the perceptions of additional consumers in the market could provide further useful comparisons. This would enable researchers to determine if the opinions of other markets were represented in this study.

Insight from stakeholders based in other provinces of South Africa could allow researchers to determine if the results of this study are representative of the opinions of all SMME fashion retailers and all consumers in different provinces.

Other studies could examine more specific areas of the supply chain, including the logistical activities that are required for the successful adoption of CLSCM activities. The costs associated with these activities could be evaluated to determine if those adopted in South Africa, as an African developing country, are feasible.

Future research should compare CLSCM activities coordinated by SMME retailers and those coordinated by large retailers. As international brands, such as H&M, currently facilitate these supply chains in South Africa, a perspective of the extent to which these services are accepted and used by consumers in an African market would prove worthwhile.

REFERENCE LIST

Abbey, J. D., Meloy, M. G., Guide Jr, V. D. R. and Atalay, S. (2015). Remanufactured Products in Closed-Loop Supply Chains for Consumer Goods. *Production and Operations Management*, 24 (3), 488-503. <https://doi.org/10.1111/poms.12238>

Abdelilah, B., El Korchi, A. and Balambo, M. A. (2018). Flexibility and Agility: Evolution and Relationship. *Journal Of Manufacturing Technology Management*, 29 (7), 1138-1162.

African Development Bank Group (2018). Textile and Clothing industries Can Drive Africa's Industrialisation, Benefit Women. Retrieved 14 April from <Textile and Clothing industries Can Drive Africa's Industrialization, Benefit Women | African Development Bank - Building Today, a Better Africa Tomorrow (AfdB.Org) >

Aftab, M. A., Yuanjian, Q., Kabir, N. and Barua, Z. (2018). Super Responsive Supply Chain: The Case of Spanish Fast Fashion Retailer Inditex-Zara. *International Journal of Business and Management*, 13 (5), 212-227, <https://doi.org/10.5539/ijbm.v13n5p212>

Ahi, P. and Searcy, C. (2015). Assessing Sustainability in the Supply Chain: A Triple Bottom Line Approach. *Applied Mathematical Modelling*, 39 (10-11), 2882-2896. <https://doi.org/10.1016/j.apm.2014.10.055>

Åkerberg, G. (2015). The Impact of Sustainability as a New Trend in the Fashion Industry. Lund University.

Akhtar, D. M. I. (2016). Research Design. *Research in Social Science: Interdisciplinary Perspectives*.

Allen, A. (2017). Empower Textiles Smes To Generate African Jobs. Retrieved 14 April from <['Empower Textiles Smes To Generate African Jobs' - Supply Management \(Cips.Org\)](#)>

Alzoubi, H. M. and Yanamandra, R. (2020). Investigating the Mediating Role of Information Sharing Strategy on Agile Supply Chain. *Uncertain Supply Chain Management*, 8 (2020), 273-284. <https://doi.org/10.5267/j.uscm.2019.12.004>

Aminpour, P., Gray, S., Richardson, R., Singer, A., Castro-Diaz, L., Schaefer, M., Ramlan, M.A. and Chikowore, N. R. (2020). Perspectives of Scholars on the Nature of Sustainability: A Survey Study. *International Journal of Sustainability in Higher Education*, 21 (1), 34-53. <https://doi.org/10.1108/ijshs-05-2019-0161>

Amjed, T. W. and Harrison, N. J. (2013). Sustainable Supply Chain Planning: A Framework to Facilitate Economic, Environmental and Social Responsibility, *Production and Operations Management Society*, 25, 1-10.

Arrigo, E. (2020). Global Sourcing in Fast Fashion Retailers: Sourcing Locations and Sustainability Considerations. *Sustainability*, 12 (2). <https://doi.org/10.3390/su12020508>

Arvidsson, E. and Kling, V. (2018). Factors Influencing the Intention to Perform In-store Recycling. *Jonkoping University, Sweden*.

Ashby, A. (2018). Developing Closed Loop Supply Chains for Environmental Sustainability. *Journal of Manufacturing Technology Management*, 29 (4), 699-722. <https://doi.org/10.1108/jmtm-12-2016-0175>

Ashby, A. and Smith, M. H. (2014). Putting Principles into Practice-How SMEs Manage their Supply Chains for Sustainability. EurOMA, Helsinki, Finland.

Ayoki, M. (2017). The Impact of Multi-Fibre Agreement Phase-Out on Sub-Saharan Africa's Textiles and Clothing Exports.

Bair, J., Anner, M. and Blasi, J. (2020). The Political Economy of Private and Public Regulation in Post-Rana Plaza Bangladesh. *ILR Review*, 73 (4), 969-994. <https://doi.org/10.1177/0019793920925424>

Bakari, S. (2017). Why Is South Africa Still a Developing Country? thesis, Faculty of Economic Sciences and Management of Tunis (Fsegt), University of Tunis El Manar, Tunisia.

Balcarová, T. E. R. E. Z. A., Pokorná, J. I. T. K. A. and Pilař, L. A. D. I. S. L. A. V. (2014). The Influence of Children on the Parents Buying Behavior: Food Purchase in the Czech Republic. *Agris on-line Papers in Economics and Informatics*, 6 (665-2016-45016), 11-19.

Balch, O. (2013). H&M: Can Fast Fashion and Sustainability Ever Really Mix?. Retrieved 2 June 2017 from <https://www.theguardian.com/sustainable-business/h-and-m-fashion-sustainability-mix>

Ballie, J. and Woods, M. (2018). Circular by Design: A Model for Engaging Fashion/Textile SMEs with Strategies for Designed Reuse. *Unmaking Waste in Production and Consumption: Towards the Circular Economy*, 103.

Bangladesh Accord (2018). About. Retrieved 16 April 2021 from [the Bangladesh Accord on Fire and Building Safety in Bangladesh](https://www.bangladeshaccord.com/)

Barnard, M. (2020). *Fashion Theory: A Reader*. Routledge.

Barnes, L. and Lea-Greenwood, G. (2010). Fast Fashion in the Retail Store Environment. *International Journal of Retail and Distribution Management*, 38 (10), 760-772. <https://doi.org/10.1108/09590551011076533>

Barón, A., De Castro, R., and Giménez, G. (2020). Circular Economy Practices Among Industrial Emas-Registered Smes in Spain. *Sustainability*, 12(21), 9011.

Bearne, S. (2018). Manufacturing a New UK Clothing Industry. Retrieved 23 August 2020 from <<https://www.drapersonline.com/insight/analysis/manufacturing-a-new-uk-clothing-industry>>

Benoit-Norris, C., Cavan, D. A. and Norris, G. (2012). Identifying Social Impacts in Product Supply Chains: Overview and Application of the Social Hotspot Database. *Sustainability*, 4 (9), 1946-1965. <https://doi.org/10.3390/su4091946>

Benstead, A. V., Hendry, L. C. and Stevenson, M. (2020). Detecting and Remediating Modern Slavery in Supply Chains: A Targeted Audit Approach. *Production Planning and Control*, 1-22. <https://doi.org/10.1080/09537287.2020.1795290>

Beresford Research (2021). Age Range by Generation. Retrieved 2 July 2021 from <Age Range By Generation | Beresford Research>

Bertram, R. F. and Chi, T. (2017). A Study of Companies' Business Responses to Fashion E-Commerce's Environmental Impact. *International Journal of Fashion Design, Technology and Education*, 11 (2), 254-264. <https://doi.org/10.1080/17543266.2017.1406541>

Bhardwaj, V. and Fairhurst, A. (2010). Fast Fashion: Response to Changes in the Fashion Industry. *The International Review of Retail, Distribution and Consumer Research*, 20 (1), 165-173. <https://doi.org/10.1080/09593960903498300>

Bhatia, M. S., Jakhar, S. K., Mangla, S. K., and Gangwani, K. K. (2020). Critical Factors to Environment Management in a Closed-loop Supply Chain. *Journal of Cleaner Production*, 255, 120239.

Bhorat, H., Asmal, Z., Lilenstein, K. and Van der Zee, K. (2018). *Smmes in South Africa: Understanding the Constraints on Growth And Performance*. Development Policy Research Unit, University of Cape Town.

Bick, R., Halsey, E. and Ekenga, C. C. (2018). The Global Environmental Injustice of Fast Fashion. *Environ Health*, 17 (1), 1-4. <https://doi.org/10.1186/s12940-018-0433-7>

Bonett, D. G. and Wright, T. A. (2014). Cronbach's Alpha Reliability: Interval Estimation, Hypothesis Testing and Sample Size Planning. *Journal of Organizational Behavior*, 36 (1), 3-15. <https://doi.org/10.1002/job.1960>

Bottani, E., Tebaldi, L., Lazzari, I. and Casella, G. (2019). A Model for Assessing Economic and Environmental Sustainability Dimensions of a Fashion Supply Chain and a Case Study. *IFAC PapersOnLine*, 52 (13), 361-366.

Brace, I. (2018). *Questionnaire design: How to Plan, Structure and Write Survey Material for Effective Market Research*. Kogan Page Publishers.

Bradbury, H. and Clair, J. A. (1999). Promoting Sustainable Organisations with Sweden's Natural Step. *Academy of Management Perspectives*, 13 (4), 63-74.

Brantemo, E., Carlstedt, H., and Wilhelmsson, H. (2020). Sustainable Conscious Fashion Consumption from the Perspective of Generation Z: With a Focus on Motivations.

Braz, A. C., De Mello, A. M., Gomes, L. A. D. and Nascimento, P. T. D. (2018). The Bullwhip Effect in Closed-Loop Supply Chains: A Systematic Literature Review. *Journal of Cleaner Production*, 202, 376-389. <https://doi.org/10.1016/j.jclepro.2018.08.042>

Brooks, A. and Simon, D. (2012). Unravelling the Relationships between Used-Clothing Imports and the Decline of African Clothing Industries. *Development and Change*, 43(6), 1265-1290. <https://doi.org/10.1111/j.1467-7660.2012.01797.x>

Bruwer, J. P. and Coetzee, P. (2016). A Literature Review of the Sustainability, the Managerial Conduct of Management and the Internal Control Systems Evident in South African Small, Medium and Micro Enterprises. *Problems and Perspectives in Management*, 14 (2), 201-211. [https://doi.org/10.21511/ppm.14\(2-1\).2016.09](https://doi.org/10.21511/ppm.14(2-1).2016.09)

Bruwer, J. P., and Smith, J. (2018). The Role of Basic Business Skills Development and their influence on South African Small, Medium and Micro Enterprise Sustainability. *Journal of Economics and Behavioural Studies*.

Bruwer, J.P. (2020). Fortifying South African Small Medium and Micro Enterprise Sustainability Through a Proposed internal Control Framework: the Sustenance Framework. *Expert Journal of Business and Management*, 8(2), Pp.147-158.

Bui, T. D., Tsai, F. M., Tseng, M. L., Tan, R. R., Yu, K. D. S. and Limas, M. K. (2020). Sustainable Supply Chain Management towards Disruption and Organisational Ambidexterity: A Data Driven Analysis. *Sustainable Production and Consumption*, 26 (2021), 373-410.

Bujang, M.A., Sa'at , N. and Sidik, T. M. I. (2017). Determination of Minimum Sample Size Requirement for Multiple Linear Regression and Analysis of Covariance Based on Experimental and Non-experimental Studies. *Epidemiology Biostatistics and Public Health*, 14 (3), e12117-1 – e12117-9.

Business Partners (2014). The South African Textile and Clothing Industry – An Overview. Retrieved 15 July 2016 from <<https://www.businesspartners.co.za/en-za/entrepreneurs-growth-centre/useful-articles/manufacturing/the-south-african-textile-and-clothing-industry-%E2%80%93-an-overview>>

Bvuma, S. and Marnewick, C. (2020). Sustainable Livelihoods of Township Small, Medium and Micro Enterprises towards Growth and Development. *Sustainability*, 12 (8), 1-17. <https://doi.org/10.3390/su12083149>

Camargo, L. R., Pereira, S. C. F., and Scarpin, M. R. S. (2020). Fast and Ultra-Fast Fashion Supply Chain Management: An Exploratory Research. *International Journal of Retail and Distribution Management*.

Cannella, S., Bruccoleri, M. and Framinan, J. M. (2016). Closed-Loop Supply Chains: What Reverse Logistics Factors Influence Performance?. *International Journal of Production Economics*, 175, 35-49. <https://doi.org/10.1016/j.ijpe.2016.01.012>

Cant, M. C. and Rabie, C. (2018). Township SMME Sustainability: A South African Perspective. *ACTA Universitatis Danubius*, 14 (7), 21.

Cant, M. C. and Wild, J. A. (2013). Establishing The Challenges Affecting South African SMEs. *International Business and Economics Research Journal*, 12 (6), 707-716.

Cantú, A., Aguiñaga, E., and Scheel, C. (2021). Learning from Failure and Success: the Challenges for Circular Economy Implementation in SMEs in an Emerging Economy. *Sustainability*, 13(3), 1529.

Carter, C. R. and Rogers, D. S. (2008). A Framework of Sustainable Supply Chain Management: Moving toward New Theory. *International Journal of Physical Distribution and Logistics Management*, 38 (5), 360-387. <https://doi.org/10.1108/09600030810882816>

Centobelli, P., Cerchione, R., and Ertz, M. (2020). Agile Supply Chain Management: Where did it Come from and Where will it go in the Era of Digital Transformation?. *Industrial Marketing Management*, 90, 324-345.

Chandran, R. (2016). Three Years after Rana Plaza Disaster, has Anything Changed?. Retrieved 18 February 2017 from <<http://www.reuters.com/article/us-bangladesh-garments-lessons-analysis-idUSKCN0XJ02G>>

Chang, W. C. (2017). Fashion Illusions: The Hipster Culture Of Fashion Consumption. *Asian Journal of Social Sciences and Humanities*, 6 (4), 51-60.

Chearavanont, S. (2019). How to Create Responsible Supply Chains in the Age of Globalisation 4.0. Retrieved 25 June 2021 from <[How to create responsible supply chains in the age of globalization 4.0 | World Economic Forum \(weforum.org\)](#)>

Chen, X. X., Xu, P., Li, J. J., Walker, T., and Yang, G. Q. (2020). Decision-making in a Retailer-led Closed-loop Supply Chain Involving a Third-party Logistics Provider. *Journal of Industrial and Management Optimisation*.

Chinasamy, J. (2019). A Monstrous Disposable Industry: Fast Facts about Fast Fashion. Retrieved 15 October 2020 from <<https://unearthed.greenpeace.org/2019/09/12/fast-facts-about-fast-fashion/>>

Choi, T. and Li, Y. (2015). Sustainability in Fashion Business Operations. *Sustainability*, 7 (11), 15400-15406. <https://doi.org/10.3390/su71115400>

Chow, P. S., and Li, C. K. (2018). Towards Closed-loop Fashion Supply Chains—Reflections from retailer facilitated Used Apparel Collection Programs. in *Contemporary Case Studies on Fashion Production, Marketing and Operations*, 219-239, Springer, Singapore.

Christopher, M., Lowson, R. and Peck, H. (2004). Creating Agile Supply Chains in the Fashion Industry. *International Journal of Retail and Distribution Management*, 32 (8), 367-376.

Čiarnienė, R. and Vienažindienė, M. (2014). Agility and Responsiveness Managing Fashion Supply Chain. *Procedia - Social and Behavioral Sciences*. 150 (2014), 1012-1019. <https://doi.org/10.1016/j.sbspro.2014.09.113>

Cimatti, B., Campana, G. and Carluccio, L. (2017). Eco Design and Sustainable Manufacturing in Fashion: A Case Study in the Luxury Personal Accessories Industry. *Procedia Manufacturing*, 8 (2017), 393-400. <https://doi.org/10.1016/j.promfg.2017.02.050>

Circular.Fashion (2019). Circularity.ID: The Transformation to Data-Driven Circularity in Fashion.

Collison, A. (2017). South African Fashion Brands You Should Know. Retrieved 15 April 2021 from <[South African Fashion Brands You Should Know \(theculturetrip.Com\)](#)>

Connell, J., Carlton, J., Grundy, A., Buck, E.T., Keetharuth, A.D., Ricketts, T., Barkham, M., Robotham, D., Rose, D. and Brazier, J. (2018). The Importance of Content and Face Validity in Instrument Development: Lessons Learnt from Service Users when Developing the Recovering Quality of Life Measure (ReQoL). *Quality of Life Research*, 27(7), 1893-1902.

Creswell, J. W. (2012). *A Concise Introduction to Mixed Methods Research*. SAGE Publications.

Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative and-Mixed Methods Approaches*. (Vol. 4). Sage.

Crotty, A. (2017). News Analysis: How H&M and Zara Riled SAWCTU. *Business Live*. Retrieved 12 December 2017 from <<https://www.businesslive.co.za/fm/money-and-investing/2017-11-16-news-analysis-how-hamp-m-and-zara-have-riled-union-sactwu/>>

Dahan, G. S. and Peltekoglu, F. B. (2011). The Effects of Zara to the SMEs of an Emerging Market. *Journal of Global Fashion Marketing*, 2 (1), 1-10. <https://doi.org/10.1080/20932685.2011.10593077>

Dal, Ş. A. (2019). A Research about Relationship between Fashion Design and Fabric Parameters. *The Journal of Social Science*, 3(6), 511-516.

Dalziel, R., and Bevan-Dye, A. (2019). Influence of Product Innovativeness and Subjective Norms on Female Generation Y Students' Attitudes towards Beauty Products. *International Journal of Innovation, Creativity and Change*, 5(2), 533-550.

Dasgupta, M. (2015). Exploring the Relevance of Case Study Research. *Vision*, 19(2), 147-160.

De Klerk, N. (2020). Influence of Status Consumption, Materialism and Subjective Norms on Generation Y Students' Price-Quality Fashion Attitude. *International Journal of Business and Management Studies*, 12(1), 163-176.

Dekker, R., Fleischmann, M., Inderfurth, K. and Van Wassenhove, N. (2013). *Reverse Logistics: Quantitative Models for Closed-Loop Supply Chains*. Springer Science & Business Media, Heidelberg.

Delirium, P. (2017). Marketing Strategy and H&M. Retrieved 18 August 2020 from <https://www.academia.edu/12881172/Marketing_Strategy_H_and_M>

Department of Environmental Affairs (2019). Sustainable Development. Retrieved 11 February 2020 from <<https://www.environment.gov.za/strategicissues/sustainablecommunities>>

Department of Small Business Development (2019). Revised Schedule 1 of the National Definition of Small Enterprise in South Africa. *Government Gazette*.

Dhurup, M. (2014). Impulsive Fashion Apparel Consumption: The Role of Hedonism, Fashion Involvement and Emotional Gratification in Fashion Apparel Impulsive Buying Behaviour in a Developing Country. *Mediterranean Journal of Social Sciences*, 5 (8), 168-177. <https://doi.org/10.5901/mjss.2014.v5n8p168>

Difrancesco, R. M., Huchzermeier, A. and Schröder, D. (2017). Optimising the Return Window for Online Fashion Retailers with Closed-Loop Refurbishment. *Omega*, 78, 205-221. <https://doi.org/10.1016/j.omega.2017.07.001>

Dissanayake, G. and Sinha, P. (2015). An Examination of the Product Development Process for Fashion remanufacturing. *Resources, Conservation and Recycling*, 104(Part A), 94-102. <https://doi.org/10.1016/j.resconrec.2015.09.008>

Ditty, S. (2015). It's Time for a Fashion Revolution. White Paper.

Donga, G., Ngirande, H. and Shumba, K. (2016). Perceived Barriers to the Development of Small, Medium and Microenterprises: A Case Study of Thulamela Municipality in the Limpopo Province. *Problems and Perspectives in Management*, 14 (4), 61-66. [https://doi.org/10.21511/ppm.14\(4\).2016.07](https://doi.org/10.21511/ppm.14(4).2016.07)

Duffett, R. G. (2018). Consumption Patterns and Demographic Factors Influence on F Fruit juice Classifications, Health Benefits and Sugar Content Perceptions in Two Municipal Districts in Cape Town, Western Cape, South Africa. *South African Journal of Clinical Nutrition*, 31(1), 20-28. <https://doi.org/10.1080/16070658.2017.1342950>

Egels-Zandén, N., Hulthén, K. and Wulff, G. (2015). Trade-offs in Supply Chain Transparency: The Case of Nudie Jeans Co. *Journal of Cleaner Production*, 107, 95-104.

Ekuma, K. J. (2012). The Importance of Predictive and Face Validity in Employee Selection and Ways of Maximizing them: An Assessment of Three Selection Methods. *International Journal of Business and Management*, 7(22), 115.

Elkington, J. (2004). Enter the Triple Bottom Line. Retrieved 16/10/2020 from <<http://www.johnelkington.com/archive/TBL-elkington-chapter.pdf>>

Ellen MacArthur Foundation (2013). Towards the Circular Economy. Retrieved 19 December 2019 from <<https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Ellen-MacArthur-Foundation-Towards-the-Circular-Economy-vol.1.pdf>>

Ellen MacArthur Foundation (2020). Our Mission to Accelerate the Transition to a Circular Economy. Retrieved 15 August 2020 from <<https://www.ellenmacarthurfoundation.org/>>

Etikan, I., and Bala, K. (2017). Sampling and Sampling Methods. *Biometrics and Biostatistics International Journal*, 5(6), 00149.

Etikan, I., Musa, S. A. and Alkassim. R. S. (2016). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*, 5 (1), 1-4.

European Commission (2016). Bangladesh Sustainability Compact Technical Status Report.

Farfetch. (2019). Understanding the Environmental Savings of Buying Pre-Owned Fashion. Farfetch. Retrieved 21 October 2020 from <<https://cdn-static.farfetch-contents.com/content/up/production/landing-pages/sustainability-calc>

/Understanding%20the%20Environmental%20Savings%20of%20Pre-owned_Farfetch%20Report%202020.pdf>

Farfetch. (2020). Farfetch Publishes Report and Launches Consumer Fashion Footprint Tool. Retrieved 21 October 2020 from <<https://aboutfarfetch.com/news/press-releases/farfetch-publishes-report-looking-into-the-environmental-benefits-of-pre-owned-fashion-and-launches-consumer-fashion-footprint-tool/>>

Farshbaf-Geranmayeh, A., Rabbani, M. and Taleizadeh, A.A. (2017). Cooperative Advertising in a Closed-Loop Supply Chain to Encourage Customers to Return their Used Products. *International Journal of Inventory Research*, 4 (1), 4-22.

Fetter, B. (2019). Small and Medium Enterprises in the Sustainable Supply Chain: A Review. *Periodica Polytechnica Social and Management Sciences*, 27 (2), 154-163. <https://doi.org/10.3311/PPso.12564>

Gabrielli, V., Baghi, I. and Codeluppi, V. (2013). Consumption Practices of Fast Fashion Products: A Consumer-Based Approach. *Journal of Fashion Marketing and Management: An International Journal*, 17 (2), 206-224. <https://doi.org/10.1108/jfmm-10-2011-0076>

Gazzola, P., Pavione, E., Pezzetti, R., and Grechi, D. (2020). Trends in the Fashion Industry. The Perception of Sustainability and Circular Economy: A Gender/Generation Quantitative Approach. *Sustainability*, 12(7), 2809.

Government Communication and Information System (2018). Retrieved 20 April 2021 from <[11-GovernmentSystems2018.pdf \(gcis.gov.za\)](#)>

Govindan, K. and Soleimani, H. (2017). A Review of Reverse Logistics and Closed-Loop Supply Chains: A Journal of Cleaner Production Focus. *Journal of Cleaner Production*, 142 (2017), 371-384. <https://doi.org/10.1016/j.jclepro.2016.03.126>

Govindan, K., Soleimani, H. and Kannan, D. (2015). Reverse Logistics and Closed-Loop Supply Chain: A Comprehensive Review to Explore the Future. *European Journal of Operational Research*, 240 (3), 603-626. <https://doi.org/10.1016/j.ejor.2014.07.012>

Green, K. W., Zelbst, P. J., Meacham, J. and Bhadauria, V. S. (2012). Green Supply Chain Management Practices: Impact on Performance. *Supply Chain Management: An International Journal*, 17 (3), 290-305. <https://doi.org/10.1108/13598541211227126>

GreenCape (2020). WISP. GreenCape. Retrieved 1 October 2020 from <<https://www.greencape.co.za/content/sector/wisp>>

Grover, V. K. (2015). Research Approach: An Overview. *Golden Research Thoughts*, 4 (8), 1-7.

Gualandris, J., and Kalchschmidt, M. (2014). Customer Pressure and Innovativeness: Their Role in Sustainable Supply Chain Management. *Journal of Purchasing and Supply Management*, 20(2), 103.

Gwozdz, W., Nielsen, K. S. and Müller, T. (2017). An Environmental Perspective on Clothing Consumption: Consumer Segments and their Behavioral Patterns. *Sustainability*, 9 (5), 1-27. <https://doi.org/10.3390/su9050762>

H&M Group (2020) Garment Collecting. Retrieved 17 July 2020 from <https://www2.hm.com/en_us/women/campaigns/16r-garment-collecting.html>

Habib, M. (2014). Supply Chain Management (SCM): Its Future Implications. *Open Journal of Social Sciences*, 2(09), 238.

Ha-Brookshire, J., McAndrews, L., Kim, J., Freeman, C., Jin, B., Norum, P., LeHew, M., Karpova, E., Hassall, L. and Marcketti, S. (2017). Moral Education for Sustainable Development: Exploring Morally Challenging Business Situations within the Global Supply Chain Context. *Sustainability*, 9 (9), 1641-1658. <https://doi.org/10.3390/su9091641>

Hansen, K. T. (2014). the Secondhand Clothing Market in Africa and its Influence on Local Fashions. *Dressstudy*, 64, 2014, 1-7.

Hart, S. L. (1997). Beyond Greening Strategies for a Sustainable World. Retrieved 6 September 2019 from <<https://hbr.org/1997/01/beyond-greening-strategies-for-a-sustainable-world>>

Hattingh, D., Magnus, K. and Ramlakan, S. (2016). South Africa's Cautious Consumer. McKinsey&Company. Retrieved 3 September 2020 from <<https://www.McKinsey.com/~media/McKinsey/Industries/Consumer%20Packaged%20Goods/Our%20Insights/South%20Africas%20cautious%20consumer/South-Africas-cautious-consumer.pdf?shouldIndex=false>>

Hedegård, L., Paras, M. and Gustafsson, E. (2016). Contradictions in Reuse-based Fashion Retail – The ReTuna Mall. *Global Fashion*.

Henninger, C. E., Bürklin, N. and Niinimäki, K. (2019). The Clothes Swapping Phenomenon – When Consumers Become Suppliers. *Journal of Fashion Marketing and Management: An International Journal*, 23 (3), 327-344. <https://doi.org/10.1108/jfmm-04-2018-0057>

Hoang, N. L. (2015). *Clothes Minded: An Analysis of the Effects of Donating Secondhand Clothing to Sub-Saharan Africa*. Thesis, Claremont College.

Hong, X., Xu, L., Du, P. and Wang, W. (2015). Joint Advertising, Pricing and Collection Decisions in a Closed-Loop Supply Chain. *International Journal of Production Economics*, 167 (2015), 12-22. <https://doi.org/10.1016/j.ijpe.2015.05.001>

Hourneaux, F., Gabriel, M. L. D. and Gallardo-Vázquez, D. A. (2018). Triple Bottom Line and Sustainable Performance Measurement in Industrial Companies. *Revista de Gestão*, 25 (4), 413-429. <https://doi.org/10.1108/rege-04-2018-0065>

Hu, Z., Li, Q., Chen, X. and Wang, Y. (2014). Sustainable Rent-Based Closed-Loop Supply Chain for Fashion Products. *Sustainability*, 6 (10), 7063-7088. <https://doi.org/10.3390/su6107063>

Huang, M., Song, M., Lee, L. H. and Ching, W. K. (2013). Analysis for Strategy of Closed-Loop Supply Chain with Dual Recycling Channel. *International Journal of Production Economics*, 144 (2), 510-520. <https://doi.org/10.1016/j.ijpe.2013.04.002>

Hugos, M. H. (2018). *Essentials Of Supply Chain Management*. John Wiley & Sons.

Huq, F. A. and Stevenson, M. (2020). Implementing Socially Sustainable Practices in Challenging Institutional Contexts: Building Theory from Seven Developing Country Supplier Cases. *Journal of Business Ethics*, 161 (2), 415-442. <https://doi.org/10.1007/s10551-018-3951-x>

Hur, E. and Cassidy, T. (2019). Perceptions and Attitudes towards Sustainable Fashion Design: Challenges and Opportunities for Implementing Sustainability in Fashion. *International Journal of Fashion Design, Technology and Education*, 12 (2), 208-217. <https://doi.org/10.1080/17543266.2019.1572789>

Hvass, K. K. (2016). *Weaving a Path from Waste to Value: Exploring Fashion Industry Business Models and the Circular Economy*. Copenhagen Business School.

Hvass, K. K. and Pedersen, E. R. G. (2019). Toward Circular Economy of Fashion. *Journal of Fashion Marketing and Management: An International Journal*, 23 (3), 345-365. <https://doi.org/10.1108/jfmm-04-2018-0059>

Igwenagu, C. (2016). *Fundamentals of Research Methodology and Data Collection*. LAP Lambert Academic Publishing.

Islam, M. T., and Huda, N. (2018). Reverse Logistics and Closed-loop Supply Chain of Waste Electrical and Electronic Equipment (WEEE)/E-waste: A Comprehensive Literature Review. *Resources, Conservation and Recycling*, 137, 48-75.

Ivanov, D. and Dolgui, A. (2020). Viability Of Intertwined Supply Networks: Extending The Supply Chain Resilience Angles Towards Survivability. A Position Paper Motivated By Coronavirus Outbreak. *International Journal of Production Research*, 58 (10), 2904-2915.

Jadezweni, A. (2020). At R280 a Piece Shoppers can use H&M's New In-Store Recycling Machine to Create a New Clothing Item. Retrieved 15 October 2020 from <<https://www.news24.com/w24/style/fashion/trends/at-r280-a-piece-shoppers-can-use-hms-new-in-store-recycling-machine-to-create-a-new-clothing-item-20201015>>

Jongbo, O. C. (2014). The Role of Research Design in a Purpose Driven Enquiry. *Review of Public Administration and Management*, 400(3615), 1-8.

Joung, H. (2014). Fast-fashion Consumers' Post-Purchase Behaviours. *International Journal of Retail and Distribution Management*, 42 (8), 688-697.
<https://doi.org/10.1108/ijrdm-03-2013-0055>

Joy, A. and Peña, C. (2017). Sustainability and the Fashion Industry: Conceptualising Nature and Traceability. In *Sustainability in Fashion*, 31-54. Palgrave Macmillan, Cham.

Joy, A., Sherry, J. F., Venkatesh, A., Wang, J. and Chan, R. (2012). Fast Fashion, Sustainability and the Ethical Appeal of Luxury Brands. *Fashion Theory*, 16 (3), 273-295.
<https://doi.org/10.2752/175174112x13340749707123>

Kaviyani-Charati, M., Ghodsypour, S. H., and Hajiaghaei-Keshteli, M. (2020). Impact of Adopting Quick Response and Agility on Supply Chain Competition With Strategic Customer Behavior. *Scientia Iranica*.

Khan, N., Hui, L. H., Chen, T. B. and Hoe, H. Y. (2016). Impulse Buying Behaviour of Generation Y in Fashion Retail. *International Journal of Business and Management*, 11 (1), 144-151.

Khurana. K. (2016). Sustainable Supply Chain Management in Fashion and Textile Companies- A Study on Existing Sustainable Tools and Models. *International Journal of Research in Business Management*, 4 (7), 101-116.

Kim, N. L., Kim, G. and Rothenberg, L. (2020). Is Honesty the Best Policy? Examining the Role of Price and Production Transparency in Fashion Marketing. *Sustainability*, 12 (17), 1-18. <https://doi.org/10.3390/su12176800>

Koberg, E. and Longoni, A. (2019). A Systematic Review of Sustainable Supply Chain Management in Global Supply Chains. *Journal of Cleaner Production*, 207 (2019), 1084-1098.

Koszewska, M. (2018). Circular Economy—Challenges for the Textile and Clothing Industry. *Autex Research Journal*, 18(4), 337-347.

Kotler, P. and Keller, K. L. (2016). *Marketing Management*. India: Pearson.

Kovach, J. J., Atasu, A., and Banerjee, S. (2018). Salesforce Incentives and Remanufacturing. *Production and Operations Management*, 27(3), 516-530.

Kozlowski, A., Searcy, C. and Bardecki, M. (2015). Corporate Sustainability Reporting in the Apparel Industry. *International Journal of Productivity and Performance Management*, 64 (3), 377-397. <https://doi.org/10.1108/ijppm-10-2014-0152>

Kumar, N. R. and Kumar, R. M. S. (2013). Closed-loop Supply Chain Management and Reverse Logistics -A Literature Review. *International Journal of Engineering Research and Technology*, 6 (4), 455-468.

Kumar, N., Brint, A., Shi, E., Upadhyay, A. and Ruan, X. (2019). Integrating Sustainable Supply Chain Practices with Operational Performance: An Exploratory Study of Chinese SMEs. *Production Planning and Control*, 30 (5-6), 464-478. <https://doi.org/10.1080/09537287.2018.1501816>

Kumar, R. (2011). *Research Methodology: A Step-by-Step Guide for Beginners*. (Vol.3). Sage.

Kwak, M., and Kim, H. (2016). Modeling the Time-Varying Advantages of a remanufactured Product: Is “Reman” Better Than “Brand New”? *Journal of Mechanical Design*, 138(5), 051701.

Lashen, M. (2012). *Supply Chain Management in Fast Fashion* Helsinki Metropolia University of Applied Sciences.

Leavy, P. (2017). *Research Design*. The Guilford Press.

Lee, S. and Workman, J. E. (2018). Consumer Tendency to Regret, Compulsive Buying, Gender and Fashion Time-of-Adoption Groups. *International Journal of Fashion Design, Technology and Education*, 11 (3), 265-276, DOI: 10.1080/17543266.2017.1423518

Lee, Y. J. (2012). *Consumer Motivation of Clothing Disposal Behaviours* (Doctoral dissertation, California State University, Northridge).

Lehr, C. B., Thun, J. and Milling, P. M. (2013). From Waste to Value- A System Dynamics Model for Strategic Decision-Making in Closed-Loop Supply Chains. *International Journal of Production and Research*, 51 (13), 4105-4116.

Lellis, B., Fávoro-Polonio, C. Z., Pamphile, J. A., and Polonio, J. C. (2019). Effects of Textile Dyes on Health and the Environment and Bioremediation Potential of Living Organisms. *Biotechnology Research and Innovation*, 3(2), 275-290.

Liu, Y., and Hei, Y. (2021). Exploring Generation Z Consumers' Attitudes Towards Sustainable Fashion and Marketing Activities Regarding Sustainable Fashion.

Lodder, M., Huffenreuter, R. L., Braungart, M. and den-Held, D. (2014). Regenerative Sustainable Development: Towards a Triple Top Line Approach and Increasing Positive Externalities. 5th International Sustainability Transitions Conference, Utrecht.

Lollo, N. and O'Rourke, D. (2020). Factory Benefits to Paying Workers More: The Critical Role of Compensation Systems in Apparel Manufacturing. *PLoS One*, 15 (2), e0227510. <https://doi.org/10.1371/journal.pone.0227510>

Lou, A. M., and Rezaeenour, J. (2016). The Impact of Knowledge Management Processes on Agile Supply Chain (Case Study: Iran Khodro Foundry Co.). *African Journal of Environmental Assessment and Management*, 21(6), 714-735.

Lu, D. (2011). *Fundamentals of Supply Chain Management*.

Luke, L. G. (2015). National Characteristics of South Africa: A Fractious and Frustrated Mood. Strategic Analysis Paper, Future Directions international.

Mahabir, A., Fan, J. and Mullings, R. (2020). Does the African Growth and Opportunity Act (AGOA) Impact EU-15 imports from Africa?. *Journal of Economic Studies*.

Marais, H. (2015). Effectiveness of Selected Marketing Activities in Creating Brand Equity in the South African Clothing Market amongst Black Generation Y Students North-West University. Vanderbiljpark, South Africa.

Marciniak, R. and Mohsen, M. G. (2016). Post-Purchase Consumer Behaviour, Sustainability and its Influence on Fashion Identity. *Fashion: Tyranny and Revelation*, 203-219.

Marques, A. D., Marques, A., and Ferreira, F. (2020). Homo Sustentabilis: Circular Economy and new Business Models in Fashion Industry. *SN Applied Sciences*, 2(2), 1-5.

Martinez-Sanchez, A. and Lahoz-Leo, F. (2018). Supply Chain Agility: A Mediator for Absorptive Capacity. *Baltic Journal of Management*, 13 (2), 264-278.

Mason, S. E., Nicolay, C. R., and Darzi, A. J. T. S. (2015). The use of Lean and Six Sigma Methodologies in Surgery: A Systematic Review. *The Surgeon*, 13(2), 91-100.

Matthews, B. (2015). Closing the Loop. *MCL Global*, 1-11.

Maxwell, A. J. (2012). *Qualitative Research Design: An Interactive Approach*. (Vol 3). Sage. Los Angeles.

McKinsey & Company (2020). How South African SMEs can Survive and Thrive Post Coronavirus. Retrieved 20 October 2020 from <<https://www.McKinsey.com/featured-insights/middle-east-and-africa/how-south-african-smes-can-survive-and-thrive-post-Coronavirus#>>

McMaster, M., Nettleton, C., Tom, C., Xu, B., Cao, C., and Qiao, P. (2020). Risk Management: Rethinking Fashion Supply Chain Management for Multinational Corporations in Light of the Covid-19 Outbreak. *Journal of Risk and Financial Management*, 13(8), 173.

Mehrjoo, M. and Pasek, Z. J. (2014). Impact of Product Variety on Supply Chain in Fast Fashion Apparel Industry. *Procedia CIRP*, 17 (2014), 296-301. <https://doi.org/10.1016/j.procir.2014.01.082>

Mentzer, J. T., DeWitt, W., Keebler, J. S. Min, S., Nix, N. W., Smith, C. D. and Zacharia, Z. G. (2001). Defining Supply Chain Management. *Journal of Business Logistics*, 22 (2), 25.

Meyer, A., Niemann, W., Mackenzie, J. and Lombaard, J. (2017). Drivers and Barriers of Reverse Logistics Practices: A Study of Large Grocery Retailers in South Africa. *Journal of Transport and Supply Chain Management*, 11 (1), 1-16.

Min, Z., Sawang, S., and Kivits, R. A. (2021). Proposing Circular Economy Ecosystem for Chinese SMEs: A Systematic Review. *International Journal of Environmental Research and Public Health*, 18 (5), 2395.

Mishra, S. B. and Alok, S. (2017). *Handbook of Research Methodology: A Compendium for Scholars and Researchers*. Educreation Publishing.

Moayery, M., Zamani, S. and Vazifehdoost, H. (2014). Effect of Visual Merchandising on Apparel Impulse Buying Behaviors among Iranian Young Adult Females. *Indian Journal of Science and Technology*, 7 (3), 360-366.

Moon, K. L. K., Lee, J. Y. and Lai, S. Y. C. (2017). Key drivers of an agile, collaborative fast fashion supply chain. *Journal of Fashion Marketing and Management: An International Journal*, 21 (3), 278-297, DOI 10.1108/JFMM-07-2016-0060

Moore, T. (2016). *Sustainability and Socially Responsible Labels for Clothing*. New York University. Writing II- Summer 2016.

Moosa, M. (2018). SA could Become a Country of Three Nations – Along Class, not Racial Lines. *Daily Maverick*. Retrieved 16 December 2019 from

<<https://www.dailymaverick.co.za/opinionista/2018-06-05-sa-could-become-a-country-of-three-nations-along-class-not-racial-lines/>>

Moran, M. (2013). Qualitative Sample Size. Statistics Solutions.

Mugge, R., Jockin, B. and Bocken, N. (2017). How to Sell Refurbished Smartphones? An Investigation of Different Customer Groups and Appropriate Incentives. *Journal of Cleaner Production*, 147, 284-296. DOI 10.1016/j.jclepro.2017.01.111

Muijs, D. (2010). *Doing quantitative research in education with SPSS*. Sage.

Mukherjee, S. (2015). Environmental and Social Impact of Fashion: Towards an Eco-friendly, Ethical Fashion. *International Journal of Interdisciplinary and Multidisciplinary Studies*, 2(3), 22-35.

Mura, M., Longo, M. and Zanni, S. (2020). Circular Economy in Italian SMEs: A Multi-Method Study. *Journal of Cleaner Production*, 245 (2020), 1-16. <https://doi.org/10.1016/j.jclepro.2019.118821>

Nash, J. (2019). Exploring How Social Media Platforms influence Fashion Consumer Decisions in the UK Retail Sector. *Journal of Fashion Marketing and Management: An International Journal*.

Nations Online (2019). Political Map of South Africa - Nations Online Project. Retrieved 10 July 2020 from <https://www.nationsonline.org/oneworld/map/south_africa_map.htm>

Ndachengedzwa, S. and Stecca, E. (2016). The Fashion Industry and its Impact on the Environment and Society. Retrieved 12 April 2017 from

<<http://www.senseandsustainability.net/2016/03/02/the-fashion-industry-and-its-impact-on-the-environment-and-society/>>

Ndlendele, S. (2017). the State of Retail in SA: HandM Update and Others. Retrieved 15 April 2021 from <[the State of Retail in Sa: HandM Update and Others \(Iol.Co.Za\)](#)>

Nenni, M. E., Giustiniano, L. and Pirolo, L. (2013). Demand Forecasting in the Fashion Industry: A Review. *International Journal of Engineering Business Management*, 5, 37.

Niinimäki, K., Peters, G., Dahlbo, H., Perry, P., Rissanen, T., and Gwilt, A. (2020). the Environmental Price of Fast Fashion. *Nature Reviews Earth and Environment*, 1 (4), 189-200.

Nike (2020) Reuse-A-Shoe Turns 26. Retrieved 17 July 2020 from <<https://purpose.nike.com/reuse-a-shoe>>

Noble, H. and Smith, J. (2015). Issues of Validity and Reliability in Qualitative Research. *Evidence Based Nursing*. 18 (2), 34-35.

Norris, L. (2015). The Limits of Ethicality in International Markets: Imported secondhand Clothing in India. *Geoforum*, 67, 183-193.

O'Connor, C. (2014). These Retailers Involved in Bangladesh Factory Disaster have Yet to Compensate Victims. Retrieved 3 July 2017 from <<https://www.forbes.com/sites/clareoconnor/2014/04/26/these-retailers-involved-in-bangladesh-factory-disaster-have-yet-to-compensate-victims/#77c3d8c4211b>>

Oelze, N., Gruchmann, T. and Brandenburg, M. (2020). Motivating Factors for Implementing Apparel Certification Schemes—A Sustainable Supply Chain Management Perspective. *Sustainability*, 12 (12), 1-15. <https://doi.org/10.3390/su12124823>

Oh, J. and Jeong, B. (2014). Profit Analysis and Supply Chain Planning Model for Closed-Loop Supply Chain in Fashion Industry. *Sustainability*, 6 (12), 9027-9056. <https://doi.org/10.3390/su6129027>

Oran, A. F. (2019). Fashion's Effect on Consumer's Preference Formation. *Journal of Economic Issues*, 53 (4), 1088-1102. DOI: 10.1080/00213624.2019.1668340

Orcao, A. E. and Pérez, D. R. (2014). Global Production Chains in the Fast Fashion Sector, Transports and Logistics: The Case of the Spanish Retailer Inditex. *Investigaciones Geográficas*, 2014 (85), 113-127. <https://doi.org/10.14350/rig.40002>

O'Reilly, S. and Kumar, A. (2015). Closing the Loop. *The International Journal of Logistics Management*, 27 (2), 486-510. <https://doi.org/10.1108/ijlm-03-2015-0050>

Oriade, A., Osinaike, A., Aduhene, K. and Wang, Y. (2020). Sustainability Awareness, Management Practices and Organisational Culture in Hotels: Evidence from Developing Countries. *International Journal of Hospitality Management*, 92 (2021), 1-12.

O'Rourke, D. (2014). The science of sustainable supply chains. *Science*, 344 (6188), 1124-1127.

Pantano, E., Giglio, S., and Dennis, C. (2019). Making Sense of Consumers' Tweets: Sentiment Outcomes for Fast Fashion Retailers Through Big Data Analytics. *International Journal of Retail and Distribution Management*.

Pappas, N. (2016). Marketing Strategies, Perceived Risks and Consumer Trust in Online Buying Behaviour. *Journal of Retailing and Consumer Services*, 29, 92-103.

Paraschiv, D., Tudor, C. and Petrariu, R. (2015). The Textile Industry and Sustainable Development: A Holt–Winters Forecasting Investigation for the Eastern European Area. *Sustainability*, 7 (2), 1280-1291. <https://doi.org/10.3390/su7021280>

Pereseina, V., Jensen, L. M. and Hertz, S. (2013). Challenges and Conflicts in Sustainable Supply Chain Management: Evidence from the Heavy Vehicle Industry. *Supply Chain Forum: An International Journal* 15 (1), 22-32.

Perry, P., and Wood, S. (2019). Exploring the international Fashion Supply Chain and Corporate Social Responsibility: Cost, Responsiveness and Ethical Implications. *Logistics and Retail Management*, 5th Edn. Kogan Page.

Pillay, S. (2020). #Biztrends2020: Retail and Gen Z in 2020 - Who they Are and What they Want. Retrieved 15 April 2021 from <[#Biztrends2020: Retail and Gen Z in 2020 - Who they Are and What they Want \(Bizcommunity.Com\)](#)>

Plecher (2020). Total Population of South Africa 2019, by Gender. Retrieved 25 November 2020 from
<[Poku, N. K. \(2021\). The University of KwaZulu-Natal Approach to Creating Sustainable Futures. Retrieved 1 June 2022 from <<https://africalive.net/article/unikzn-sustainable-futures/>>](https://www.statista.com/statistics/967928/total-population-of-south-africa-by-gender/#:~:text=In%202019%2C%20South%20Africa's%20female,to%20approximately%2028.86%20million%20inhabitants.>></p></div><div data-bbox=)

Popescu, A. (2015). On the Sustainability of Fast Fashion Supply Chains- A Comparison between the Sustainability of Inditex and H&M's Supply Chains. *Management and Marketing Journal*, 2015 (2), 333-352.

Rafi-Ul-Shan, P. M., Grant, D. B, Perry, P. and Ahmed, S. (2018). Relationship between Sustainability and Risk Management in Fashion Supply Chains: A Systematic Literature Review. *International Journal of Retail and Distribution Management* 46 (5), 466-486. DOI: 10.1108/IJRDM-04-2017-0092

Rahim, M. H. A., Zukni, R. Z. J. A., Ahmad, F. and Lyndon, N. (2012). Green Advertising and Environmentally Responsible Consumer Behavior: The Level of Awareness and Perception of Malaysian Youth. *Asian Social Science*, 8 (5), 46-54. <https://doi.org/10.5539/ass.v8n5p46>

Ramani, V., and De Giovanni, P. (2017). A Two-period Model of Product Cannibalisation in an Atypical Closed-loop Supply Chain with Endogenous Returns: The Case of DellReconnect. *European Journal of Operational Research*, 262(3), 1009-1027.

Ramaniah, Z. (2019). HandM's Greenwashing: Short-sighted and Unethical. Retrieved 30 April 2021 from <[HandM's Greenwashing: Short-Sighted and Unethical \(brandingmag.com\)](https://brandingmag.com)>

Ranchhod, V. (2019). Why Is South Africa's Unemployment Rate So High? Retrieved 14 April from <[Why Is South Africa's Unemployment Rate So High? | Groundup](https://groundup.org)>

Reimann, M., Xiong, Y., and Zhou, Y. (2019). Managing a Closed-loop Supply Chain with Process Innovation for Remanufacturing. *European Journal of Operational Research*, 276 (2), 510-518.

Rewoven. (2020). Our Impact. Retrieved 10 June 2021 from <https://www.rewoven.africa/our-impact>

Romero, D., and Rossi, M. (2017). Towards Circular Lean Product-Service systems. *Procedia CIRP*, 64, 13-18.

Roos, S., Sandin, G., Peters, G., Spak, B., Bour, L. S., Perzon, E., and Jönsson, C. (2019). White Paper on Textile Recycling. *Mistra Future Fashion. Mölndal (Mistra Future Fashion Report Number, 2019: 09, 2, 2020).*

Rowley, J. (2014). Designing and using Research Questionnaires. *Management Research Review*.

Roy, S., Hiran, D. and Hiran, D. (2019). *Fashion Forecasting In India. RED'SHINE Publication. Pvt. Ltd.*

Rubin, A., and Babbie, E. R. (2011). *Empowerment Series: Research Methods for Social Work. Cengage Learning.*

Rusu, V. D., and Roman, A. (2016). The Impact of Macroeconomic Conditions on SMEs Performance in Terms of Employment. *Revista Economica*, 68 (3).

Şahin, E., Çemberci, M., Civelek, M. E. and Uca, N. (2017). The Role of Agility in the Effect of Trust in Supply Chain on Firm Performance, *Management Studies*, 5 (4), 336-345. <https://doi.org/10.17265/2328-2185/2017.04.008>

Saleh, A., and Bista, K. (2017). Examining Factors Impacting Online Survey Response Rates in Educational Research: Perceptions of Graduate Students. *Online Submission*, 13 (2), 63-74.

Sandvik, I. M. (2017). Applying Circular Economy to the Fashion Industry in Scandinavia through Textile-to-Textile Recycling Monash University.

Savaskan, R. C., Bhattacharya, S. and Van Wassenhove, L. N. (2004). Closed-Loop Supply Chain Models with Product Remanufacturing. *Management Science*, 50 (2), 239-252. <https://doi.org/10.1287/mnsc.1030.0186>

Seifert, M., Siemsen, E., Hadida, A. L. and Eisingerich, A. B. (2015). Effective Judgmental Forecasting in the Context Of Fashion Products. *Journal of Operations Management*, 36, 33-45.

Sekaran, U. and Bougie., R. (2016). *Research Methods For Business: A Skill Building Approach*. (Vol. 7). John Wiley and Sons Ltd.

Setino, R. (2018). Alignment of Supply Chain Management Practices with Policies and Regulations in State Owned Entities in South Africa (Doctoral Dissertation).

Shekarian, E. (2020). A Review of Factors Affecting Closed-loop Supply Chain Models. *Journal of Cleaner Production*, 253, 119823.

Shen, B. (2014). Sustainable Fashion Supply Chain: Lessons from H&M, *Sustainability*, 6 (9), 6236-6249. <https://doi.org/10.3390/su6096236>

Shen, B. and Li, Q. (2015). Impacts of Returning Unsold Products in Retail Outsourcing Fashion Supply Chain: A Sustainability Analysis. *Sustainability*, 7 (2), 1172-1185. <https://doi.org/10.3390/su7021172>

Shen, B., Choi, T. and Lo, C. (2015). Enhancing Economic Sustainability by Markdown Money Supply Contracts in the Fashion Industry: China vs U.S.A. *Sustainability*, 8 (1), 1-14. <https://doi.org/10.3390/su8010031>

Shen, B., Choi, T. M. and Chow, P. S. (2017). Brand Loyalties in Designer Luxury and Fast Fashion Co-Branding Alliances. *Journal of Business Research*, 81, 173-180.

Sinha, P., Muthu, S. S., and Dissanayake, G. (2016). The Remanufacturing Industry and Fashion. In *Remanufactured Fashion*, 1-9. Springer, Singapore.

Smal, D. N. (2016). The Role of Environmental Sustainability in a Design-driven Fashion Industry: A South African Case Study Cape Peninsula University of Technology. South Africa.

Small Enterprise Development Agency (2016). The Small, Medium and Micro Enterprise Sector of South Africa.

Small Enterprise Development Agency. (2018). SMME Quarterly Update 1st Quarter 2018. Retrieved 20 August 2020 from <http://www.seda.org.za/Publications/Publications/SMME%20Quarterly%202018-Q1.pdf>

South Africa Gateway (2019). The Nine Provinces of South Africa. Retrieved 12 August 2020 from <https://southafrica-info.com/land/nine-provinces-south-africa/>

South African Government (2021). National Development Plan 2030. Retrieved 10 July 2021 from <[National Development Plan 2030 | South African Government \(www.gov.za\)](#)>

South African Government News (2020). Government Commits To Support Clothing, Textile industry. Retrieved 15 May 2021 from <[Government Commits To Support Clothing, Textile industry | Sanews](#)>

Spragg, J. E. (2017). Articulating the Fashion Product Life-Cycle. *Journal of Fashion Marketing and Management: An International Journal*.

Stafford, V. (2018). Factory Exploitation and the Fast Fashion Machine. Retrieved 16 April 2021 from [Fast Fashion and Worker Exploitation | Green America](#)

Statistics South Africa (2016). Education Series Volume III: Educational Enrollment and Achievement, 2016.

Statistics South Africa (2019). How Large is the Small Business Footprint?. Retrieved 10 October 2020 from <<http://www.statssa.gov.za/?p=12264>>

Statistics South Africa (2020). Mid-year Population Estimates. Retrieved from <[P03022020.pdf \(statssa.gov.za\)](#)>

Strähle, J. (2017). *Green Fashion Retail*. Springer.

Stuckey, L. (2013). Three Types of Interviews: Qualitative Research Methods in Social Health. *Methodological Issues in Social Health and Diabetes Research*.

Sudusinghe, J. I. and Seuring, S. (2020). Social Sustainability Empowering the Economic Sustainability in the Global Apparel Supply Chain. *Sustainability*, 12 (7), 1-18. <https://doi.org/10.3390/su12072595>

Taber, K. S. (2016). The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education. *Research in Science Education*, 48 (6), 1273-1296. <https://doi.org/10.1007/s11165-016-9602-2>

Tóta, Á. (2015). Sustainable Clothing Consumption - Case Study about Second Hand Clothes University of Porto. Portugal.

Tshuma, R., and Mafa, O. (2013). Research Designs. Preparing your Dissertation at a Distance: A Research, 114.

Tswana, Y. (2017). Illegal Imports Rip into Local Clothing Industry. Retrieved 11 April 2021 from <[Illegal imports rip into local clothing industry \(iol.co.za\)](#)>

UNESCO (2018). Most Students want Sustainable Development as Part of all University Courses. Retrieved 19 April 2021 from <[Most students want sustainable development as part of all university courses, survey reveals \(unesco.org\)](#)>

United Nations. (2020). The 17 Goals. United Nations. Retrieved October 20 from <<https://sdgs.un.org/goals>>

University of KwaZulu-Natal (2017). UKZN at a Glance. Retrieved 15 June 2020 from <[At-a-Glance-2017.pdf \(ukzn.ac.za\)](#)>

University of KwaZulu-Natal (2021). UKZN at a Glance. Retrieved 8 June 2022 from <<https://z3t9t3v4.stackpathcdn.com/wp-content/uploads/2021/10/At-a-Glance-2021.pdf>>

University of KwaZulu-Natal (2022). ResearchSpace. Retrieved 10 June 2022 from <<https://researchspace.ukzn.ac.za/discover>>

Vehovar, V., Toepoel, V., and Steinmetz, S. (2016). Non-probability Sampling. The Sage Handbook of Survey Methods, 329-345.

Velia, M., Valodia, I. and Amisi, B. (2006). Trade Dynamics in Used Clothing: The Case of Durban, South Africa.

Wang, N. (2017). We're All in This Together!: Examining the Effect of Peer Pressure on Eco-Fashion Consumption Between Generation Z and Generation Y (Doctoral Dissertation).

Wang, Y. and Hazen, B. T. (2016). Consumer Product Knowledge and Intention to Purchase Remanufactured Product,. International Journal of Production Economics, 181 (Part B), 460-469.

Wang, Y., Hazen, B. T., and Mollenkopf, D. A. (2018). Consumer Value Considerations and Adoption of Remanufactured Products in Closed-loop Supply Chains. Industrial Management and Data Systems.

Wang, Y., Wiegerinck, V., Krikke, H. and Zhang, H. (2013). Understanding the Purchase Intention towards Remanufactured Product in Closed-Loop Supply Chains, International Journal of Physical Distribution and Logistics Management, 43 (10), 866-888. <https://doi.org/10.1108/ijpdlm-01-2013-0011>

Wankowicz, E. (2016). Sustainable Fibre for Sustainable Fashion Supply Chains: Where the Journey to Sustainability begins. International Conference on Industrial Logistics, Zakopane, Poland.

Weng, J. T., Ting, H., de Run, E. C. and Tan, S. (2016). Disposition and Repurchase Intention: A Preliminary Study of the How and Why. *Procedia - Social and Behavioral Sciences*, 224 (2016), 332-338. <https://doi.org/10.1016/j.sbspro.2016.05.384>

Williams, B. R. (2015). African Growth and Opportunity Act (AGOA): Background and Reauthorisation. Retrieved 23 August 2020 from <https://agoa.co.za/images/documents/5450/r43173.pdf>

Wise, N. (2019). Eventful Futures and Triple Bottom Line Impacts: BRICS, Image Regeneration and Competitiveness. *Journal of Place Management and Development*, 13 (1), 89-100. <https://doi.org/10.1108/jpmd-10-2019-0087>

World Commission on Environment and Development (1987). Report of the World Commission on Environment and Development: Our Common Future. Retrieved 14 July 2019 from <http://www.un-documents.net/our-common-future.pdf>.

Wu, C. H., and Kao, Y. J. (2018). Cooperation regarding Technology Development in a Closed-loop Supply Chain. *European Journal of Operational Research*, 267 (2), 523-539.

Xu, N. R., Liu, J. B., Li, D. X., and Wang, J. (2016). Research on Evolutionary Mechanism of Agile Supply Chain Network via Complex Network Theory. *Mathematical Problems in Engineering*, 2016.

Yurchynska, H. and Serdiuk, O. (2018). Psychological Factors of Starting Entrepreneurs' Business Success. *Social Welfare: Interdisciplinary Approach*, 2 (7), 86-94. <https://doi.org/10.21277/sw.v2i7.321>

Zamanzadeh, V., Rassouli, M., Abbaszadeh, A., Majd, H. A., Nikanfar, A., and Ghahramanian, A. (2014). Details of Content Validity and Objectifying it in Instrument Development. *Nursing Practice Today*, 1(3), 163-171.

Zirkevych, V. I. (2018). Haute Couture in the Age of Fast Fashion. in *Наукові Розробки Молоді На Сучасному Етапі. Київський Національний Університет Технологій Та Дизайну*.

Žitkienė, R. and Deksnys, M. (2018). *Organisational Agility Conceptual Model*.

APPENDIX A: INFORMED CONSENT FORMS

UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE (HSSREC)

APPLICATION FOR ETHICS APPROVAL

For research with human participants

Information Sheet and Consent to Participate in Research

Date:

Greetings,

My name is Chenai Muhwati. I am a PhD (Supply Chain Management) candidate from the School of Management, IT and Governance at the University of KwaZulu-Natal. My contact details are chenmuhwati@gmail.com or 081 787 6821. My supervisor's name is Dr. R. H. Salisbury. His contact details are Salisbury@ukzn.ac.za or 033 260 5458.

You are being invited to consider participating in a study that involves research on the redistribution of pre-owned fashion products for sustainability purposes. The aim and purpose of this research is to analyze consumer perceptions of various strategies for recovering value from used fashion products. The strategies that will be studied are reuse, remanufacturing and recycling. The researcher aims to use this information to determine if there are any opportunities for retailers in South Africa to increase their sustainability through participating in the collection, reprocessing and redistribution of used fashion products. The study is expected to include 300 consumers from the KwaZulu-Natal region. It will involve the following procedures: the distribution of questionnaires and the facilitation of four semi-structured interviews with four micro, small or medium sized retailers. The interviews will be voice recorded and the researcher

will also take notes during the course of the discussions. The duration of your participation in the interview, if you choose to participate and remain in the study, is expected to be 45 minutes.

The study will not involve any risks and/or discomforts. We hope that the study will create the following benefits: an analysis of whether it is feasible for South African fashion retailers to implement sustainability strategies that involve consumer participation and reduction of waste. It is also hoped that this study will present South African fashion retailers with local consumer perceptions of strategies that have been used globally in order to determine a local approach to increasing sustainability and competitiveness of these companies in a world that is requiring more accountability.

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (approval number: HSSREC/00000711/2019).

In the event of any problems or concerns/questions you may contact the researcher at (chenmuhwati@gmail.com or 081 787 6821) or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details as follows:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001

Durban 4000KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557- Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

Your participation in the study is voluntary and by participating, you are granting the researcher permission to use your responses. You may refuse to participate or withdraw from the study at any time with no negative consequence. There will be no monetary gain from participating in the study. Your anonymity will be maintained by the researcher and the School of Management, I.T. & Governance and your responses will not be used for any purposes outside of this study.

All data, both electronic and hard copy, will be securely stored during the study and archived for 5 years. After this time, all data will be destroyed.

If you have any questions or concerns about participating in the study, please contact me or my research supervisor at the numbers listed above.

Sincerely

Chenai Muhwati

CONSENT TO PARTICIPATE

I have been informed about the study entitled ‘**Closed-loop supply chain adoption in the South African fashion industry**’ by Chenai Muhwati.

I understand the purpose and procedures of the study.

I have been given an opportunity to ask questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any of the benefits that I usually am entitled to.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at chenmuhwati@gmail.com or 081 787 6821.

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001

Durban

4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557 - Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

**UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE
(HSSREC)**

APPLICATION FOR ETHICS APPROVAL

For research with human participants

Information Sheet and Consent to Participate in Research

Date:

Greetings,

My name is Chenai Muhwati. I am a PhD (Supply Chain Management) candidate from the School of Management, IT and Governance at the University of KwaZulu-Natal. My contact details are chenmuhwati@gmail.com or 081 787 6821. My supervisor's name is Dr. R. H. Salisbury. His contact details are Salisbury@ukzn.ac.za or 033 260 5458.

You are being invited to consider participating in a study that involves research on the collection and redistribution of pre-owned fashion products for sustainability purposes. The aim and purpose of this research is to analyze consumer perceptions of various strategies for recovering value from used fashion products. The strategies that will be studied are reuse, remanufacturing and recycling. The researcher aims to use this information to determine if there are any opportunities for retailers in South Africa to increase their sustainability through participating in the collection, reprocessing and redistribution of used fashion products. The study is expected to include 300 consumers from the KwaZulu-Natal region. It will involve the following procedures: the distribution of questionnaires and the facilitation of semi-structured interviews. The duration of your participation if you choose to participate and remain in the study is expected to be 15-20 minutes to complete the questionnaire.

The study will not involve any risks and/or discomforts. We hope that the study will create the following benefits: an analysis of whether it is feasible for South African fashion retailers to implement sustainability strategies that involve consumer participation and reduction of waste. It is also hoped that this study will present South African fashion retailers with local consumer perceptions of strategies that have been used globally in order to determine a local approach to increasing sustainability and competitiveness of these companies in a world that is requiring more accountability.

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (approval number: HSSREC/00000711/2019).

In the event of any problems or concerns/questions you may contact the researcher at (chenmuhwati@gmail.com or 081 787 6821) or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details as follows:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001

Durban 4000KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557- Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

Your participation in the study is voluntary and by participating, you are granting the researcher permission to use your responses. You may refuse to participate or withdraw from the study at any time with no negative consequence. There will be no monetary gain from participating in the study. Your anonymity will be maintained by the researcher and the School of Management, I.T. & Governance and your responses will not be used for any purposes outside of this study.

All data, both electronic and hard copy, will be securely stored during the study and archived for 5 years. After this time, all data will be destroyed.

If you have any questions or concerns about participating in the study, please contact me or my research supervisor at the numbers listed above.

Sincerely

Chenai Muhwati

CONSENT TO PARTICIPATE

I have been informed about the study entitled ‘**Closed-loop supply chain adoption in the South African fashion industry**’ by Chenai Muhwati.

I understand the purpose and procedures of the study.

I have been given an opportunity to ask questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any of the benefits that I usually am entitled to.

I have been informed about any available compensation or medical treatment if injury occurs to me as a result of study-related procedures.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at chenmuhwati@gmail.com or 081 787 6821.

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001

Durban

4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557 - Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

Signature of Participant

Date

Signature of Witness
(Where applicable)

Date

Signature of Translator
(Where applicable)

Date

APPENDIX B: INTERVIEW GUIDES

Preliminary Interview Guide: Retailers of new fashion

Interviewee No:

Job Title:

Type of business:

Location of business:

Starting time of interview:

Ending time of interview:

Section A: Sustainable Supply Chain Management

1. What role does sustainability play in the global fashion industry supply chain? To what extent does this have an impact on stakeholders in South Africa?
2. To what extent do you think SMME retailers and their supply chain suppliers/partners should be held accountable for how their consumers dispose of their fashion products?
3. Does sustainability have a role in how your business currently operates and how it will operate in the future? If so, how?
4. To what extent would/does incorporating sustainable practices impact your relationship with your supply chain suppliers/partners and other stakeholders?

Section B: Product Knowledge

5. How would you describe the type of consumer your business targets?
6. Do you believe ethical consumption plays a key role in the purchasing decisions of South Africa's consumers, particularly young adults and university students?

7. What are your thoughts on the recycling/reuse/remanufacturing of used fashion products?
8. How familiar do you think South Africa's consumers are with recycled/remanufactured/secondhand products? To what extent does this familiarity depend on age and level of education?
9. Are you familiar with many brands that incorporate used fashion products in South Africa, for sustainability purposes?
10. How do you think consumers of your business would respond to products remanufactured using used fashion?
11. How do you think consumers of your business would respond to being provided with catalogues that include both new and used products?

Section C: Perceived benefits

12. Do you think there would be any benefits of your business facilitating the collection of used fashion from consumers for reuse/recycling/remanufacturing?
13. Do you think there would be any benefits of providing both new and used fashion for your consumers to purchase?
14. Do you think there would be any benefits of remanufacturing used fashion products for your business?
15. Are there any other benefits you can identify of adopting closed-loop supply chain strategies in your business?

Section D: Perceived risks

16. Do you think there would be any costs/risks of your business facilitating the collection of used fashion from consumers for reuse/recycling/remanufacturing?
17. Do you think there would be any costs/risks of providing both new and used fashion for your consumers to purchase?

18. Do you think there would be any risks associated with remanufacturing used fashion products for your business?

19. Are there any other risks you can identify of your business adopting closed-loop supply chain strategies?

Section E: Conclusion

20. What do you think would need to be done to encourage consumers to participate in the activities of closed-loop supply chains?

21. What do you think is needed for SMMEs like yourself to be able to seamlessly adopt closed-loop supply chains?

22. If you could choose a/ another closed-loop supply chain strategy to incorporate into your business, which would it be? Why?

23. What type of consumer do you think would be more likely to support closed-loop supply chain initiatives in the South African fashion industry? Why?

Preliminary Interview Guide: Retailers of used/secondhand fashion

Interviewee No:

Job Title:

Type of business:

Location of business:

Starting time of interview:

Ending time of interview:

Section A: Sustainable Supply Chain Management

1. What role does sustainability play in the global fashion industry supply chain? To what extent does this have an impact on stakeholders in South Africa?
2. To what extent do you think SMME retailers and their supply chain suppliers/partners should be held accountable for how their consumers dispose of their fashion products?
3. Does sustainability have a role in how your business currently operates and how it will operate in the future? If so, how?
4. To what extent would/does incorporating sustainable practices impact your relationship with your supply chain suppliers/partners and other stakeholders?

Section B: Product Knowledge

5. How would you describe the type of consumer your business targets?
6. Do you believe ethical consumption plays a key role in the purchasing decisions of South Africa's consumers, particularly young people and university students?
8. What are your thoughts on the recycling/reuse/remanufacturing of used fashion products?

8. How familiar do you think South Africa's consumers are with recycled/remanufactured/secondhand products? To what extent does this familiarity depend on age and level of education?

9. Are you familiar with many brands that incorporate used fashion products in South Africa, for sustainability purposes?

10. How do you think consumers of your business would respond to products recycled/remanufactured using used fashion?

Section C: Perceived benefits

11. Do you think there would be any benefits of your business collaborating with retailers of new fashion items to facilitate the collection of used fashion from consumers for reuse/recycling/remanufacturing?

12. Do you think there would be any benefits of also providing recycled/remanufactured fashion for your consumers to purchase?

13. Do you think there would be any benefits of remanufacturing used fashion products for your business?

14. Are there any other benefits you can identify of adopting additional closed-loop supply chain strategies in your business?

Section D: Perceived risks

15. Do you think there would be any costs/risks of your business collaborating with retailers of new fashion items to facilitate the collection of used fashion from consumers for reuse/recycling/remanufacturing?

16. Do you think there would be any costs/risks of providing recycled/remanufactured fashion for your consumers to purchase?

17. Do you think there would be any risks associated with remanufacturing used fashion products for your business?

18. Are there any other risks you can identify of your business adopting closed-loop supply chain strategies?

Section E: Conclusion

19. What do you think would need to be done to encourage consumers to participate in the activities of closed-loop supply chains?

20. What do you think is needed for SMMEs like yourself to be able to seamlessly adopt additional closed-loop supply chain strategies?

21. If you could choose a/ another closed-loop supply chain strategy to incorporate into your business, which would it be? Why?

22. What type of consumer do you think would be more likely to support closed-loop supply chain initiatives in the South African fashion industry? Why?

Preliminary Interview Guide: Cut, Make and Trim

Interviewee No:

Job Title:

Type of business:

Location of business:

Starting time of interview:

Ending time of interview:

Section A: Sustainable Supply Chain Management

1. What role does sustainability play in the global fashion industry supply chain? To what extent does this have an impact on CMT stakeholders in South Africa?
2. To what extent do you think SMME retailers and their CMT partners should be held accountable for how consumers dispose of their fashion products?
3. What role does your business have when it comes to sustainability in South Africa's fashion industry?
4. To what extent would/does incorporating sustainable practices impact the relationships that you have with your retail partners and other supply chain stakeholders?

Section B: Product Knowledge

5. How would you describe the type of businesses you target?
6. Do you believe ethical consumption plays a key role in the purchasing decisions of South Africa's consumers, particularly young people and university students?
7. What are your thoughts on the recycling/reuse/remanufacturing of used fashion products?

8. How familiar do you think South Africa's consumers are with recycled/remanufactured/secondhand products?

9. Are you familiar with many CMTs that incorporate used fashion products in South Africa, for sustainability purposes?

10. How do you think final consumers would respond to products remanufactured using used fashion?

Section C: Perceived benefits

11. Do you think there would be any benefits of your business participating in the reprocessing of used fashion from consumers ?

12. Do you think there would be any benefits of processing both new and used fashion?

13. Do you think your business can derive any benefits from remanufacturing used fashion products?

14. Are there any other benefits you can identify of adopting closed-loop supply chain strategies in your business?

15. To what extent would the reuse/recycling/remanufacturing of used fashion by retail partners positively/negatively impact your business?

16. To what extent are the systems and measures needed to reprocess used fashion currently available for businesses such as yours to be able to seamlessly participate in closed-loop systems?

Section D: Perceived risks

17. Do you think there would be any costs/risks of your business participating in the

reprocessing of used fashion from consumers ?

18. Do you think there would be any costs/risks of processing both new and used fashion?

19. Are there any other costs/risks you can identify of adopting closed-loop supply chain strategies in your business? What about risks?

Section E: Conclusion

20. What do you think would need to be done to encourage final consumers to participate in the activities of closed-loop supply chains?

21. What do you think would need to be done to encourage retailers to participate in the activities of closed-loop supply chains?

22. What do you think is needed for CMTs like yourself to be able to seamlessly adopt closed-loop supply chains?

23. If you could choose a/ another closed-loop supply chain strategy to incorporate into your business, which would it be? Why?

Preliminary Interview Guide: Non-profit organisation

Interviewee No:

Job Title:

Type of organisation:

Location of organisation:

Starting time of interview:

Ending time of interview:

Section A: Sustainable Supply Chain Management

1. What role does sustainability play in the global fashion industry supply chain? To what extent does this have an impact on stakeholders in South Africa?
- 2 (a). To what extent do you think SMME retailers and their supply chain suppliers/partners should be held accountable for how their consumers dispose of their fashion products?
- 2 (b). To what extent can SMME retailers work closely with their suppliers/partners to facilitate sustainable supply chains?
3. What role does the organisation have when it comes to sustainability in South Africa's fashion industry?
4. To what extent would/does incorporating sustainable practices impact the relationships that SMMEs would have with their supply chain suppliers/partners and other stakeholders?

Section B: Product Knowledge

5. Do you believe ethical consumption plays a key role in the purchasing decisions of South Africa's consumers, particularly young people and students?
6. What are your thoughts on the recycling/reuse/remanufacturing of used fashion products?

7. How familiar do you think South Africa's consumers are with recycled/remanufactured/secondhand products?
8. Are you familiar with many brands that incorporate used fashion products in South Africa for sustainability purposes?
9. How do you think consumers would respond to products remanufactured using used fashion?
10. How do you think consumers would respond to being provided with catalogues that include both new and used products?

Section C: Perceived benefits

11. Do you think there would be any benefits of SMME retailers facilitating the collection of used fashion from consumers for reuse/recycling/remanufacturing providing?
12. Do you think there would be any benefits of SMME retailers providing both new and used fashion for their consumers to purchase?
13. Do you think there would be any benefits of SMME retailers remanufacturing used fashion products?
14. Are there any other benefits you can identify of SMME retailers adopting closed-loop supply chain strategies?

Section D: Perceived risks

15. Do you think there would be any costs/risks of SMME retailers facilitating the collection of used fashion from consumers for reuse/recycling/remanufacturing providing?
16. Do you think there would be any costs/risks of SMME retailers providing both new and used fashion for their consumers to purchase?
17. Do you think there would be any risks associated with SMME retailers remanufacturing used fashion products?
18. Are there any other risks you can identify of SMME retailers adopting closed-loop supply chain strategies?

Section E: Conclusion

19. What do you think would need to be done to encourage consumers to participate in the activities of closed-loop supply chains?
20. What do you think is needed for SMMEs to be able to seamlessly adopt closed-loop supply chains?
21. Which closed-loop supply chain strategy/strategies would you consider most appropriate for SMME retailers to adopt and for the South African market? Why?
22. What type of consumer do you think would be more likely to support closed-loop supply chain initiatives in the South African fashion industry? Why?

APPENDIX C: QUESTIONNAIRE

SECTION A: DEMOGRAPHIC INFORMATION

1. What is your age?

a) 18- 24	b) 25-34	c) 35-44	d) 45-54	e) 55-64	f) Above 64
-----------	----------	----------	----------	----------	-------------

2. What is your gender?

a) Male	b) Female
---------	-----------

3. What is your marital status?

a) Single	b) Married	c) Life-long partnership	d) Divorced	e) Widowed
-----------	------------	--------------------------	-------------	------------

4. What is your highest level of education?

a) Below Matric	b) Matric certificate	c) Post-Secondary Certificate	d) Diploma	e) Degree	f) Master's	g) PhD
-----------------	-----------------------	-------------------------------	------------	-----------	-------------	--------

5. What is your current occupational status?

a) Student	b) Unemployed	c) Employed full-time	d) Employed part-time	e) Not formally employed-housewife/husband	f) Self-employed	g) Retired
------------	---------------	-----------------------	-----------------------	--	------------------	------------

6. How many children/dependents do you have?

a) None	b) 1-2	c) 3-4	d) 5-6	e) More than 6
---------	--------	--------	--------	----------------

SECTION B: CONSUMER BEHAVIOUR

7. How much do you spend on fashion in a year?

a) Less than R500	b) R500-R1000	c) R1001-R3000	d) R3001-R5000	e) More than R5000
-------------------	---------------	----------------	----------------	--------------------

8. How much of this is spent on used/recycled/remanufactured fashion?

a) Less than 10%	b) 10-15%	c) 16-30%	d) 31-50%	e) More than 50%	f) None of it
------------------	-----------	-----------	-----------	------------------	---------------

9. What motivates your fashion purchases? **Please select all applicable answers**

a) How people perceive you in your outfit.	b) Affordability	c) How you view yourself in your outfit.	d) Your daily activities	e) What is trendy/popular at the time.	f) Brand name.	g) The environmental/social impact of the item.	h) Other.
--	------------------	--	--------------------------	--	----------------	---	-----------

10. I often: **Please select all applicable answers .**

a) Recycle my worn fashion	b) Donate my worn fashion	c) Throw out my worn fashion	d) Keep my fashion for sentimental purposes	e) Create new fashion items with my worn items.	f) Other
----------------------------	---------------------------	------------------------------	---	---	----------

SECTION C: PRODUCT KNOWLEDGE (Please place a cross (x) in the appropriate box)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
11. I have purchased or considered purchasing secondhand fashion products.					
12. I have purchased or considered purchasing fashion products made from used fashion.					
13. I have experience with recycling my used fashion items.					
14. I have been sufficiently exposed to advertising/ information about used fashion products and where to return/purchase them.					
15. I am aware of retailers that provide a service for me to bring my used fashion for recycling/reuse/remanufacturing.					
16. Used fashion is/would be more attractive to purchase from a brand I perceive to be of high quality.					
17. With more information, I would be more likely to increase/consider purchasing used fashion.					
18. With more information, I would be more likely to return my worn fashion items for reuse/remanufacturing/recycling.					

SECTION D: PERCEIVED BENEFITS (Please place a cross (x) in the appropriate box)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
19. Used fashion is affordable or cheaper than new fashion					
20. Used fashion is unique and trendy.					
21. Returning/Purchasing used fashion is attractive to me because it benefits society and the environment.					
22. Purchasing used fashion would allow me to enjoy luxury brands at more affordable prices.					
23. Returning/Purchasing used fashion is attractive to me because it aligns with my values/lifestyle.					
24. The option to return clothes to retailers for reuse/remanufacturing/recycling would make it easier for me to become a more responsible consumer.					

SECTION E: PERCEIVED RISKS (Please place a cross (x) in the appropriate box)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
25. Used fashion is disgusting and unclean.					
26. The quality of used fashion is always lower than that of new.					
27. Used fashion is not trendy and is generally outdated.					
28. I would feel uncomfortable knowing that someone I do not know is wearing my used fashion items.					
29. Wearing used fashion would compromise my social status.					
30. Wearing used fashion from an unknown source is not acceptable in my culture/religion.					

SECTION F: ATTITUDES AND PERCEIVED BEHAVIOURAL NORMS (Please place a cross (x) in the appropriate box)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
31. When purchasing fashion, I am very concerned with how the brand treats society, its employees and the environment.					
32. I believe I have an ethical responsibility, as a consumer, to dispose of my used fashion products in an ethical manner.					
33. Consuming ethically is something I would personally like to do, regardless of the opinions of those close to me.					
34. In my household, I have full control of what fashion products I choose to purchase and when.					
35. In my household, I have full control of how I dispose of my used fashion items.					

SECTION G: SUBJECTIVE NORMS Please place a cross (x) in the appropriate box

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
36. I am concerned with how my peers and family members would view me if I wore used fashion.					
37. Purchasing/returning used fashion would make me responsible and ethical in the eyes of my peers/family members.					
38. If I were seen purchasing used fashion, many of my peers/family members would approve.					
39. If I were seen returning my used fashion for reuse/remanufacturing/recycling, many of my peers/family members would approve.					
40. I would return/purchase used fashion if my peers/family members did the same.					

SECTION H: SUPPORT OF CLOSED-LOOP STRATEGIES

41. Given the option, which types of **used** (secondhand/remanufactured) products are you **most** likely to purchase? **Please select one answer.**

a) Clothes	b) footwear	c) Bags	d) accessories	e) None
------------	-------------	---------	----------------	---------

42. Given the option, which types of **used** (secondhand/remanufactured) products are you **less** likely to purchase? **Please select one answer.**

a) Clothes	b) footwear	c) Bags	d) accessories	e) None
------------	-------------	---------	----------------	---------

43. I am more likely to return my used fashion for reuse/remanufacturing/recycling if:
Please select all applicable answers.

a) I am offered a discount or cash payment by the retailer.	b) it is convenient for me to do so.	c) I know where the proceeds are going.	d) I would not return my used fashion.	e) it is to a charity store/hospice	f) Other
---	--------------------------------------	---	--	-------------------------------------	----------

44. I am more likely to purchase secondhand/remanufactured fashion items if:
Please select all applicable answers.

a) I know the previous owner.	b) they are sold in a convenient and clean environment.	c) the returns policy is similar to that of new products.	d) I know where the proceeds are going.	e) they are remanufactured into new products.	f) I would not purchase used fashion.
-------------------------------	---	---	---	---	---------------------------------------

45. I am more likely to purchase secondhand/remanufactured fashion products if they are sold by a/an:

Please select one answer.

a) well-known retailer	b) hospice	c) private seller	d) informal street vendor	e) luxury brand	f) I would not purchase used fashion.	g) Other
------------------------	------------	-------------------	---------------------------	-----------------	---------------------------------------	----------

46. Which type of closed-loop strategy are you most likely to support?

Please select one answer.

a)secondhand sold by retailer	b) secondhand sold by secondhand store/charity store.	c) remanufactured fashion sold by retailer.	d) Recycling for use in different industries	e) None
-------------------------------	---	---	--	---------

Thank you for participating.

APPENDIX D: LETTER TO GATEKEEPERS



Date

Dear Sir/Madam

PERMISSION TO CONDUCT RESEARCH AS PART OF THE PhD QUALIFICATION

It is a requirement of our PhD qualification that the student completes a thesis based on research in a specific field of study. In this way students are given the opportunity to creatively link and discuss the theoretical aspects of the programme to the practical issues facing organisations in real life settings. Typically a thesis necessitates data gathering and the student is using semi-structured interviews specifically.

Student name: Chenai Muhwati (Student No. 209 521 787) has chosen to do a research project entitled: **Closed-loop supply chain adoption in the South African fashion industry.**

Your assistance in permitting access to your organisation for purposes of this research is most appreciated. Please be assured that all information gained from the research will be treated with the utmost confidentiality. Furthermore, should you wish any result/s or findings from the research “to be restricted” for an agreed period of time, this can be arranged. The confidentiality of information and anonymity of personnel will be strictly adhered to by the student.

I am available at any stage to answer any queries and/or to discuss any aspect of this research project.

If permission is granted, please sign the attached form.

Thank you for your assistance in this regard.

Yours sincerely

.....(Supervisor)

Lecturer Supply Chain Management

School of Management, IT & Governance

Gatekeeper's Consent

I in my capacity ashereby give permission to **Student name: Chenai Muhwati (Student No. 209 521 787)** to conduct research in my organisation.

The student MAY/MAY NOT (delete whichever is not applicable) use the name of the organisation in the dissertation.

Signature of Manager/Owner/Gatekeeper:.....

Company Stamp/Logo:

Company Address:

Company Contact Details:

Date:

APPENDIX E: ETHICAL CLEARANCE APPROVAL LETTERS



05 August 2021

Miss Chenai Muhwati (209521787)
School Of Man Info Tech & Gov
Pietermaritzburg Campus

Dear Miss Muhwati,

Protocol reference number: HSSREC/00000711/2019

Project title: Closed-loop Supply Chain Adoption in the South African Fashion Industry

Amended title: Closed-loop supply chain opportunities for SMME retailers in the South African fashion industry

Approval Notification – Amendment Application

This letter serves to notify you that your application and request for an amendment received on 30 July 2021 has now been approved as follows:

- Change in title

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form; Title of the Project, Location of the Study must be reviewed and approved through an amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

All research conducted during the COVID-19 period must adhere to the national and UKZN guidelines.

Best wishes for the successful completion of your research protocol.

Yours faithfully








.....
Professor Dipane Hlalele (Chair)

/dd

Humanities & Social Sciences Research Ethics Committee
UKZN Research Ethics Office Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Tel: +27 31 260 8350 / 4557 / 3587

Website: <http://research.ukzn.ac.za/Research-Ethics/>

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville

INSPIRING GREATNESS

19 May 2021

Miss Chenai Muhwati (209521787)
School Of Man Info Tech & Gov
Pietermaritzburg Campus

Dear Miss Muhwati,

Protocol reference number: HSSREC/00000711/2019

Project title: Closed-loop Supply Chain Adoption in the South African Fashion Industry

Approval Notification – Amendment Application

This letter serves to notify you that your application and request for an amendment received on 30 April 2021 has now been approved as follows:

- Change in Research Sites
- Additional participants (sample size)

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form; Title of the Project, Location of the Study must be reviewed and approved through an amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

All research conducted during the COVID-19 period must adhere to the national and UKZN guidelines.

Best wishes for the successful completion of your research protocol.






Yours faithfully



.....
Professor Dipane Hlalele (Chair)

/dd

Humanities & Social Sciences Research Ethics Committee
UKZN Research Ethics Office Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Tel: +27 31 260 8350 / 4557 / 3587
Website: <http://research.ukzn.ac.za/Research-Ethics/>

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville

INSPIRING GREATNESS



UNIVERSITY OF
KWAZULU-NATAL
INYUVESI
YAKWAZULU-NATALI

21 January 2020

Miss Chenai Muhwati (209521787)
School Of Man Info Tech & Gov
Pietermaritzburg Campus

Dear Miss Muhwati,

Protocol reference number: HSSREC/00000711/2019
Project title: Closed-loop Supply Chain Adoption in the South African Fashion Industry
Degree: PhD

Approval Notification – Expedited Application

This letter serves to notify you that your application received on 18 October 2019 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

This approval is valid until 21 January 2021.

To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

Yours sincerely,



Professor Urmilla Bob
University Dean of Research

/dd

Humanities & Social Sciences Research Ethics Committee
UKZN Research Ethics Office Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Tel: +27 31 260 8350 / 4557 / 3587
Website: <http://research.ukzn.ac.za/Research-Ethics/>

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville

INSPIRING GREATNESS