

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

Effect of Industry Changes on Quality and Sustainability in the Luxury Apparel Value Chains: The Case of Cashmere Industry in India

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

Doctor of Philosophy

in

Engineering

School of Food and Advanced Technology

Massey University, Palmerston North
New Zealand

Sheikh Imran Ishrat

2021

Abstract

Cashmere is an extremely fine and expensive natural fibre used to make a variety of luxury apparel products. The Kashmir region of India has been the traditional hub for manufacturing cashmere products for centuries and a source of livelihood to many artisan communities. However, changes in the cashmere industry such as the advent of mechanisation, use of blended fibres, exposure to wider markets and lack of quality standards is leading to social, economic, environmental, and quality issues in the craft industry. The aim of this interdisciplinary research was to determine and analyse the effect of these industry changes through the lenses of quality and sustainability.

This study was carried out as an ethnographic case study in the context of an industry making transition to the global consumer age. To this end, a single case study was conducted in Kashmir, India using qualitative methodological approaches. Data were collected using semi-structured interviews, observations and from secondary sources such as retailer websites and documents. A thematic analysis-based approach was adopted in this research.

Findings indicate that there are three distinct cashmere value chains functioning simultaneously in India: a traditional chain, a modern chain and a Geographical Indication-based chain. Among other implications of the industry changes, the two major aspects observed were the marginalization of cashmere artisanal communities and the lack of recognition of distinct product labelling options. This has economic, social and environmental ramifications and leads to quality issues. Therefore, for multiple cashmere value chains which produce a range of products, a product labelling mechanism distinguishing the place of fibre origin, type of the fibre used, and practices adopted during the manufacture is developed. Also, the adoption of Geographical Indications (GI) as a quality and sustainable development tool is considered, and a conceptual model (QASHMIR) is developed to model the sustainable development of the cashmere industry in India. A policy mechanism to implement and monitor the proposed model using the sustainability indicator system is suggested. Through this, a contribution to the body of knowledge surrounding luxury apparel value chains is made for academics, policy makers and industry practitioners.

Keywords: Sustainability, Cashmere, Geographical Indications, Quality, Value chains, Luxury fashion

Peer Reviewed Publications from the Research

- Ishrat, S.I., Grigg, N.P., Bezuidenhout, C.N., & Jayamaha, N.P. (2020). Sustainability issues in the traditional cashmere supply chain: Empirical evidence from Kashmir, India. *Sustainability*, 12(24). <https://doi.org/10.3390/su122410359> (Impact Factor: 3.251)
- Ishrat, S.I., Grigg, N., Pulakanam, V., & Jayamaha, N. (2019). The role and significance of Geographical Indication for sustainability of cashmere industry. *In proceedings of International Conference on Industrial Technology and Management* (pp.7-11). IEEE Press. doi: [10.1109/ICITM.2019.8710672](https://doi.org/10.1109/ICITM.2019.8710672)
- Ishrat, S.I., Grigg, N.P., Jayamaha, N.P., & Pulakanam, V. (2018). Cashmere industry: value chains and sustainability. In C.K.Y., Lo & J. Ha-Brookshire (Eds.), *Sustainability in luxury fashion business* (pp. 113-132), Springer. doi.org/10.1007/978-981-10-8878-0_7

Conference Presentations

- The role and significance of Geographical Indication for sustainability of Cashmere Industry. IEEE 8th International Conference on Industrial Technology and Management. University of Cambridge, United Kingdom, 2 – 4 March 2019.
- Cashmere manufacturing: a review of the traditional and the state-of-the-art practices on customer perception, Asia Pacific Quality Organization Conference, Rotorua, New Zealand, 20 – 23 November 2016.

ACKNOWLEDGEMENTS

First and foremost, I thank Allah (The Almighty) for blessing me with the opportunity and knowledge to successfully complete my thesis.

I am truly grateful and acknowledge the individual and institutional support I received during my doctoral journey. I would like to express my gratitude to my supervisor, Prof. Nigel Grigg, for the guidance and encouragement he provided during the research. Thanks, Nigel for all the support you provided when it was needed the most! I would like to also thank my co-supervisors, Dr. Nihal Jayamaha and Dr. Carel Bezuidenhout for their helpful advice and friendly approach which made this journey easier. I also thank Dr. Venkat Pulakanam for his valuable suggestions. It has been indeed a pleasure to learn from the seasoned researchers who helped broaden my horizon in more than one aspect.

This acknowledgement would be incomplete without mentioning the cooperation of the artisan communities and Government officials in Kashmir for sharing the information and their helpful insights with me. Their help and hospitality is much appreciated.

I take this opportunity to thank Ara Institute of Canterbury that provided support and resources in this research. Also, I would like to extend sincere thanks to my colleagues whose enthusiasm and sense of humour makes coming to work a pleasure.

To my friends, a hat tip goes to you all for being there whenever I needed.

I am eternally thankful to my parents for their unconditional love, having confidence in me and teaching me to explore the unknown. With their blessings, I have been able to accomplish my goals in adversity. And a special thanks to my siblings for being an integral part of this roller coaster ride.

I will take a moment to appreciate and thank my wife for being there to bear with my moments of self-doubt and impatience and to help me turn them into opportunity, conviction and confidence. Her presence made the journey as enjoyable as it possibly could be. Finally – a special mention of my two beautiful children for being a source of strength and motivation in my life...more than happy to compensate them for all the fun they would have missed as I was busy writing this thesis!

Contents

1	Introduction.....	1
1.1	Overview.....	1
1.2	Research Background	1
1.3	Research Aim and Questions	3
1.4	Research Relevance and Significance	4
1.5	Thesis Structure	6
1.6	Delimitation of Research and Assumptions.....	8
1.7	Conclusion	8
2	Literature Review.....	9
2.1	Overview.....	9
2.2	The Purpose and Scope of This Literature Review	9
2.3	Supply Chain Management (SCM).....	10
2.3.1	Definition and Concept of SCM	10
2.3.2	Evolution of SCM.....	11
2.3.3	Key SCM Aspects Related to This Research.....	13
2.3.4	Luxury Apparel Value Chains	17
2.4	Sustainability and Sustainable Development.....	20
2.4.1	Definition and Concept of Sustainability.....	20
2.4.2	Dimensions of Sustainability	20
2.4.3	Sustainable Development and Sustainable Development Goals (SDG).....	21
2.4.4	Sustainability in Luxury Apparel Value Chains	23
2.5	Geographical Indications (GI)	24
2.5.1	Definition and Concept of GI	24
2.5.2	GI as a Quality Mechanism.....	25
2.5.3	Product Differentiation Through GI	26
2.5.4	GI as a Sustainable Development Tool.....	27
2.6	Theoretical Framework.....	28
2.7	Research Gap (RG).....	30
2.8	Conclusion	31
3	Research Methodology	33
3.1	Overview.....	33
3.2	Research Scope	33
3.3	Research Philosophy.....	33

3.3.1	Ontological Perspective	34
3.3.2	Epistemological Perspective	34
3.3.3	Mixed Methods	36
3.3.4	Selected Research Approach.....	36
3.4	Case Study	38
3.4.1	Justification for case study research	38
3.4.2	Location of the case study.....	39
3.5	Data Collection	39
3.5.1	Purpose.....	40
3.5.2	Population	40
3.5.3	Procedure	41
3.5.4	Interviews.....	42
3.5.5	Observations	45
3.5.6	Photographs and Physical artifacts	46
3.5.7	Documents	47
3.6	Sample Selection.....	48
3.6.1	Cashmere retail websites.....	48
3.6.2	Cashmere artisans in Kashmir, India	49
3.6.3	Government Officials.....	51
3.6.4	Documents	51
3.7	Data Analysis	53
3.7.1	Coding.....	53
3.7.2	Thematic Analysis	55
3.8	Limitations of Methodology	56
3.8.1	Reliability.....	56
3.8.2	Validity	57
3.9	Ethical Considerations	58
3.9.1	Research Participants	58
3.9.2	Socio-cultural and Religious aspects	58
3.9.3	Research Data	59
3.10	Conclusion	59
4	Results – Insights into Cashmere Value Chains	60
4.1	Overview.....	60
4.2	Research Question One.....	60
4.3	Stage 1: Procurement	62

4.3.1	Location	62
4.3.2	Cashmere Sourcing Channels	65
4.4	Stage 2: Fibre Processing.....	67
4.4.1	Dehairing.....	67
4.4.2	Cleaning and Sorting.....	69
4.4.3	Fibre Blending	70
4.5	Stage 3: Transformation.....	71
4.5.1	Spinning	71
4.5.2	Dyeing.....	73
4.5.3	Weaving	75
4.5.4	Block Printing	82
4.5.5	Embroidery	83
4.5.6	Tweezing.....	84
4.5.7	Washing	84
4.6	Stage 4: Labelling	85
4.6.1	Standards.....	85
4.7	Cashmere Value Chains	88
4.7.1	Traditional Value Chain.....	88
4.7.2	Modern Value Chain.....	88
4.7.3	Geographical Indication (GI) Value Chain.....	88
4.8	Conclusion	98
5	Results - The Effect of Cashmere Industry Changes on Processes and Products.....	100
5.1	Overview.....	100
5.2	Research Question Two	100
5.3	Effect on Cashmere Processes	101
5.3.1	Fibre Concerns as a result of industry changes.....	101
5.3.2	Spinning issues as a result of industry changes	106
5.3.3	Weaving aspects as a result of industry changes	108
5.4	Effect on cashmere product quality as a result of industry changes	113
5.4.1	Sub-standard Products	113
5.5	Effect on the Environment as a result of industry changes.....	117
5.6	Conclusion	120
6	Results – The Effect of Cashmere Industry Changes on Stakeholders.....	122
6.1	Overview.....	122
6.2	Research Question Three	122

6.3	Effect on Artisans as a result of industry changes	122
6.3.1	Financial Challenges	123
6.3.2	Social Concerns	128
6.3.3	Health Hazards	135
6.4	Effect on Consumers as a result of industry changes	137
6.4.1	Product Awareness.....	137
6.4.2	Trust or the Lack Thereof	138
6.5	Effect on Government Institutions as a result of industry changes	140
6.5.1	Functional Constraints	141
6.5.2	Support Mechanism	145
6.5.3	Lack of Ownership.....	147
6.5.4	Geographical Indications	150
6.5.5	Artisans' Expectations	155
6.6	Conclusion	158
7	Discussion	161
7.1	Overview.....	161
7.2	Cashmere Value Chains	161
7.2.1	Traditional Chain	162
7.2.2	Modern Chain	162
7.2.3	Geographical Indication Based Chain	164
7.3	Product Quality	167
7.3.1	Procurement perspective	167
7.3.2	Spinning and Weaving perspective.....	169
7.3.3	Consumers' perspective	170
7.4	Processes	172
7.4.1	Procurement and Processing	172
7.4.2	Transformation.....	174
7.4.3	Environmental Concerns.....	175
7.4.4	Product Labelling.....	176
7.5	Artisan communities	179
7.5.1	Economic Aspects.....	179
7.5.2	Social Issues.....	181
7.6	Government Institutions.....	184
7.6.1	Initiatives and their impact on the cashmere industry	184
7.7	Conclusion	190

8	The Conceptual Model.....	191
8.1	Overview.....	191
8.2	Research Question Four.....	191
8.3	Revisiting the theoretical framework.....	191
8.4	Collated research findings.....	192
8.5	The effects of research findings on the theoretical framework.....	194
8.6	Model Development.....	196
8.7	Model Implementation Guidelines	200
8.7.1	Industry constraints.....	200
8.7.2	Implementation considerations	201
8.8	Monitoring mechanism	203
8.8.1	Sustainability Indicators.....	204
8.9	Application of the model to other industry settings.....	205
8.10	Conclusion	205
9	Conclusion, Contribution and Further Research.....	207
9.1	Overview.....	207
9.2	Research Purpose	207
9.3	Research Conclusion.....	208
9.4	Research Contribution	210
9.4.1	Theoretical contribution.....	210
9.4.2	Practice based contribution	211
9.4.3	Policy related contribution.....	212
9.5	Further Research	215
9.6	Concluding Remarks.....	215
	References.....	217
APPENDIX A	Cashmere Retail Websites.....	241
APPENDIX B	Initial Framework of Queries (Artisans).....	242
APPENDIX C	Initial Framework of Queries (Manufacturers).....	244
APPENDIX D	Interview Questions	246
APPENDIX E	Classification of Codes in NVivo	250
APPENDIX F	Classification of luxury hair fibres	257
APPENDIX G	Distinction between wool and fibre	258
APPENDIX H	Srinagar District Magistrate Order.....	260
APPENDIX I	Letter of the District Industries Centre, Srinagar	262
APPENDIX J	Letter of the Handloom Development Department.....	263
APPENDIX K	Deputy Director Handicrafts (Quality Control) Letter.....	264
APPENDIX L	Cashmere Product Labelling Checklist.....	267
APPENDIX M	Sustainable Development Goals	268

List of Figures

Figure 1.1 Major cashmere producing countries and their contribution in the cashmere trade.	2
Figure 1.2 Logical flow of the thesis chapters.	8
Figure 2.1 Dimensions of sustainability	21
Figure 2.2 The theoretical framework.	29
Figure 2.3 Classification of literature review and research gap.	31
Figure 3.1 Flowchart of the research design and outcomes of the study.	37
Figure 3.2 Location of the Kashmir valley in India (a) and the districts selected for the case study in the Kashmir valley (b).	39
Figure 3.3 Data collection process across different phases of the research.	43
Figure 3.4 Online retailers of cashmere products	48
Figure 3.5 A streamlined codes-to-theory model for qualitative inquiry.	54
Figure 3.6 Data sources and thematic analysis framework to capture the effect of industry practices on the cashmere value chain processes, products and stakeholders.	55
Figure 4.1 A cashmere value chain operating in India.	61
Figure 4.2 Map of India highlighting the Kashmir region.	63
Figure 4.3 Natural habitat of cashmere goat in Ladakh region.	64
Figure 4.4 A comparison of the diameter range of different natural fibres	65
Figure 4.5 Cashmere fibre production in the Kashmir region	66
Figure 4.6 Cashmere fibre sourcing channels in India	67
Figure 4.7 Raw cashmere fibre (<i>Phamb</i>) obtained after combing the cashmere goat	68
Figure 4.8 SEM (1500x) view of raw cashmere fibre	68
Figure 4.9 SEM (1200x) comparison of manually (a) and mechanically (b) dehaired cashmere fibres	69
Figure 4.10 A Kashmiri woman spinning the cashmere yarn on a spinning wheel (<i>Yinder</i>)	71
Figure 4.11 SEM (1200x) view of hand spun cashmere yarn (a) and SEM (1200x) view of machine spun yarn (b).	72
Figure 4.12 Yarn collected over the Meller (a) and transferring of the yarn to <i>Yerentul</i> (b)	73
Figure 4.13 The dyer is looking into a shade card for a shade to dye (a), boiling the dye in a container (b), dyed yarn is being manually taken off from a boiling pot (c).	74
Figure 4.14 A <i>Krass</i> containing yarn rolls (a), a wooden wheel for transferring the yarn rolls from the <i>Krass</i> (b), yarn transferred from the <i>Krass</i> onto the wooden wheel (c).	76

Figure 4.15 Yarn is being lifted from the wheel (a), yarn is being transferred on to a cylindrical log (b), yarn is being shifted from the cylindrical log (c), yarn is being arranged in a specific pattern for weaving on a handloom (d).....	76
Figure 4.16 Foot pedals in a handloom (a), a weaver working on an advanced handloom (b)	78
Figure 4.17 A weaver working on a traditional handloom showing the Muk (a), a closer look of the Muk (b)	79
Figure 4.18 Kani sticks (a), yarn for Kani weaving (b), codes (Taleem) for Kani weaving (c), Kani weaving handloom (d), design for Kani weaving (e), Kani shawl in the making (f).....	80
Figure 4.19 A printing block (a), various block print designs (b), black ink-based block print (c), white ink-based block print (d).....	82
Figure 4.20 A partially embroidered shawl (a), threads used for embroidery (b), plain embroidery (c), fancy embroidery (d).....	83
Figure 4.21 A tweezer working on a shawl	84
Figure 4.22 A washerman striking the fabric on a cement platform (a), a shawl being washed by a washerman (b), rolling iron press to dry the fabric (c), fabric being sun dried (d).....	85
Figure 4.23 Website to track and trace the label authenticity	86
Figure 4.24 ‘Kashmir Pashmina’ GI labels	87
Figure 4.25 Multiple cashmere value chains in action.	90
Figure 4.26 Distribution of cashmere products based on the market survey.....	91
Figure 4.27 Cashmere retailers with different types of products and number of product listings	92
Figure 4.28 Cashmere product types and their price range	95
Figure 4.29 Distinct labelling scenarios in the traditional cashmere industry in India.....	97
Figure 5.1 The dyeing process involves colouring the yarn (a), discharging the water in the drain (b) and washing of hands post completing the process (c).....	118
Figure 5.2 Environmental concerns in the cashmere industry through washing practices and inappropriate outlets of waste leading to water clogging (a) Washing a handmade cashmere shawl (b) Water clogging near the washing facility	119
Figure 7.1 SEM (x1200) representation of the impact of industry practices on the cashmere supply chain processes	168
Figure 7.2 An overview of the cashmere value chain capturing the effect of industry changes	171

Figure 8.1 A conceptual model representing Quality Assured, Sustainable and Holistic Mechanism using Institutional Resources (QASHMIR) for the cashmere industry.....197

List of Tables

Table 3.1 Difference between quantitative and qualitative research methodologies.....	35
Table 3.2 Field observations: context, content and concepts.....	45
Table 3.3 Summary of data sources.....	47
Table 3.4 Primary data respondents across multiple sites in the Kashmir valley.....	49
Table 3.5 Classification of artisans based on their age and experiences in their craft	50
Table 3.6 Documentary evidence collected from various sources	52
Table 4.1 Manual Spinning Process (Field notes)	72
Table 4.2 Dyeing Process (Field notes)	74
Table 4.3 Preparing the yarn for weaving (Field notes)	77
Table 4.4 Weaving Process (Field notes)	79
Table 4.5 Kani Weaving (Field notes).....	81
Table 4.6 Comparison of cashmere supply chain practices.....	89
Table 4.7 Gender specific distribution of cashmere products.....	93
Table 4.8 A summary of the cashmere product categories and pricing based on a sample of 31 retailers and 3582 products. All prices are in New Zealand dollars (NZD)	94
Table 4.9 Labelling options of cashmere products.	96
Table 5.1 The theme fibre concerns, its categories and sub-categories.....	101
Table 5.2 The theme spinning issues, its categories and sub-categories.	106
Table 5.3 The theme weaving aspects, its categories and sub-categories.	108
Table 5.4 Description of a shawl (summarised extract from the hand looms Act 1985)	110
Table 5.5 The theme sub-standard products, its categories and sub-categories	113
Table 5.6 The theme environmental concerns, its categories and sub-categories.	117
Table 6.1 The theme financial challenges, its categories and sub-categories.....	123
Table 6.2 The theme social concerns, its categories and sub-categories.....	128
Table 6.3 The theme health hazards, its categories and sub-categories.....	136
Table 6.4 The theme product awareness, its categories and sub-categories.....	137
Table 6.5 The theme Trust or the Lack Thereof, its categories and sub-categories	138
Table 6.6 The theme government institutions, its categories and sub-categories.....	140
Table 6.7 The theme functional constraints, its categories and sub-categories.	141
Table 6.8 The theme support mechanism, its categories and sub-categories.	146
Table 6.9 The theme lack of ownership, its categories and sub-categories.	148
Table 6.10 The theme Geographical Indications, its categories and sub-categories.	150

Table 6.11 The theme artisans’ expectations, its categories and sub-categories.	156
Table 7.1 A trade-off summary of the traditional and modern cashmere value chains.	166
Table 7.2 Overview of the effect of industry changes on the cashmere value chains.	184
Table 7.3 Summary of the effect of the cashmere industry changes on the stakeholders and sustainability aspects.....	186
Table 7.4 Summary of the industry changes on the cashmere value chains in India.	189
Table 8.1 Classification of the research findings based on the theoretical framework.	192
Table 8.2 Themes presented in the QASHMIR model.	198
Table 9.1 Research questions and their key findings.....	208
Table 9.2 Research Summary	214

List of Abbreviations

AATCC – American Association of Textile Chemists and Colorists

AHL – Advanced Handloom

BTRA – Bombay Textile Research Association

CCMI – Cashmere and Camel Hair Manufacturers Institute

CDI – Crafts Development Institute

CSD – Commission for Sustainable Development

CP – Cashmere Processes

CrPC – Criminal Procedure Code

CSR – Corporate Social Responsibility

DIC – Directorate of Industries and Commerce

GI – Geographical Indication

HCL – Hydrochloric Acid

IIM – Indian Institute of Management

IIT – Indian Institute of Technology

INR – Indian Rupee

IS – Institutional Support

ISO – International Standards Organisation

J&K – Jammu and Kashmir

JKHDD – Jammu and Kashmir Handloom Development Department

JKHSEC – Jammu and Kashmir Handicrafts Sales and Export Corporation

KHPT – Kashmir Handloom Pashmina Trust

KPKU – Kashmir Pashmina Karigar Union

MBA – Master of Business Administration

MCM – Masters in Craft Management

MSME – Micro, Small and Medium Enterprises

NGO – Non-Government Organizations

NID – National Institute of Design

NZD – New Zealand Dollar

PQR – Product Quality Risk

PTQC- Pashmina Testing and Quality Certification

QASHMIR – Quality Assured Sustainable and Holistic Mechanism using Institutional Resources

QM – Quality Management
RFID – Radio Frequency Identification
SC – Supply Chain
SCM – Supply Chain Management
SCQM – Supply Chain Quality Management
SCRM – Supply Chain Risk Management
SD – Sustainable Development
SDG – Sustainable Development Goals
SEM – Scanning Electron Microscope
SFAL – Secure Fusion Authentication Labels
SICOP – Small Scale Industries Development Corporation
SKAUST – Sher-e-Kashmir University of Science and Technology
SME – Small and Medium Enterprises
SSCM – Sustainable Supply Chain Management
TBL – Triple Bottom Line
THL – Traditional Handloom
TQM – Total Quality Management
TRIPS – Trade Related Aspects of Intellectual Property Rights
UN – United Nations
VCA – Value Chain Approach
VSM – Value Stream Mapping
WCED – World Commission on Environment and Development
WTI – Wildlife Trust of India

1 Introduction

1.1 Overview

In this chapter, different aspects considered in the research are presented. In Section 1.2, a description of the research background is presented focusing on the need for the study to address the knowledge gap and to generate interest among the wider research community and industry practitioners surrounding the cashmere industry. Section 1.3 highlights the research aim and the questions investigated in the study. In Section 1.4, the relevance and significance of research demonstrates the reasons to conduct the study and its importance in the context of a developing economy. Section 1.5 provides an overview of the thesis describing the logical flow of the chapters to address the research problem. In Section 1.6, delimitations and assumptions of the research are presented. The conclusion is presented in Section 1.7.

1.2 Research Background

Cashmere is an extremely fine natural fibre extracted from the underbelly of a unique goat primarily found in mountainous regions of Asia. In India, cashmere is also known as *Pashmina* or *Pashm* or 'soft gold' (Bumla *et al.*, 2012; Yaqoob *et al.*, 2012). In literature these terms are used interchangeably however, for consistency the term cashmere is used in this research throughout.

Cashmere is the most expensive natural fibre (Ryder, 1984); and contrary to general belief, cashmere is a speciality hair and not wool (Kumar *et al.*, 2015). Cashmere fibre is biodegradable, not flammable and serves as an effective insulation material throughout the year (Faust, 2013). Cashmere fibre is used to make a variety of luxury apparel products (Faust, 2013) such as scarves, shawls, pullovers and cardigans to name a few. Globally, the annual production of cashmere, which is around 15 to 20 thousand tonnes annually (Lakshmanan *et al.*, 2016) is negligible in the world textile market (Ishrat *et al.*, 2018). Regardless, in the luxury apparel industry, almost all major fashion brands such as Gucci, Armani, Prada, Louis Vuitton, Stella McCartney etc. include some cashmere products in their product line as part of their luxury components signifying its importance in the luxury apparel industry. At present, some European and Asian countries not only produce cashmere (fibre and products), but also export it to different markets resulting in a multi-billion-dollar global cashmere trade (Waldron *et al.*,

2014; Berger *et al.*, 2013). In Figure 1.1, major cashmere producing countries are presented along with their contribution in the global cashmere trade (Shakyawar *et al.*, 2013; Imasheva *et al.*, 2014; Ansari-Renani 2014; Singh, 2015; Ishrat *et al.*, 2018).

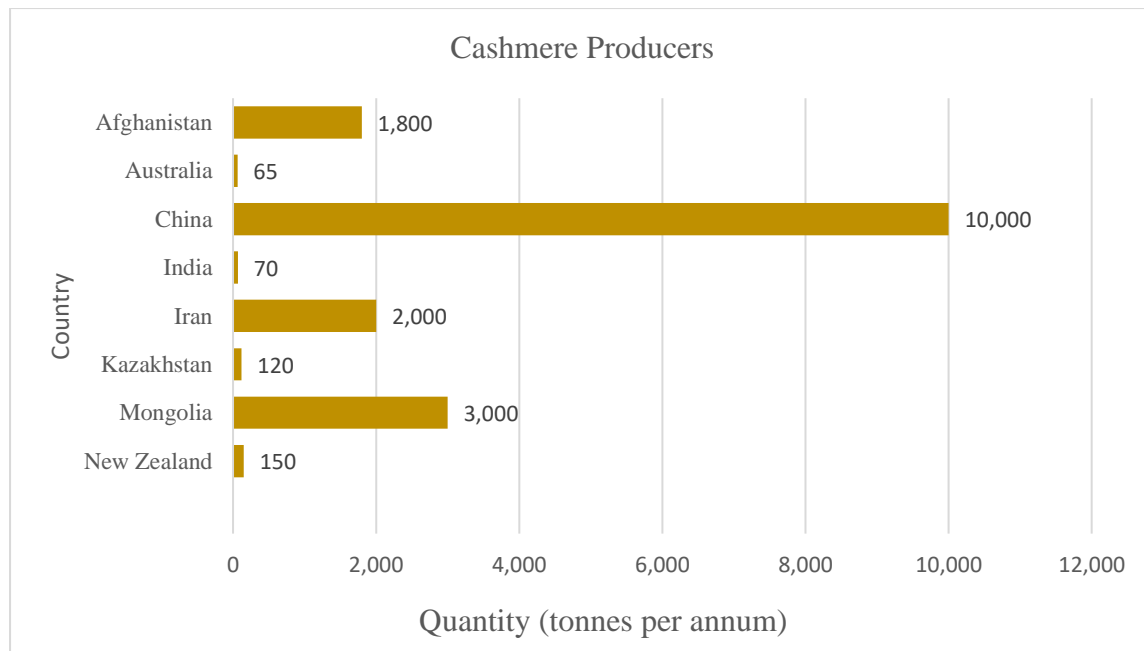


Figure 1.1 Major cashmere producing countries and their contribution in the cashmere trade.

China and Mongolia are foremost in producing different grades of cashmere fibres and products (Waldron *et al.*, 2014). A few other Asian countries such as Afghanistan, Kazakhstan, Nepal, Iran and India also produce cashmere articles (Imasheva *et al.*, 2014; Ansari-Renani, 2015; Shakyawar *et al.*, 2013). Furthermore, Britain, Australia and New Zealand also deal with various cashmere derivatives in different quantities (Shakyawar *et al.*, 2013).

As evident from Figure 1.1, the production of cashmere fibre in India is significantly less than that of China and Mongolia (Shakyawar *et al.*, 2013). However, the products handmade in the Kashmir valley (India), are arguably unmatched in sophistication, aesthetics, expertise, and artistic value (Ishrat *et al.*, 2020). The artisanal mastery, exclusive and sophisticated craftsmanship of the cashmere articles produced in the Kashmir region are unique and much sought after in the domestic and international markets since the 18th century (Ammayappan *et al.*, 2011; Ashraf *et al.*, 2016). For centuries, the cashmere craft can be labelled as the most significant ambassador of Kashmir, and the name ‘*cashmere*’ has been coined to signify its importance in the Indian sub-continent (Ishrat *et al.*, 2018). Around seven million people reside in the Kashmir valley (Census, 2011) and for the local populace, the cashmere industry is a one

of the preferred employment options which provides sustenance to more than 300,000 artisans involved in this industry in various capacities (Sheikh, 2014).

Over a period, luxury cashmere products produced in India have reached most parts of the world and are celebrated for their fineness, warmth, softness and elegance (Waldron *et al.*, 2014; Ashraf *et al.*, 2016; Ishrat *et al.*, 2020). Early instances of cashmere products include *Kashmiri* shawls reaching Britain and parts of Europe in the mid-eighteenth century via officials of the East India Company (Zutshi, 2009). A few antique cashmere articles are placed in the British museum depicting their significance (British Museum) among the royalty. In another instance, Emperor Napoléon Bonaparte presented an exquisite *Kashmiri* shawl to impress Empress Joséphine de Beauharnais, who subsequently became passionate about similar articles (Ashraf *et al.*, 2016). With globalisation, the demand for cashmere products is growing steadily (Ansari-Renani, 2014) wherein the cashmere fibre is the prime constituent to make a range of exquisite products (Lakshmanan *et al.*, 2016). Due to the increase in the product demand, the cashmere industry in India has undergone significant changes which include the advent of mechanisation, use of blended fibres, exposure to wider markets and lack of quality standards. As a result of these changes, the cashmere industry stakeholders and operations are severely impacted effecting quality and sustainability aspects surrounding the cashmere industry in India and forms the basis for this research inquiry.

1.3 Research Aim and Questions

The aim of the research is to determine and analyse the effect of the changes such as the advent of mechanisation, use of blended fibres, exposure to wider markets and lack of quality standards in the cashmere industry in India through the antecedents of quality and sustainability. Based on this research aim, four research questions along with their objectives are presented below.

Research Question 1: What is the role and significance of artisanal communities and product labelling in the cashmere value chains in India?

- Objective 1: Explore the cashmere value chains to gain an in-depth understanding of the processes and artisans involved in the cashmere industry.
- Objective 2: Understand the existing state of labelling and develop a labelling distinction mechanism in the cashmere industry.

Research Question 2: What is the effect of the industry changes on the cashmere value chain processes and products?

- Objective 3: Evaluate the effects of industry changes on cashmere processes.
- Objective 4: Examine the effects of industry changes on product quality.
- Objective 5: Identify the effects of industry changes on the environment.

Research Question 3: What is the effect of the cashmere industry changes on stakeholders?

- Objective 6: Provide a detailed account of the effect of the industry changes on cashmere artisan communities.
- Objective 7: Identify the key aspects affecting the cashmere consumers.
- Objective 8: Assess the response of the government institutions on the cashmere industry changes.

Research Question 4: Develop a conceptual model for the sustainable development of the cashmere industry in India.

- Objective 9: Provide guidelines to implement the model and monitor it through sustainability indicators.

1.4 Research Relevance and Significance

Based on Agenda 2030 of the United Nations (UN Agenda 2030, n.d.), achieving sustainability conforming to the Sustainable Development Goals (SDG) is gaining attention as an approach for the sustainable development of the industries globally (Shi *et al.* 2019). The government of India also initiated the 'Make in India' program to encourage the domestic manufacturing sector under various categories (Das, 2018; Baliga *et al.*, 2020). In this initiative, the textile industry is considered as one of the sectors for the governmental support and promotion for the sustainable development of industries in India.

In literature, there is limited attention given to the cashmere industry. Furthermore, there is little awareness of the issues surrounding cashmere fibre and products (Talib, 2015; BBC, 2020). The cashmere industry in India affects a sizeable population of the Kashmir region involved with the cashmere craft (Sheikh, 2014; Ishrat *et al.*, 2020). Neglecting the issues concerning a range of vulnerable artisan communities associated with the traditional cashmere value chain is susceptible to the sustainability aspects in the region and may have far reaching implications for the industry stakeholders and the centuries old territorial craft. Therefore, this

is a crucial time to examine the cashmere industry and conduct an in-depth study on the effect of the cashmere industry changes on the stakeholders.

In developed economies, Geographical Indications have demonstrated their effectiveness to protect and develop the territorial products (Fernandez-Ferrín *et al.*, 2017). However, similar efforts in the developing countries are evolving fast. Literature suggests, in developing economies, Geographical Indications provides a pathway for economic, social and environmental sustainability of the territory (Belletti *et al.*, 2017; Covarrubia, 2019; Vandecandelaere *et al.*, 2021) and help streamline processes to improve quality (Arfini & Bellassen, 2019; Belletti *et al.*, 2017). Based on the GI focused sustainability approach presented in Food and Agriculture Organisation (FAO, 2009) of the United Nations, the sustainable development of the cashmere industry in India is addressed for the following reasons.

1. To achieve the SDGs, place-based processes are considered critical drivers to achieve rural transformations. In India, cashmere value chains highlight the processes identified through territorial approaches where economic and social effects play a significant role on the territory.
2. Geographical Indications help; establish fair income, protect natural resources and preserve local traditions. In the cashmere industry, wage structure issues need to be addressed as much as the local traditions and natural resources needs to be preserved.
3. Geographical Indications establishes quality specifications. In the cashmere industry, the lack of industry standards and controls have led to a multitude of practices in the region resulting in the counterfeit products by compromising on the traditional practices.
4. For territorial products, product differentiation is critical in establishing a niche consumer base. Through legal frameworks, Geographical Indications in the cashmere industry can be a strong and effective proponent to establish awareness of distinct value chains.
5. Geographical Indications promote governance among the local communities. For the sustainable development of the cashmere industry in India, governance of value chains is a crucial aspect that needs to be supported through institutional support.

Therefore, considering the Geographical Indications based approach, sustainability and quality is addressed for the sustainable development of the cashmere industry in India.

1.5 Thesis Structure

The thesis contains nine chapters along with a list of references and appendices. The chapters create a logical flow to the thesis organisation (Figure 1.2) and their outline is presented as follows. In chapter two, the literature review captures the extant literature surrounding supply chain management and the key aspects related to this research, sustainability and Geographical Indications in the context of luxury apparel chains. Based on the literature findings, a theoretical framework is presented to address the gaps identified in the extant literature. Chapter three presents the research methodology which elaborates on the philosophical lens considered in the study. This chapter also outlines the research methods used and the approaches adopted for the data collection and analysis in the study. Chapter four presents the results of research question one and elaborates the status of existing cashmere value chains wherein a detailed description of various processes and actors involved with cashmere operations is discussed. Chapter five presents the results of the second research question and explains the effect of the industry changes on cashmere chain processes and product quality. Whereas chapter six describes the results of research question three regards the effect of the industry changes on cashmere industry stakeholders. The research questions in chapters five and six are addressed through thematic analysis conducted on the data collected from the ethnographic case study.

Based on the research findings presented in chapters four, five and six, chapter seven presents an in-depth discussion based on the analysis of the results. In chapter eight, based on the research findings, a conceptual model is developed, and its implementation mechanism is presented capturing the considerations for the sustainability development of the cashmere industry in India. Finally, chapter nine presents the summary of the study by synthesising the research objective and key findings. Furthermore, this chapter presents the contribution of the study to theory and for industry practitioners and presents research directions for future research.

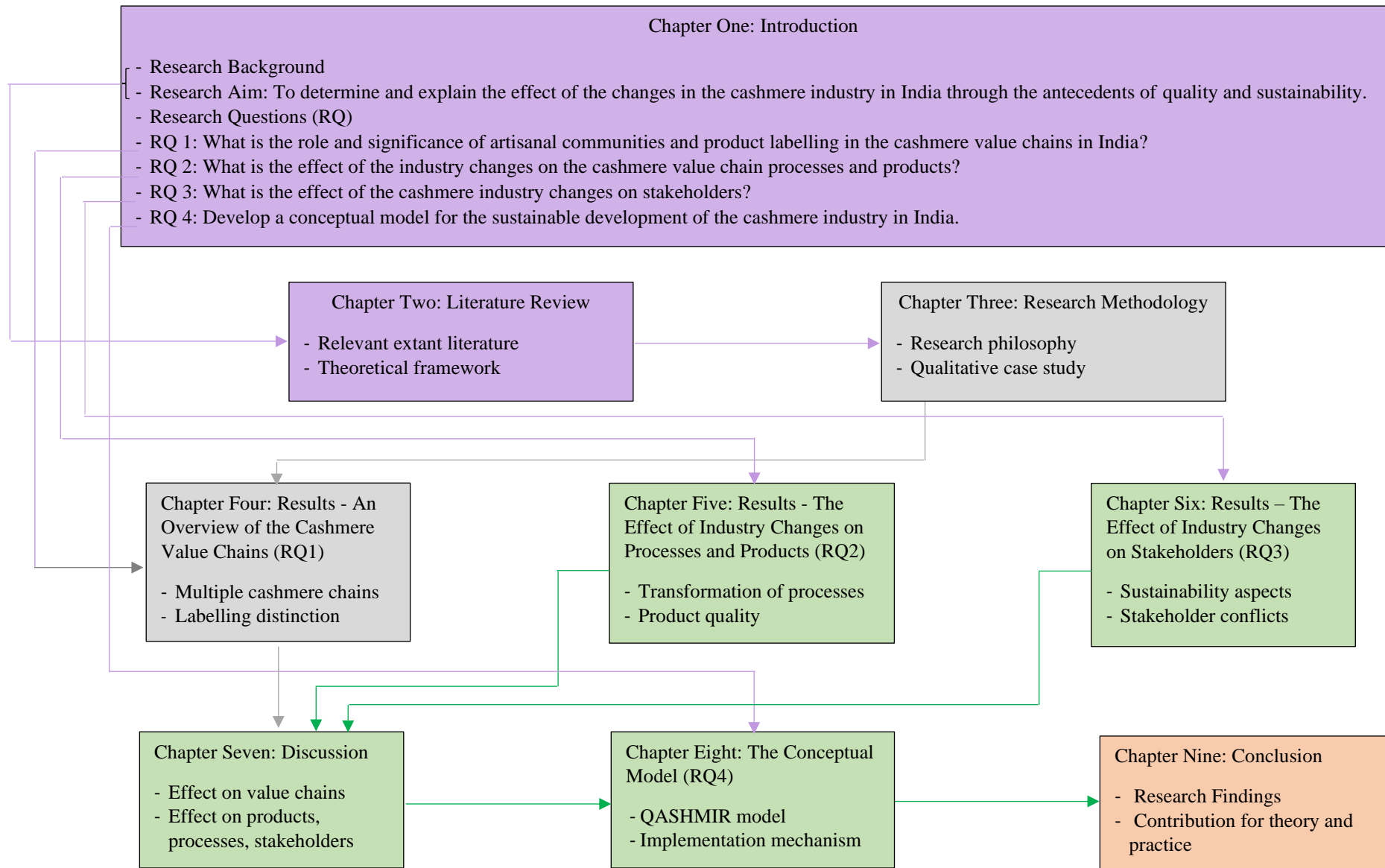


Figure 1.2 Logical flow of the thesis chapters.

1.6 Delimitation of Research and Assumptions

There are some limitations to this interdisciplinary research. First, value chains in the study are not explored from the Value Chain Analysis (VCA) or Value Stream Mapping (VSM) perspective which are preferred approaches in the literature. Due to the scope and focus of the study, it was not required to capture these approaches. However, not capturing the value stages through VCA or VSM may lead to some shortcomings in the research. Second, the study only considers the cashmere industry in India. The socio-cultural dynamics and institutional mechanisms are unique to this territory, so the findings of the study may have limited generalizability. Third, the direct views of the cashmere consumers were not considered in this research. To get a broader view of cashmere consumers' preferences, it was necessary to capture a wide spectrum of the cashmere markets which would be a true representative of the consumer preferences. Therefore, due to resource and time constraints, data from the consumers were not collected. However, to mitigate this aspect, an alternative approach was adopted to get a comprehensive view of the global cashmere market the from the cashmere retail websites. Nevertheless, not capturing preferences directly from the consumers may be a shortcoming of the study. The findings of the study are based on certain assumptions. It is assumed that the knowledge and experience of the study participants, involved with various cashmere processes, is adequate to provide an appropriate and unbiased response which is critical in any empirical investigation. Also, at the time of study, the information provided on the cashmere retail websites is updated and reflects the market requirements.

1.7 Conclusion

The dynamic and ever-changing luxury apparel fashion (*prêt-à-porter* and *couture*) industry is expected to respond to the changing market pressures. Over the years, the luxury apparel cashmere industry in Kashmir, India has undergone significant changes. This research attempts to investigate the effect of the industry changes such as the advent of mechanisation, use of blended fibres, exposure to wider markets and lack of quality standards on economic, social, environmental sustainability and product quality in the cashmere operations. This transformation has presented unprecedented sustainability and quality related challenges to the cashmere industry stakeholders. In this study, an attempt is made to explore and understand the cashmere chain operations and propose a way forward for the sustainable development of the cashmere industry in India.

2 Literature Review

2.1 Overview

In this chapter, a review of the extant literature is presented to lay the foundations for the study. In Section 2.2, the purpose and scope of literature reviewed in this research is presented. Section 2.3 covers the background of supply chain management (SCM) and explores the key SCM areas related to this research including supply chain quality management, supply chain risk management and luxury value apparel chains. Section 2.4 presents the concept of sustainability and its dimensions prior to discussing sustainable development and sustainable luxury apparel value chains. In Section 2.5, Geographical Indications (GI) and its application surrounding quality and sustainability is discussed. Based on the literature review, a theoretical framework is presented in Section 2.6 whereas the research gap is identified in section 2.7 which formed the basis for this research. Finally, Section 2.8 presents the chapter conclusion covering the highlights of the literature review.

2.2 The Purpose and Scope of This Literature Review

The study of relevant extant literature is compulsory for all research inquiries. Prior research provides insights into the body of knowledge surrounding the study discipline(s) and motivates for further research investigations (Snyder, 2019). In this research, the literature surrounding the areas of supply chain management (SCM), Sustainable Development (SD) and Geographical Indications (GI) is reviewed. The criteria for selecting these study areas is based on the research questions (Section 1.3) considered in this work. Due to the multidisciplinary nature of this research inquiry, it is important to define and discuss the fundamental constructs relevant to this study. For instance, SCM, SD and GI are vast and multi-faceted areas and the literature surrounding these domains is transdisciplinary across different industrial settings. Necessitated by the relevance of this study and the multidimensional nature of SCM, SD and GI, the body of knowledge covered in this literature review transcends disciplinary boundaries and encompasses different perspectives. In this backdrop, one theoretical field of study would not suffice to explore the multitude of complex issues in the context of this research. Therefore, the interconnections and crossovers of these disciplines are critical to define before identifying the research gap in the literature

surrounding SCM, SD and GI. Furthermore, a theoretical framework has been developed linking the key constructs obtained from the literature findings.

2.3 Supply Chain Management (SCM)

2.3.1 Definition and Concept of SCM

The term ‘Supply Chain Management’ was first coined in early 1980’s (Oliver & Weber, 1982). In literature, supply chains have been defined from many aspects. For instance, Christopher (2011, p.13) defines a supply chain as a network of upstream and downstream organisations which link their business processes and activities to generate value by delivering products i.e., goods and services to the end-user. On similar lines, Quinn (1997) provides an abstract view of supply chains and describes it as a set of activities that help move goods from the procurement stage (raw material) to the point of consumption (end-user), however, the author further elaborates the scope of SCM operations and considered production aspects such as inventory management, shipping and storage of materials and customer service. Another widely acknowledged definition of the supply chain is stated by Mentzer *et al.* (2001) who considered the financial and information flows across the upstream and downstream operations as an integral part of the chain operations between multiple entities. Predominantly, these definitions approach the supply chain operations from the manufacturing perspective. However, Simchi-Levi *et al.* (2003) captured and highlighted the changed supply chain paradigm i.e., from ‘*supply-driven*’ to ‘*consumer-demand*’ and stated that, “SCM is a set of approaches utilised to efficiently integrate suppliers, manufacturers, warehouses, and stores, so that merchandise is produced and distributed at the right quantities, to the right locations, at the right time, in order to minimise system-wide costs while satisfying service level requirements”.

Simplistically, a supply chain can be considered as a set of activities involved in meeting customer’s requirements through delivering goods and services (Chopra & Meindl, 2016, p.14). In a supply chain, suppliers, manufacturers, distributors and retailers coordinate their efforts for the conveyance of goods in the form of raw materials, work-in-process and final deliverables (Chopra & Meindl, 2016, p. 15). In SCM, logistics providers play a significant role in ensuring the timely delivery of the materials and finished products (Chopra & Meindl, 2016, p.414; Christopher, 2011, p. 12). Gradually, operations including procurement, distribution and other logistics’ related aspects became integral part of the supply chain operations. In this process, management of various aspects of material and information flows

through designing, planning, monitoring and controlling of these flows from upstream suppliers to meet consumer demand down the chain is carried out (Christopher, 2011, p. 9). Therefore, for smooth and effective functioning of the supply chain operations, the flow of materials and information using technological advancements is essential for the chain stakeholders (Christopher, 2011, p. 12; Chopra & Meindl, 2016, p. 14).

As evident from the literature, SCM encompasses a diverse set of activities and, in the supply chain discourse, the lack of consensus among theoreticians, researchers and industry practitioners in defining SCM is observed (LeMay *et al.*, 2017). This may be due to the multidisciplinary nature, vast landscape and obscure boundaries of the supply chain operations (LeMay *et al.*, 2017). As a result, different viewpoints in defining SCM increases the complexity to achieve a consensus definition. Nevertheless, it can be argued that a consensus in the formal SCM definition will help define the structure of SCM theory and without a definitive SCM definition, theory development in SCM will be subject to scrutiny and challenging for the supply chain scholarship (Bechtel & Jayaram, 1997; Mentzer *et al.* 2001; LeMay *et al.*, 2017; Ketchen & Hult, 2007). Also, without the agreed upon definition of SCM, industry practitioners will be limited to advance the practice (Stock & Boyer, 2009). However, attempts have been made in the literature to address the gaps in defining SCM (Mentzer *et al.*, 2001; Ellram & Cooper, 2014; Carter *et al.*, 2015). Regardless, majority of the SCM definitions capture the fundamental aspects required for organisational integration with other stakeholders in the supply chain operations. Also, there are commonalities in acknowledging the stages of operations to integrate inter- and intra- organisational functions through material and information flows. Furthermore, it is clear from the SCM definitions that in managing supply chains, coordination, control and governance of operations across a range of stakeholders is critical (LeMay *et al.*, 2017). Therefore, based on the multitude of perspectives available in the literature surrounding SCM, it can be considered as a process, a functional area, or as a governance structure (Ellram & Cooper, 2014).

2.3.2 Evolution of SCM

As a discipline, both in research and practice, SCM has evolved significantly. Initially, SCM operations were primarily attributed with asset and resource management of the producer (Ellram & Cooper, 2014). Over the years, organisations are linked more closely and integrates their functions (procurement, manufacturing, marketing) with the operations of the other stakeholders such as suppliers, distributors and retailers to improve the performance of the supply chain as a whole (Talib *et al.*, 2011). As a result, the present-day supply chains are

dynamic and consists of a complex network of organisations who work in tandem to gain efficiencies in cost (time, effort and monetary aspects) and resource utilization (Talib *et al.*, 2011; Bastas & Liyanage, 2018) by building synergies among various business functions (Fan & Stevenson, 2018). This network of organisations consists of multiple layers of suppliers and distribution channels to cater to a range of customer needs (Fan & Stevenson, 2018). In the era of globalization, the focus of SCM is the strategic management of all external and internal stakeholders to enhance organisational performance by integrating the supply sources, distribution networks and the end-customers (Bastas & Liyanage, 2018). Through efficient SCM practices, benefits such as reduced costs, faster response to demand, quality assurance, reduced lead times and enhanced supply chain surplus can be achieved (Chopra & Meindl, 2016, p. 16; Kaynak, & Hartley, 2008; Li *et al.*, 2011). With the state-of-the-art technological advancements and real time data exchange, the present-day SCM integrates the capabilities of supply chain stakeholders to gain competitive advantage through enhanced supply chain efficiency and responsiveness (Chopra & Meindl, 2016, p. 58). Moreover, in recent years, SCM has emerged as an influential management approach to achieve sustainable chain operations (Reefke & Sundaram, 2017; Baliga *et al.*, 2020).

However, with the evolution of SCM as a discipline and the paradigm shift in the approach of the SCM functions, the appropriateness in naming the discipline in the supply chain discourse has been a subject of discussion in SCM literature. For instance, based on the earlier focus (supply) and scope (production and distribution) of supply chain operations it can be argued that the term 'Supply Chain' signifies that the operations were '*supply driven*' through a '*chain*' of '*push*' processes. On the contrary, the modern-day supply chain operations are skewed towards the '*consumer demand*' (*pull*) which is fulfilled through the concerted efforts of a '*network*' of organisations (Chopra & Meindl, 2016, p. 22). Therefore, in literature there is a debate that a more descriptive term would be appropriate to use since the modern-day supply chains are not the '*chain*' but a '*network*' that adds value in fulfilling the customer demand, hence the name; value chain, supply networks, demand chain management or demand pipelines are alternatively considered in the literature referring to the changes in SCM practice (Harland *et al.*, 2006; Jüttner *et al.*, 2010). At this stage it is important to mention that, in this thesis, '*consumer*' represent the ultimate user (end-customer) and '*customer*' represent another business entity in the chain operations.

2.3.3 Key SCM Aspects Related to This Research

Supply chain management is a vast study domain. Therefore, in this literature review, the key aspects relevant to the scope of this research i.e., the concept of value, luxury, Supply Chain Quality Management (SCQM) and Supply Chain Risk Management (SCRM) are explored.

- Value and value chains

Value is a broad, abstract and an intricate concept which is defined in different industrial contexts across various study disciplines, and it can be perceived in more than one way if viewed from the lenses of; organisational and end-customer value (Ramsay, 2005). According to Porter (1985, p. 38), “value is the amount buyers are willing to pay for what a firm provides them. Value is measured by total revenue; a reflection of the price a firm’s product commands and the units it can sell.”. On similar lines, according to Dumond (2000), for the consumer, value is a trade-off between what they receive (benefits) and what they give up (price) to acquire the product (good or service). However, as mentioned in Ramsay (2005), Smith (1776, p. 28) states that value can be considered from the perspectives of; ‘*value in use*’ and ‘*value in exchange*’. Ramsay (2005) further elaborates that, ‘value in use’ captures the view of; the consumer (utility of the product) and the organisation (utilisation of their resources) whereas ‘value in exchange’ refers to the culmination of the organisations’ efforts in bringing the products (goods/services) to the point of exchange (sale of goods/provision of service) against a monetary value they get from the consumer. Since, consumer is the only source of revenue generation, therefore, supply chains try to maximise the value for the consumer from the product they provide (Chopra & Meindl, 2016, p. 16). Therefore, in supply chain transactions, value can be defined as the maximum amount the consumer is willing to pay against the efforts of the supply chain actors in creating value for the good or service (Chopra & Meindl, 2016, p. 15). In this, the market price of the product functions as the baseline which encapsulates the cost structures across the chain operations to capture ‘value in use’ for the organisations. Also, the competing option in the market helps establish the ‘value in use’ to the consumer that they are willing to pay, at the point of exchange, in lieu of the product.

The concept of value led to the emergence of value chains. The term ‘value chain’ was introduced by Porter in mid-1980’s (Porter, 1985). Within an organization, activities and relationships in and between various functional units generate value for consumers by successfully managing various departments’ activities (Porter, 1985). However, beyond the confines of an organisation, value is created through the trading relationships between organisations by conforming to the resource specifications between the buyer and seller and/or

through the collaborative arrangement of resource sharing among the chain actors (Ramsay, 2005). Therefore, value chain refers to the processes or stages that generate value as the material pass through various supply chain operations before reaching to the point of consumption. However, Kaplinsky (2000, p. 121) elaborates the scope of the value chains beyond product consumption and described a value chain as “the full range of activities which are required to bring a product or service from conception, through the intermediary phases of production, delivery to final consumers, and final disposal after use”. Also, value chains extend to capture intangible aspects such as aesthetics, one of Garvin’s originally specified dimensions of product quality (Garvin, 1987), and an important aspect of the value chains (Rinaldi & Testa, 2015). On this basis, it can be argued that value chains are beyond the physical conveyance or transformation of goods as they include several strategic activities to deliver goods and services to achieve competitive advantage by creating the value for the consumer (Porter, 1985; Ricciotti, 2020).

In this thesis, the term ‘*supply chain*’ represents the conveyance of material from upstream (suppliers) to downstream (consumers) chain stages. Whereas the term ‘*value chain*’ is referred from the consumer’s viewpoint regarding the value they perceive from the product.

- Supply Chain Quality Management

Foster Jr. *et al.* (2011) defines Supply Chain Quality Management as “a systems-based approach to performance improvement that leverages opportunities created by upstream and downstream linkages with suppliers and customers”. Whereas, Robinson and Malhotra (2005) expands the scope of SCQM and mentions it as a “formal coordination and integration of business processes involving all partner organisations in the supply channel to measure, analyse and continually improve products, services and processes in order to create value and achieve satisfaction of intermediate and final customers in the marketplace”.

Over the years, the focus on quality has increased significantly in the chain operations. According to Garvin (1987), quality can be captured through eight product attributes which include; performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality. Academics and industry practitioners in SCM have realised the importance to implement quality across the entire supply chain operations (Kaynak & Hartley, 2008; Foster Jr. *et al.*, 2011). Therefore, SCQM captures quality aspects across all supply chain stages and not limited to the confines of manufacturing operations alone (Zhu *et al.*, 2007; Li *et al.*, 2011; Lin *et al.*, 2013; Soltani *et al.*, 2011). In other words, quality management

(QM) is viewed as a common denominator in the supply chain operations and considered as the responsibility of all the stakeholders in the chain (Soaras, 2016). To achieve this, QM consists of principles, practices and tools that focuses on consumer aspects, process improvement and decision making across the chain operations (Dean & Bowen, 1994; Hellsten & Klefsjo, 2000). It can be argued that similar to SCM where consumer satisfaction is the end goal of the supply chain operations, in QM, stakeholders' efforts should be directed at the quality aspects to meet the expectations of suppliers, regulatory bodies, business entities and end-customers (Talib *et al.*, 2011). On similar lines, Robinson and Malhotra (2005) stresses that, to achieve quality assured outputs, incorporating SCM and QM practices upstream and downstream the chain through stakeholder collaboration needs to be the central focus of the operations.

In the chain operations, quality considerations are primarily associated with the internal activities of the organisation such as process improvement and product design to minimise costs (Linderman, 2008; Foster Jr., 2011). It can be argued that poor quality upstream in the supply chain can lead to significant ripple effects across various downstream chain operations and can be expensive to the extent that it may lead to inferior product quality. Therefore, ignoring quality aspects can be expensive monetarily as they are significantly higher downstream (product recalls) in the chain as compared to upstream aspects. Irrespective of the quality issues anywhere in the chain, in general, the manufacturer bears the consequences of poor product quality (Balachandran & Radhakrishnan, 2005).

- Supply Chain Risk Management

Considering the scope of this thesis, it is important to address another key area related with the supply chain operations i.e., Supply Chain Risk Management. Over the last two decades, SCRMs has evolved as a significant research area (Fahimnia *et al.*, 2015). According to Tang (2006), supply chain risk management can be defined as “the management of supply chain risks through coordination or collaboration among the supply chain partners to ensure profitability and continuity”. In the context of supply chains, risks are classified as supply risks (Johnson, 2001; Diabat *et al.*, 2012), operational risks (Tang, 2006; Diabat *et al.*, 2012) and demand risks (Johnson, 2001, Diabat *et al.*, 2012). Therefore, supply risks are associated with the movement of material from the supplier; operational risks capture the risk aspects involved with the manufacturing process whereas, demand risk impacts the flow of good or service towards the consumer (Tummala & Schoenherr, 2011; Fahimnia *et al.*, 2015; Tang, 2006). These risks occur frequently because of the interlinked activities of the chain

stakeholders (Ho *et al.*, 2015). Furthermore, in supply chain operations, disruptions at various levels are encountered frequently leading to ‘disruption risks’ which, at times, have greater impact than any of the other risk types (Tang 2006; Wagner *et al.*, 2014). Moreover, environmental risks are also prevalent across the supply chain operations (Freise & Seuring, 2015).

- Concept of luxury

In the context of this research, it is important to define and understand the concept of ‘luxury’. Heine and Berghaus (2014) define luxury as “anything that is desirable and more than necessary and ordinary” whereas Grassi (2020) defines luxury through the concepts of “social distance, exclusivity, elitism, rarity and expensiveness” where consumers relate luxury through their sensorial and intellectual experiences. According to Veblen (2004), luxury stems out from the fundamental or essential needs and can be defined as an outlet for differentiation among different classes in the social hierarchy. On the contrary, in the view of Dubois *et al.* (2005), luxury is defined as “a lifestyle of excess, indulgence and waste”. Therefore, the two extreme approaches i.e., luxury as a ‘*fundamental need*’ and luxury as a ‘*waste*’ represents a vast gap in the continuum of the concept of luxury in literature. However, it can be argued that luxury, as understood in the common parlance, lies in between these two extremes, and can also be ascribed with ‘rarity’ (Phau & Prendergast, 2000; Lo & Ha-Brookshire, 2018). However, Godey *et al.* (2012) stretches the concept of luxury beyond ‘rarity’ to “the common denominators of beauty, quality and price”. According to Hung (2011), luxury can also be ascribed through a product which is unique, limited in number and crafted carefully. One of the other dimensions that signifies luxury is ‘product production integrity’ and ‘durability’ (Kapferer & Valette-Florence, 2016; Fionda & Moore, 2009). Similarly, Lo and Ha-Brookshire (2018) states that luxury signify ‘heritage’ and ‘longevity of products’. Considering the environmental aspects in the luxury products, for Fionda and Moore (2009) luxury is ‘limited and demonstrates exclusivity’ which drives reduction in over-consumption of natural resources. Therefore, it can be argued that these concepts of luxury are subjective and relative to the consumers’ personal orientation towards their lifestyle choices (Faust, 2013; Jones & Jones, 2018; Cavender & Kincade, 2015) representing their culture and social background (Nueno & Quelch, 1998). In the literature, considering the cultural and historical perspectives, luxury commodities are broadly classified in four categories i.e., food, clothing, shelter, and leisure (Berry, 1994). However, in this thesis, luxury apparel is the focus of research.

2.3.4 Luxury Apparel Value Chains

In this research, the focus is on luxury apparel chains. These chains are dynamic and driven by variable consumer preferences (Moon *et al.*, 2012). The literature suggests that in the luxury market, traditionally; quality, traceability, uniqueness, innovation and responsiveness are critical considerations (Brandao *et al.*, 2021; Caniato *et al.*, 2011; Khan, 2015; Brun *et al.*, 2017b). In luxury apparel products, the consumer value the product based on their prior experiences (if any), personal preferences (physical and aesthetic attributes of the product) and the degree of trust they have on the brand or the retail outlet (Khan, 2015; Wilcock & Boys, 2014). Luxury apparel chains play a critical role in establishing the ‘*luxury value*’ to the consumers which can be captured from the luxury brands and/or through the luxury goods (Hung, 2011). Luxury brands offer exclusivity along with superior quality products that creates the brand image by constantly engaging in product innovation and creativity (Kapferer & Bastien, 2009; Phau & Prendergast, 2000). Therefore, it can be argued that the focus of the luxury apparel supply chains is on the intangible characteristics or emotional features (preference, brand image) as opposed to the functionality aspects (durability, reliability) of the luxury product (Yang *et al.*, 2017). It can be inferred that the consumer acknowledges product exclusivity which ensures distinction among the markets. Therefore, the inherent value of the product the consumer relates in part to the properties of the product itself; and in part to the traditions and practices associated with its production, which help develop those qualities.

Luxury products commands premium price (Franco *et al.*, 2020), however with the emergence of new markets, broader set of opportunities presented a way for luxury commodities for mass market consumption (Silverstein *et al.*, 2003; Eng & Bogaert, 2010). There is a debate in the literature on these aspects. For instance, (Jones & Jones, 2018) argues that the socioeconomic groups who could not afford the ultimate commodity can settle on ‘affordable luxury’ in the products that matter to them. Affordable luxury signifies ‘mass fashion’ or ‘fast fashion’ products which is described by Fulton and Lee (2013) as “inexpensive clothing that is meant to be worn a limited number of times”. However, Castelli and Sianesi (2015) in concurrence with Brun and Moretto (2014) classify the luxury market into accessible luxury (certain prestige, low price), aspirational luxury (high prestige, high price) and absolute luxury (recognised elitism, exorbitant price).

As reported by Jones and Jones (2018), time is a crucial factor in establishing the distinction between ‘luxury’ or ‘aspirational luxury’ and ‘affordable luxury’ or ‘accessible luxury’

because with the passage of time such concepts change and evolve. This symbolises the subjectivity associated with the notion of luxury which traditionally was associated with 'status and exclusivity' (Veblen, 2004; Jones & Jones, 2018) and now depends on the consumers' perspective towards price sensibility which shapes their shopping priorities (Yeoman, 2011). In fast fashion products, lower quality materials and sub-standard manufacturing practices are used to fulfil consumers' changing demands (Kozlowsky *et al.*, 2012; Kapferer & Michaut, 2015). Fast fashion products, also referred to as "McFashion", leads to waste which adversely impacts the environment (Joy *et al.*, 2012; Kozlowski *et al.*, 2012). For the consumers of luxury apparel products, aspects such as; exclusivity, rareness, heritage, artisanal mastery, brand identity or prestige vary (Hung, 2011; Fionda & Moore, 2009). Based on the above discussion, it can be inferred that similar to value, luxury is subjective to consumers' needs and dependent on contextual aspects such as time and place.

In the context of supply chains, many supply chain models exist for non-luxury brands, however, not much attention is given by the researchers to luxury specific markets (Caniato *et al.*, 2009). The literature in SCM presents many supply chain models which focus on large scale and/or mass-market manufacturing industries (Croom *et al.*, 2000; MacCarthy & Jayarathne, 2013). Caniato *et al.*, (2009) states that these models have little applicability in the luxury industry. It can be argued that, based on the literature, the critical success factors for the luxury industry are heritage of craftsmanship, exclusivity of products obtained from scarce materials, emotional appeal, brand reputation and association with a country of origin known for excellence in producing specific products (Caniato *et al.*, 2011) does not align with the existing SC models. In the luxury supply chain literature, traditionally, the attention of academics has been on the marketing, branding and sociological dimensions (Vickers & Renand, 2003; Atwal & Williams, 2009; Waldron *et al.* 2014) and little attention has been given to operations and supply chain management related aspects (Brun & Morreto, 2014). In the luxury apparel supply chains, among other aspects, country of origin and counterfeit issues are critical factors (Khan, 2015). In this regard, a shift from the emphasis only on the marketing strategies and branding aspects (Waldron *et al.*, 2014) to generating consumer awareness of the processes is observed in the luxury retail operations (Faust, 2013). However, recently, Brandao *et al.*, (2021) proposes a framework for different levels of luxury based on supply chain performance goals, critical success factors and configuration elements of the chain.

In the luxury fashion context, the literature suggests that there are limited industry wide standards and predominantly the focus on the quality aspects in the luxury supply chains is confined to certain aspects of the chain operations (Brun & Moretto, 2014; Soares *et al.*, 2017; Bastas & Liyanage, 2018). However, Foster Jr. *et al.*, (2011) and Macchion *et al.*, (2015) stress that quality can be achieved by implementing it across all supply chain operations. For this, Brun and Moretto (2014) suggest controlling the quality across the whole luxury supply chain using Total Quality Management (TQM) approaches. Despite the recognition that quality is not a function of a silo in the chain operations and quality in luxury supply chains have a strategic relevance, not much attention has been given in the literature on quality aspects across the luxury apparel chains (Bastas & Liyanage, 2018).

In the literature, the emphasis is given to various quantitative techniques to address quality aspects in the cashmere chain operations. For instance, the work carried out by Imasheva *et al.*, (2014) presents the results of experiments conducted on the processing of goat down on Kazakhstani cashmere goats to optimise fibre distribution based on fibre length. The quality of cashmere products is also impacted by fibre curvature which was the focus of work carried out by McGregor and Butler (2009) and McGregor and Naebe (2016) who studied the parameters affecting cashmere fibre curvature in Australian farms. Cashmere quality issues are addressed by Kumar *et al.* (2015) to differentiate cashmere fibre with sheep wool. In another work on Australian cashmere, McGregor and Postle (2004) presented a study on the effect of different fibre attributes on the cashmere tops. To assess quality, fibre identification methods such as microscopy, DNA sequencing and chemical staining method were presented by Ammayappan *et al.* (2011) to identify yarn characteristics of the cashmere products. However, few articles focused on the quality of cashmere end-products such as shawls (Sheikh, 2014; Bumla *et al.*, 2012) and sweaters (Li *et al.*, 2014).

A major risk in the apparel industry is counterfeiting (Wilcock & Boys, 2014). Counterfeit products refer to items which are produced by imitating branded entities (Wang *et al.*, 2020). Traditionally, consumers used to associate product authenticity with its country of origin. However, with the change in the manufacturing locations (for legitimate production) in low labour-cost countries allowed counterfeiters to gain easy access to materials, expertise and designs (Wilcock & Boys, 2014). It can be argued that, provided the consumer requirements (functionality, symbolic value i.e., brand, rarity) are satisfied, consumers see value in the counterfeit products due to its lower price and ready to compromise on its quality (Nia & Zaichkowsky, 2000; Wilcock & Boys, 2014). The study of Wilcock and Boys (2014)

addresses the issue of counterfeiting and demonstrate the effect of quality management to reduce risk in the supply chains by integrating anti-counterfeiting initiatives.

2.4 Sustainability and Sustainable Development

2.4.1 Definition and Concept of Sustainability

Similar to SCM, sustainability is a broad and complex concept. It is important to know that in literature, the terms ‘sustainability’ and ‘sustainable development’ are frequently used interchangeably, however, there is a semantic distinction between the two (Gibson, 2006; Waas *et al.*, 2011). In the literature, sustainability is defined in many ways. One of the most widely accepted views on sustainability is presented in the Brundtland Commission Report (1987) on World Commission on Environment and Development (WCED) as “meeting the needs of the present without compromising the ability of future generations to meet their own needs”. However, this is a generic representation of sustainability and advocates the efficient use of resources to meet the demand (Jones & Jones, 2018). The Brundtland report does not address resource distribution, quality, technology or policy related aspects. Nevertheless, the scholarship of the Brundtland report has provided a consensus on the responsibility of the current generation regarding the obligations they have towards the future generations.

2.4.2 Dimensions of Sustainability

For sustainability, economic, social, and environmental concerns, also known as the Triple Bottom Line (TBL) approach is considered by the industry practitioners and academics (Baliga *et al.*, 2020; Gibson, 2006; Waas *et al.*, 2011; Turcu *et al.*, 2012; Figure 2.1). Over the years the concept of sustainability has evolved to capture the real-world phenomena through various TBL drivers (economic, social and ecological) at different physical (infrastructure) and conceptual (cultural) levels (Waas *et al.*, 2011). Moreover, sustainability is a large, multi-dimensional and multi-scale perspective (Seuring *et al.*, 2008b) involving transdisciplinary areas where social and physical sciences interact (Linton *et al.*, 2007) to address the problems across a range of contexts.

For economic sustainability, the major focus of the production systems is on economic growth, therefore, other sustainability dimensions such as environmental aspects or social concerns are seldom considered (Waas *et al.*, 2011; Gold *et al.*, 2010a; Gold *et al.*, 2010b; Tang & Zhou, 2012). Hence, it is expected that economic sustainability decisions must also incorporate other dimensions of sustainability (Zhai & Chang, 2019).

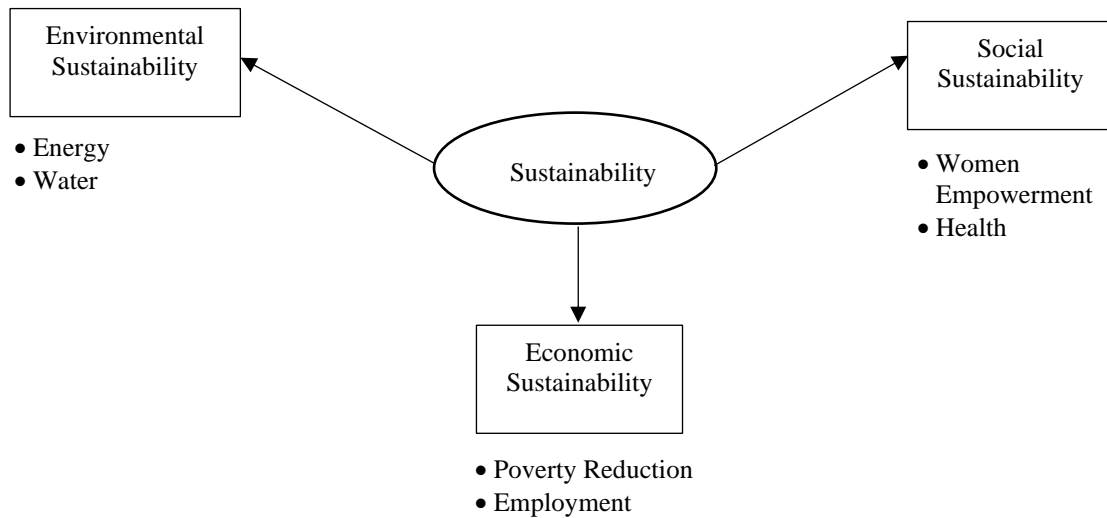


Figure 2.1 Dimensions of sustainability

An important sustainability dimension i.e., social sustainability aims to: mitigate poverty within the economic and environmental framework of the system through cultural identity, traditions, empowerment and gender equity (Kumar *et al.*, 2014; Scopelliti *et al.*, 2018), complying with labor laws (Yawar & Seuring, 2017), preservation of people’s skills and capabilities (Sarkis *et al.*, 2010) and facilitate conducive conditions for the current and future generations to fulfil their needs (Kolk, 2016). Another aspect of social sustainability captures the human requirements through the provision of education and healthcare (Seuring *et al.*, 2008b; Kolk, 2016; Gibson, 2006). Whereas, among other considerations, environmental sustainability includes the impact of operations: on ecology (Brodhag & Taliere, 2006), climate change (Boffelli *et al.*, 2019), which not only impacts the environment but also have implications for economic sustainability (Kumar *et al.*, 2014), and supply chain networks (Macchion *et al.*, 2015).

2.4.3 Sustainable Development and Sustainable Development Goals (SDG)

Sustainable Development (SD) comprises of economic and social development which protect and enhance the natural environment (Diesendorf, 2000). Sustainable development embodies maintenance and/or creation of stable economic incentives and employment for social progress recognizing the needs of the current and future generations by protecting the

environment through the prudent use of scarce natural resources (Seuring *et al.*, 2008b; Waas *et al.*, 2011). The essence of sustainable development is to ensure balance between the TBL dimensions i.e., achieving social cohesion without compromising on the ecological and economic interests (Spangenberg *et al.*, 2002). Overall, sustainable development can be considered as a roadmap or a vision for the future focusing on ensuring the appropriate resource utilisation of scarce resources. Based on Agenda 2030 of the United Nations, achieving sustainability through the Sustainable Development Goals (SDG) is gaining attention as an approach for the sustainable development of the industries globally. In 2015, considering the TBL approach, the SDGs were developed in 17 categories by the United Nations (UN) where these goals are “integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental” (UN Agenda 2030). To implement the 17 SDGs, the UN approved the 2030 Agenda for the betterment of the TBL globally.

Even though, the TBL model remains the backbone of sustainable development, however, over the years, new sustainability aspects have evolved to address cultural (Soini & Birkeland, 2014), technical (Aydin *et al.*, 2015) and institutional (Waas *et al.*, 2011; Spangenberg *et al.*, 2002; Turcu *et al.*, 2012) sustainability. Institutions are not explicitly mentioned as the fourth dimension, but they include crucial elements for the sustainable development (Waas *et al.*, 2011; Santoro, 2019). Institutions refer to local entities, procedures, legal norms, system of rules, or government organizations that are involved in either policy making and/or implementation of the policies (Pfal, 2005; Spangenberg *et al.*, 2002). Therefore, institutional aspects serve as an element of policy guidance in the sustainable development to facilitate decision making and implementation of the policies (Pfal, 2005). As a part of their mandate, institutions are required to assimilate societies or communities or their representatives to submit their concerns and interests (Pfal, 2005). This implies that institutions function as an intermediary entity to harmonize human interests with economic growth and environmental security by facilitating decision making through policy goals (Turku, 2013). In a nutshell, sustainable development can be considered as a holistic process to achieve sustainability objectives or in other words, sustainable development is the pathway to attain sustainability (Waas *et al.*, 2011; Diesendorf, 2000).

2.4.4 Sustainability in Luxury Apparel Value Chains

Sustainability in SCM is a major area of research. Sustainable supply chain management (SSCM) can be defined as the “management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development i.e., economic, environmental and social into account which are derived from consumer and stakeholder requirements” (Seuring & Müller, 2008a, p.1700). In supply chain operations, TBL dimensions help organisations improve sustainable outcomes by integrating them along the chain operations (Seuring & Müller, 2008a; Carter & Rogers, 2008; Govindan *et al.*, 2016; Gimenez & Tachizawa, 2012). In this, the role of stakeholders such as government institutions and consumers are critical in integrating the TBL approaches to create sustainable supply chains (Seuring *et al.*, 2008b). Therefore, for sustainability, the TBL approach should be considered all along the chain operations to enhance the value for the consumer (Linton *et al.*, 2007).

In the context of luxury supply chains, it can be argued that as ideological concepts, ‘luxury’ and ‘sustainability’ are contrast to one another and does not pair naturally (Jones & Jones, 2018). Luxury symbolises indulgence and hence the concept of luxury is incompatible with the idea of sustainability which advocates appropriation (Kapferer, 2010). However, in the realm of fashion commodities, these divergent concepts have merged well creating ‘*sustainable luxury*’ in the fashion discourse (Jones & Jones, 2018). In fact, these days the consumers of luxury products demand for sustainable operations in the chain operations (Lo & Ha-Brookshire, 2018). Recently, sustainability aspects are also gaining attention in the luxury chain operations (Brun *et al.*, 2017a; Yang *et al.*, 2017). As observed by Fionda and Moore (2009) and Guercini & Ranfagni, (2013), while incorporating sustainability goals, the luxury brands need to focus on; ethically sourced materials, product quality, skilled artisans and craftsmanship. Similar views are echoed by Cherny-Scanlon (2016, p. 184) who emphasised that “respect for tradition and craftsmanship and the preference given to quality over quantity” are the values that help couple the concepts of sustainability and luxury. In the sustainable luxury discourse, materiality, quality, uniqueness, manufacturing practices and the place are the key considerations (Guercini, & Ranfagni, 2013; Jones & Jones, 2018). These aspects are further elaborated by Gardetti (2016) who stresses that sustainable luxury not only promotes artisan-based manufacturing, consideration for social and environmental issues, respect for cultural heritage and art patronage but also highlights the significance of materials used in the operations.

To address the criticism surrounding the luxury fashion products, efforts are made by the fashion brands to embed sustainability considerations in the processes (Li *et al.* 2014; Hulm & Domeisen, 2008). In the luxury fashion industry, socially responsible products are exclusive to a niche market. Regardless, many luxury brands have invested resources in developing sustainability programs as a part of their corporate social responsibility (CSR) to improve their brand image and to enhance the value of their products. Corporate Social Responsibility (CSR), which is closely related with social sustainability (Sarkis *et al.*, 2010), is an important factor in achieving sustainability in the luxury fashion industry. Social considerations capture issues related with working conditions, wage structures and working hours (Towers *et al.*, 2013). There is a growing recognition among the consumers regarding the visibility of CSR considerations across various supply chain aspects (Perry & Towers, 2013; Towers *et al.*, 2013). CSR reports are helpful in establishing trust with the stakeholders by giving insights into the initiative's the organizations take to achieve their sustainability goals (Tate *et al.*, 2010) and to meet legal and ethical expectations of the stakeholders (Defee *et al.*, 2009).

After the oil industry, the textile industry is the most polluting industry in the world (Muratovski, 2015). Environment sustainability aspects in the textile industry are primarily ascribed to pollution and energy consumption in yarn manufacturing, dyeing, washing and product finishing processes (Kocabas *et al.*, 2009; Vjnhandl & Valh, 2014; Towers *et al.*, 2013). Apparel supply chains are known for labour-intensive manufacturing and emitting significant environmental pollution through chemical discharge and carbon emissions (Choi & Cai, 2018). Similar views are echoed by De Brito *et al.* (2008) who stated that environmental sustainability considerations are significant for the apparel supply chains due to the considerable use of chemicals, energy and water resources.

2.5 Geographical Indications (GI)

2.5.1 Definition and Concept of GI

Geographic Indication (GI) originates from the Paris Convention in 1983 through expressions such as 'appellations of origin' and 'indications of source' (Srivastava, 2003). Later, a term 'Geographical Indication' was used under the Trade Related aspects on Intellectual Property Rights (TRIPS) Agreement in 1995 for *Sui generis* products (Das, 2010). As stated in Article 22.1 of TRIPS Agreement, Geographical Indications are defined as "indications which identify a good as originating in the territory of a member, or a region or locality in that

territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin” (Gangjee, 2017; Das, 2010).

Conceptually, as stated by Dokuzlu (2016), GI highlights context-dependent (place of origin) production practices and indicates how knowledge about the traditional process and practice is preserved and reflected in the products. Bose (2016) further elaborates on GIs and states that in the traditional products, the producers draw from a range of historical, geographical and social domains to communicate and sustain the regional consciousness and, in this GIs secure and promote regional identity and local traditions. The literature covers a vast scope of GIs. Concurring with the observations of Bose (2016), Belletti *et al.* (2017) expands the scope and influence of GI beyond its territorial roots and mentions that GI products captures numerous aspects, namely; specificity of production processes (traditional knowledge, local resources), economic and social effects in the region (employment, social cohesion), branding (collective right over GI name) and cultural characteristics (heritage, existence value). Similar views are echoed by Belletti *et al.* (2017) and Fontefrancesco (2012) who elaborated that region, traditions, and artisans are at the forefront of the value creation in the GI products. Value chain processes are critical elements for the development of communities involved with territorial products. (FAO, 2009).

2.5.2 GI as a Quality Mechanism

There is an important GI dimension perceived by the researchers - quality. Belletti *et al.*, (2017) states that through GI, a unique tie with regional characteristics such as raw material, artisanal expertise and production techniques can be construed as quality attributes which stem from a specific place. Belletti *et al.*, (2017) further emphasises that GIs is not only a tool to preserve the culture of the region but also a mechanism which connects quality and reputation of a product to the specific region. Whereas, Becker (2009) considers GIs as an important pillar to establish ‘quality policy’. GI uses a distinct insignia or logo to identify products from a specific geographical area (Dokuzlu, 2016). From the perspective of producers, to seek a price premium on their products, GI helps differentiate the ‘geographically associated’ value from the competition (Bose, 2016). Similar to other mechanisms which represent fair trade, organic produce or halal products, GI insignia represents regional products and mitigates information asymmetry among industry stakeholders (Dokuzlu, 2016). However, the market viability of GI products depends on consumer awareness and the recognition of the distinction that GI brings along (Belletti *et al.*, 2017). Similar views were expressed by Dokuzlu, (2016) who

stated that GI logos create value to the consumer only if the consumer know what the designated logo represent. Therefore, it can be argued that through institutional intervention, it is required to have consumer awareness about the GI logo and products and through this, consumer perception and the reputation of the territorially delimited product can be strengthened, and a premium price can be obtained (Dokuzlu, 2016; Belletti *et al.*, 2017; Costanigro *et al.*, 2010). Consolidating on these views, according to Dokuzlu, (2016) GI logo represents a promise to the consumer about the value accumulated through the chain operations. In literature there is consensus that GIs play a critical role in securing the products rich in traditional knowledge which is generated by the collective efforts of the individuals over generations (Vittori, 2010; Belletti *et al.*, 2017). For this reason, in many legal protection schemes, GIs are registered by institutions; not by individuals (Belletti *et al.*, 2017; Arfini *et al.*, 2019). Therefore, it is important to know that GIs can be considered as common-pool resources as they are public trademarks and can be used freely in the GI territory (Fernández-Barcala *et al.*, 2017).

2.5.3 Product Differentiation Through GI

Mattia (2004) and Dentoni *et al.* (2012) state that products demonstrating regional identity, exclusivity and area specific production approaches have a distinct market which helps in creating product differentiation strategies. Similarly, Wong and Elbegsaikhan (2020) mentions that GI supply chains not only enables a premium price to producers but also helps them enter niche markets and develop their brand. Further studies carried out by researchers (Dokuzlu, 2016; Fernández-Barcala *et al.*, 2017) also indicate that by identifying geographic regions, GI helps in product differentiation which is an essential aspect of marketing strategies and consumers value the products which are identified with a geographical place and has specific characteristics associated with that territory. Belletti *et al.* (2017) highlights GIs for product differentiation where GI based producers can market GI products more effectively rather than using different quality labels. However, it can be argued that as compared to trademarks and copyrights, the development of GI has been relatively slow in the developing countries, and GI is not as prominent as the other two mechanisms of the protection of intellectual property and may not be a preferred choice for marketers. Nevertheless, GI introduces a new dimension of intellectual property through a legal mechanism and especially the significance of GI is increasingly gaining attention among developing economies.

2.5.4 GI as a Sustainable Development Tool

GIs can function as an important policy tool for the development of economy and poverty reduction of the workers operating in the industrial settings involving significant manual efforts such as handloom and handicrafts (Ali, 2011). The impact of GIs is subject to the influence of legislative dispensation, artisanal communities, and other supply chain actors (Ali, 2011). Nevertheless, a comprehensive policy to support GI implementation for the sustainable development of the cashmere industry is required. For this, there is a need for capacity building and creating GI awareness among the stakeholders through valorisation strategies that can be implemented using bottom-up approaches (Ali, 2011; Belletti *et al.*, 2017). Synergies between supply chain actors and the policy makers at various levels for both product quality and resource management is desired (Belletti *et al.*, 2017). For institutions, advertising, providing technical assistance and lobbying for GI mechanism is expected through the policy implementation process and to mitigate various obstructive factors from these valorisation initiatives, appropriate regulations for production and consumption is required (Belletti *et al.*, 2007).

As evident from the literature, GIs promote local production and help with the sustainable development. In developing countries there is a perception that manufacturers who produce GI products generate more income than those who produce non-GI products (Dokuzlu, 2016). Therefore, the correlation of GI with sustainable development is significant as GIs have the potential to influence the development of local communities and poverty alleviation (Ali, 2011; Covarrubia, 2019; Vandecandelaere *et al.*, 2021). According to Dokuzlu (2016), GI not only serves as an effective marketing tool or quality mechanism but can also function as a significant contributor in the economic development of the region by generating employment among the local artisanal communities. According to Ali (2011), the success of GI primarily depends on its trickle-down effect to the local communities of the region in their practice and apprenticeship.

However, Jena and Grote (2012) and Belletti *et al.*, (2017) highlights an important aspect regarding the GIs and states that there can be a detrimental effect on the GI products if they are sold at premium price but are inferior in quality than the cheaper or non-GI products or if the GI products are under produced due to supply chain inefficiencies. Furthermore, Belletti *et al.*, (2017) mentions that to achieve strict intrinsic quality requirements, the artisans who cannot afford the rejection of the products for not conforming to the quality parameters may be excluded from participating in the GI discourse.

2.6 Theoretical Framework

Based on the literature review of the three study areas considered in this literature review i.e., supply chain management, sustainability and Geographical Indications, the findings suggest that there is a lack of research from the perspective of GI in the luxury apparel industry surrounding sustainability and quality aspects. Literature also indicates that Geographical Indications, especially in the context of the developing countries, can influence the sustainable development of the industries which involve considerable human effort in the chain operations. Therefore, based on the discussions presented in this literature review, the theoretical framework (Figure 2.2) evolved from the literature review is a representation of the luxury apparel industry operations from the view of two critical aspects – quality and sustainability. Moreover, the framework is useful to identify the relationships and its influence of the constructs i.e., industry stakeholders, various processes, luxury markets, labels and different products which evolved from the literature findings. Through this, quality and sustainability aspects in the context of luxury apparel value chains is addressed. The framework provides insights into the luxury apparel value chain practices and their limitations which will help in the sustainable development of the luxury apparel industry operations. A framework can serve to improve, coordinate and provide insights about the linked activities (Ellram & Cooper, 2014); and suits best to address the research questions of the study (Section 1.3).

A label on the product reflects on the practices used during the manufacture. Therefore, the use of appropriate labelling across multiple luxury value chains is critical for product differentiation to cater the needs of various luxury markets. The theoretical framework captures industry stakeholders such as suppliers, artisan communities and retailers, who play a crucial role in creating the value through multiple chains operating simultaneously catering to different market needs. Due to the effect of industry changes, luxury fashion industry has changed considerably from producer-driven operations to buyer-driven commodity chains. As a result, the luxury apparel value chains in the cashmere industry in India observed a shift in the processes i.e., fibre processing, spinning, weaving etc. which are carried out both manually and mechanically. Luxury value chains function with a range of operations spanning from procurement, through different channels, to production and distribution in the domestic, regional and international markets. These operations are carried out through multiple chains to create value for a wide range of consumers across different markets.

As the framework indicate, value is created along various luxury fashion industry processes. The effect of the processes is observed on the luxury markets which influence labelling and prompts for distinct labelling considerations.

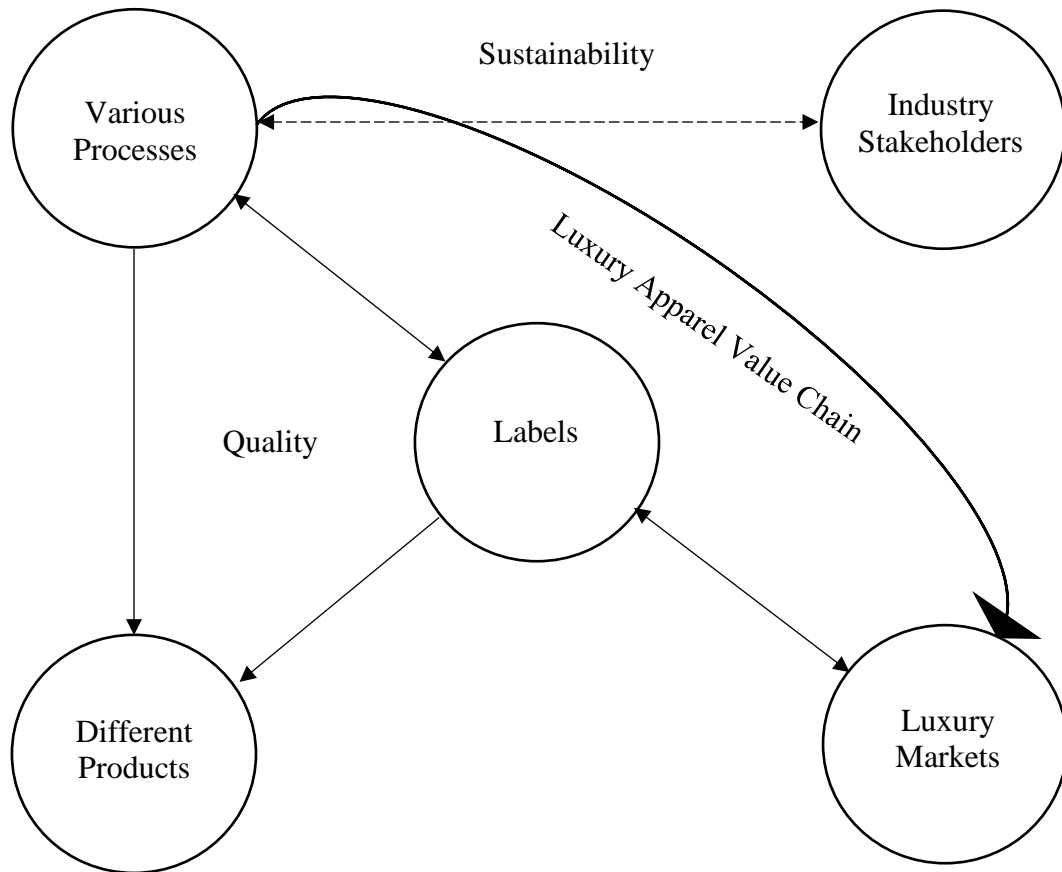


Figure 2.2 The theoretical framework.

In the framework, the focus is on the sustainability and quality attributes through appropriate labelling. The literature clearly suggests that both quality and sustainability are dynamic, complex and interlined constructs with needs to be manifested and implemented across the chain operations. The theoretical framework considered in this research captures economic conditions, social concerns, environmental aspects, role of institutions and quality attributes of the operations for the sustainable development of luxury apparel industry in India. In the chain operations, economic considerations are at the forefront of business activities. To achieve sustainable economic viability across the chain, resources and efforts are dedicated to

achieving financial goals. However, for the holistic development of the luxury apparel industry, along with the economic considerations for the producers and artisans, equally importantly are the social concerns of the artisans who are unable to sustain themselves with the unsustainable industry practices. The development of sustainable industry practices not only affect the operational aspects but may also reduce the financial hardship most of the artisan communities face. Similarly, the use of natural resources for production and the adverse effect of industrial waste on the environment affect the chain sustainability. In the framework, these aspects are represented through the dashed line indicating the gap in the literature surrounding these aspects in the luxury fashion apparel chains. For the sustainable development in the luxury apparel industry, consideration of quality in the chain operations along with the economic considerations can help streamline operations and reduce operational costs. The emphasis on product quality certification (López-Bayón *et al.*, 2018), significance of the place of origin and artisanal expertise is gradually finding space in the traditional craft industries (Bose, 2016; Covarrubia, 2019) as a policy tool for development (Basole, 2015).

For an in-depth understanding of the theoretical framework, it needs to be assessed based on the findings of the research. During the data collection process, these constructs were measured through interviews, observations and documentary evidence.

2.7 Research Gap (RG)

In the extant literature surrounding the luxury apparel industry, sustainable development has been considered at the organisational level addressing the TBL aspects. Furthermore, majority of the literature in this space addresses luxury apparel operations based in the developed countries. There is limited attention given in the literature surrounding the sustainable development of the luxury apparel industry in developing economies. Regardless, there is a lack of studies surrounding the Geographical Indications to address sustainability and quality aspects. The streams of literature explored in this literature review indicate a research gap to address sustainability and quality aspects in the luxury apparel industry. Therefore, based on the literature review conducted in this study surrounding SCM, sustainability and GI, a gap in the luxury apparel literature is identified leaving scope for research, as illustrated in Figure 2.3.

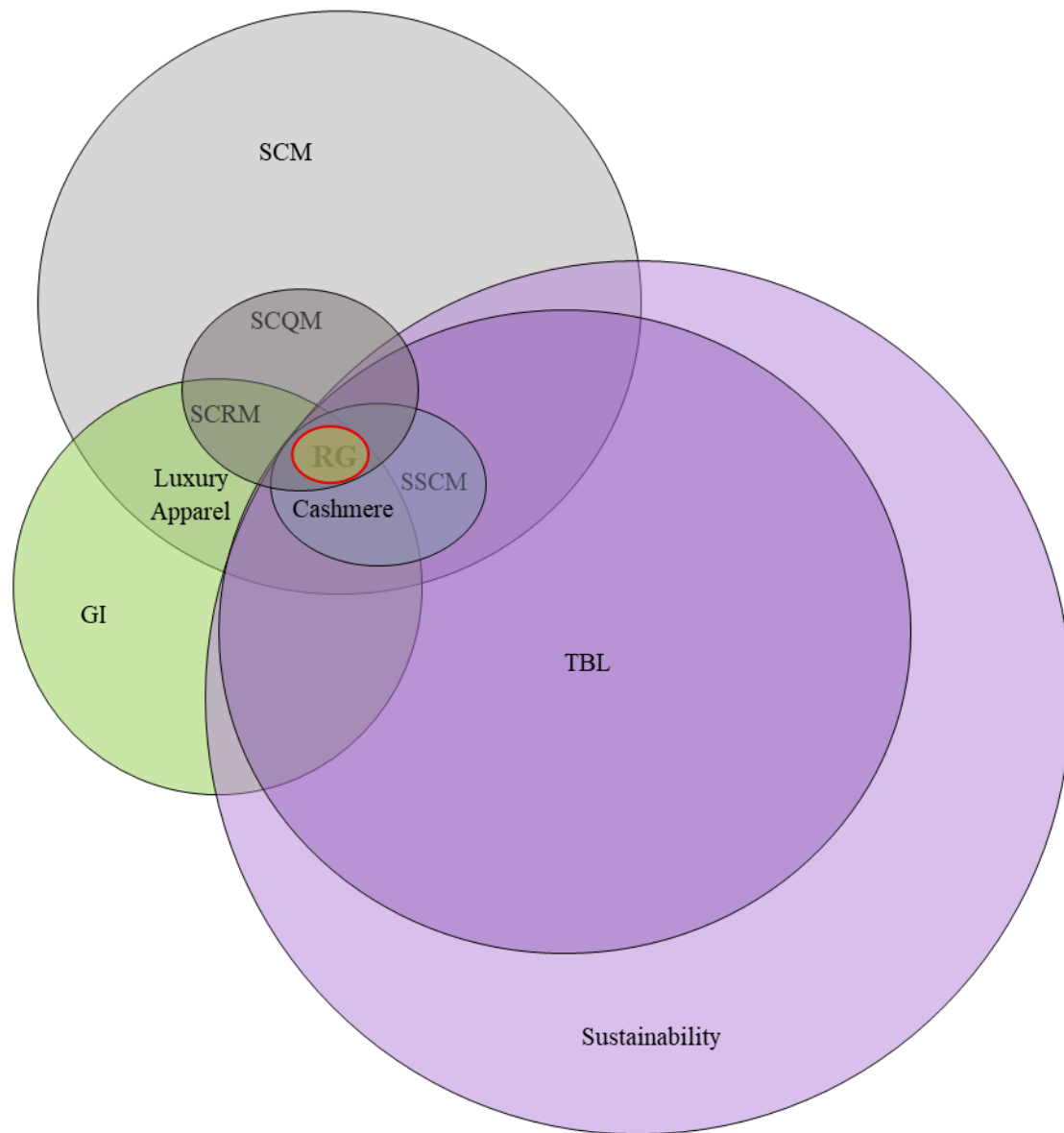


Figure 2.3 Classification of literature review and research gap

2.8 Conclusion

The textile industry is one of the biggest industries in the world (Resta *et al.*, 2016). Literature suggests that in the textile industry operations, luxury apparel represents cultural, social and historical aspects and demonstrates economic and social dimensions of a society. The findings of the literature review indicate that luxury apparel chains involve dynamic and complex set of operations including a range of stakeholders at different stages of the apparel production

leading to quality and sustainability issues in the operations. The literature on the luxury value chains is predominantly occupied with the manufacturing focus whereas the other important cross functional aspects such as quality and sustainability in these processes largely remained unexplored. The literature review findings indicated that in the luxury apparel chains there is a lack of industry standards across the chain operations. Therefore, non-standardised practices led to unsustainable operations and affect the chain processes and stakeholders alike. Based on the literature findings and, to the best understanding of the researcher, this is a first attempt to address economic, social, environmental and quality aspects from the lens of Geographical Indications in luxury apparel value chains.

3 Research Methodology

3.1 Overview

This chapter presents an overview of the research methodology considered to address the questions of the study. Section 3.2 presents the research scope capturing the aim of the study. In section 3.3, the philosophical perspective includes the epistemological and ontological stance adopted in the study is presented. Section 3.4 presents an overarching view of the case study considered in this research. Data collection aspects are presented in section 3.5 which provides a detailed insight into the purpose and procedure to gather information from a variety of study participants. Sample selection and data analysis aspects are addressed in section 3.6 and section 3.7 of the research, respectively. Limitations of the research are presented in section 3.8. Finally, before concluding the chapter in section 3.10, ethical considerations considered in the research are covered in section 3.9.

3.2 Research Scope

The aim of the research is to determine and analyse the effect of the changes such as the advent of mechanisation, use of blended fibres, exposure to wider markets and lack of quality standards in the cashmere industry in India through the antecedents of quality and sustainability. Based on the research aim, four research questions along with their objectives are presented in chapter one (Section 1.3). Therefore, based on the research questions and objectives, research methodology was developed and presented in the following sections.

3.3 Research Philosophy

Modelling reality or simulating real world settings is a challenging task. However, from the philosophical perspective reality or knowledge can be addressed from more than one viewpoint. Ontology and epistemology are the philosophical perspectives to understand the knowledge surrounding the research inquiry in multiple dimensions (Scotland, 2012).

3.3.1 Ontological Perspective

Ontology is the basis of research. It represents the actual knowledge created by social and contextual understanding which the researcher attains based on their experiences about the reality and existence (Bryman, 2012, p.34). Ontological perspectives are classified into objectivism and constructivism. Depending on the researcher's view of the topic under study, any of these positions can be adopted to explore the reality. According to Bryman (2012, p.32), objectivism considers tangible aspects of the surroundings in the environment, and it is independent of the social factors that influence it and focuses on quantitative methods. Quantitative research emphasises collection and analysis of data using quantification through deductive approach to test established theories and resonates with the requirements of the models used in natural sciences and embodies social reality as an external entity (Bryman, 2012, p.35). In quantitative approaches, structured data collection procedures and a large representative sample is required to measure specific characteristics of the quantitative technique considered in the study (Bryman, 2012, p.198). On the contrary, constructivism is the view in which social players actively participate and influence the real-world social entities using qualitative methods (Johnson *et al.*, 2007). According to Lofland *et al.* (2006) social settings involve four dimensions in which “the interactions of one or more *actors* (participants), engaging in one or more *activities* (behaviours) at a particular *time* in a specific *place*” outlines their cultural practices, social norms and relationships. Qualitative research approaches data collection and analysis using non-quantified methods and emphasizes the use of words. This method uses the inductive approach to build theories and stresses on the aspects for individuals to interpret their views on social reality (Bryman, 2012, p.35). Qualitative approach is helpful in describing the real-world phenomena embedded in the research inquiry and is responsive to the local context and stakeholders' needs (Johnson *et al.*, 2007). Furthermore, qualitative research focuses on processes rather than their outcomes, considers peoples' experiences and builds on abstractions and concepts to develop theories (Bryman, 2012, p.384). However, qualitative approaches can be expensive in time and cost. The limitations with qualitative research are the subjectivity associated with the researcher outcomes and researcher's bias.

3.3.2 Epistemological Perspective

Epistemology follows ontology and denotes knowledge as perceived by the people. In other words, epistemology is tied up with the ontological position of the researcher and can be understood as a process in which knowledge is acquired through learning various aspects of

reality (Bryman, 2012, p.27). Epistemology is further classified as positivism and interpretivism. The positivist approach considers the relationship between natural sciences and social reality through the application of tools and techniques i.e., quantitative methods available in natural sciences to address the social aspects (Bryman, 2012, p.27). On the other hand, interpretivism is inclined towards subjective assessments of reality and acknowledges the differences or limitations that exist between natural sciences and the social context of the study (Bryman, 2012, p.28). Furthermore, the presence of temporal, geographical, cultural and historical variables or the various combinations of these aspects, leads interpretivists to acknowledge multiple meanings of reality (Bryman, 2012, p.29). This suits to the qualitative approaches where variables such as time, context, place are desirable considerably. Contrary to quantitative approaches, qualitative research captures a complex phenomenon, identifies the stakeholders and their relationships and articulates these aspects in the context of the phenomenon under investigation (Yin, 2011, p.7). Based on this, a comparison of research quantitative and qualitative methodologies is presented in Table 3.1.

Table 3.1 Difference between quantitative and qualitative research methodologies

Aspect	Quantitative	Qualitative
Theory in relation to research	Deductive	Inductive
	Testing of theory	Generation of theory
Ontological	Objectivism	Constructivism
Epistemological	Positivism	Interpretivism
Research Approach	Test hypothesis	Observe and Interpret
	Replicable design	Unique
Data Collection	Specific	Abstract, Holistic
	Numeric and precise	Words and quotes
Sample	Large samples	Relatively small sample
	Generalizable	Natural setting based
Results	Objective	Subjective
Data Analysis	Statistical approaches	Explores themes

3.3.3 Mixed Methods

To acknowledge the limitations that emerged from the two distinct aspects i.e., quantitative and qualitative, an alternative approach (pragmatism) considers mixed methods to address the problem under investigation (Bryman, 2012, p.649). In this approach, the use of induction (*themes*) and deduction (*testing of hypothesis*) constitutes the form of reasoning for data analysis in the research inquiry (Bryman, 2012, p.649). The proponents of pragmatism argue that to effectively address a phenomenon and for comprehensive explanations of the findings, researchers should consider both approaches in the study (Bryman, 2012, p.649).

3.3.4 Selected Research Approach

Identifying and analyzing the relationships among various chain actors in the cashmere industry is a subjective assessment of reality due to multiple dimensions associated with social, economic and environmental aspects. In the context of this study, reality can only be viewed by considering the judgements and interpretations of the respondents about their surrounding environment. Furthermore, the dimensions of quality and varied consumer preferences make the real-world cashmere industry operations complex. In the context of the cashmere industry, it is important to understand that most of the artisans were not formally educated and their literacy levels were relatively low. Therefore, it was considered impractical to examine the traditional cashmere value chain using objectivist methods such as surveys. Also, social, financial and environmental factors significantly influence the cashmere industry which is difficult to capture through objectivism. For these reasons, a constructivist ontological perspective was adopted to suit the study requirements and interpretivism is viewed as the epistemological position to properly understand human, material and institutional aspects that play critical role in the cashmere value chains. Each research approach i.e., quantitative, qualitative and mixed methods have their benefits and limitations. After considering the strengths and weaknesses of these approaches, and considering the research questions of the study, qualitative approach was suited best since it is consistent with the ontological and epistemological stance adopted in the study to address the aim of this research.

The research approach and procedure adopted in this study, aligned with the structure of the thesis, is presented in Figure 3.1.

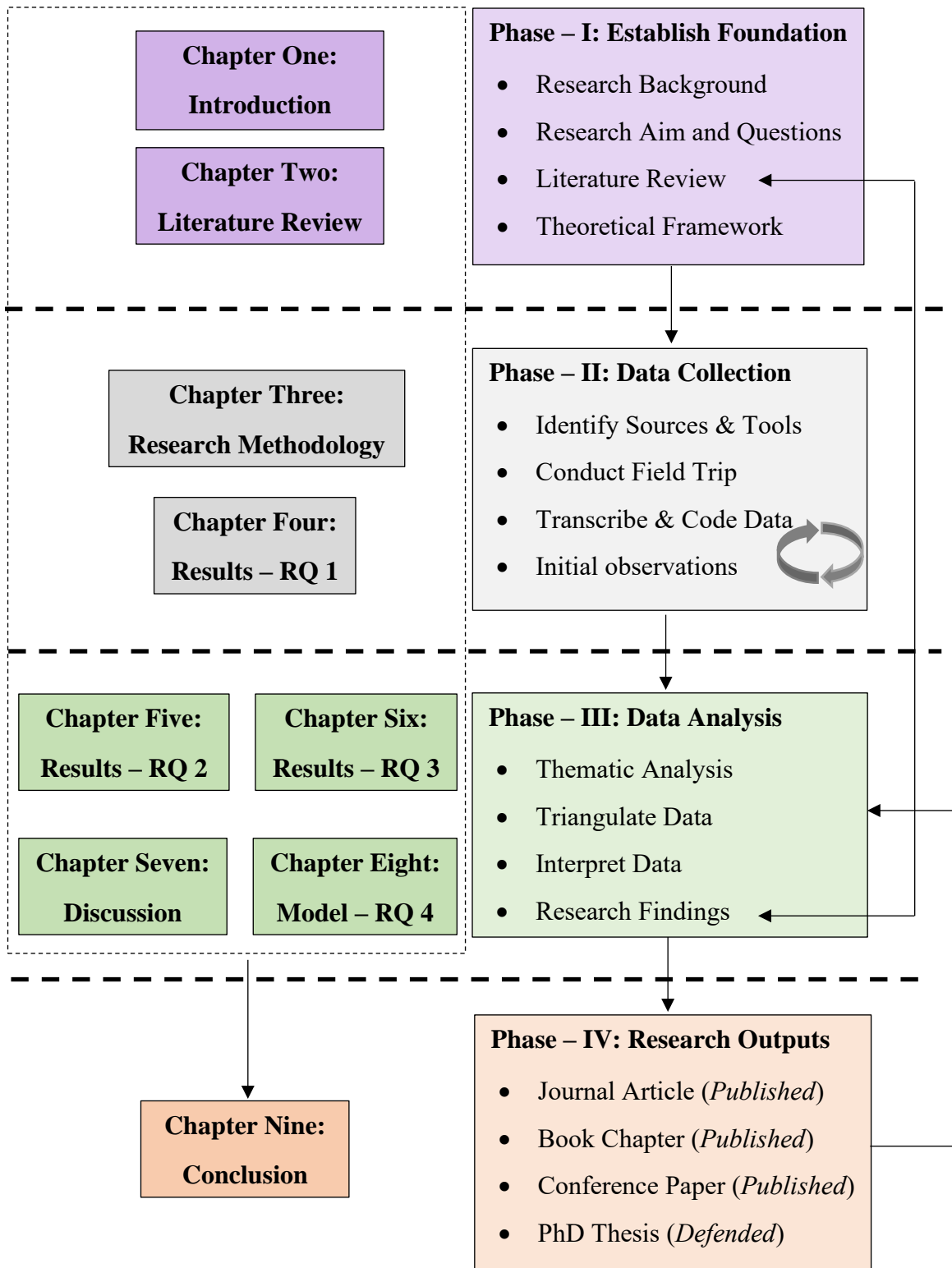


Figure 3.1 Flowchart of the research design and outcomes of the study.

3.4 Case Study

3.4.1 Justification for case study research

According to Bryman (2012, p. 67), a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context using multiple sources of evidence. Case studies are extensively used in empirical research and constitutes a larger base to conduct qualitative studies for theory development (Voss *et al.*, 2002; Eisenhardt, 1989). Furthermore, case study-based research impact on theory development and/or testing (Eisenhardt, 1989) as it may strengthen or weaken the explanations of a case by including (*comprehensiveness*) or excluding (*parsimony*) the constructs or variables from the study (Whetten, 1989). However, beyond the scope of the empirical inquiry, case studies are limited in generalisation of the findings (Yin, 2011, p.98). Notwithstanding, case studies are conducive to investigate a broad and complex phenomenon which have limited or no theoretical underpinnings (Eisenhardt, 1989; Danese *et al.*, 2006). In this research, based on the approach suggested by Eisenhardt (1989), an attempt is made to develop theory from the case study research.

A single case study is selected in this research. Single case studies provide the opportunity to explore the phenomenon from multiple perspectives within the bounds of the case (Mukherjee *et al.*, 2000). Also, single case studies allow flexibility and opportunity for in-depth exploration through multiple data collection methods (Yin, 2011, p.131). Among other reasons, a single case study can also be considered to study a unique scenario which suits well in the context of the cashmere industry. On the contrary, the limitation with selecting a single case is its lack of generalizability of conclusions through the possibility of misinterpretation and/or exaggeration of data (Voss *et al.*, 2002). However, this aspect is mitigated using a data triangulation design as presented in section 3.8.

In empirical investigation, four criteria are important i.e, place, participants, observation of the participants and process undertaken by the participants (Miles & Huberman, 1994). Based on the qualitative nature of the research, the researcher immersed in the ethnographic situation to obtain data that reflects the real-world traditional cashmere value chain operations in the Kashmir valley (Figure 3.2b) situated in the northern part of India (Figure 3.2a). The aim of ethnographic studies is to explore and gain deep insights and perceptions of the people in the context of the study (Reeves *et al.*, 2008). Capturing this aspect is critical for the present study to provide a rich and holistic view about the cashmere industry.

3.4.2 Location of the case study

Based on the research scope, it was appropriate to conduct the research in the Kashmir valley which consists of ten districts. Among these districts, three major centres (Srinagar, Budgam and Ganderbal; Figure 3.2b) involved with various aspects related with the cashmere operations were selected to understand the processes, the environment and present-day challenges the artisan communities face in the industry.

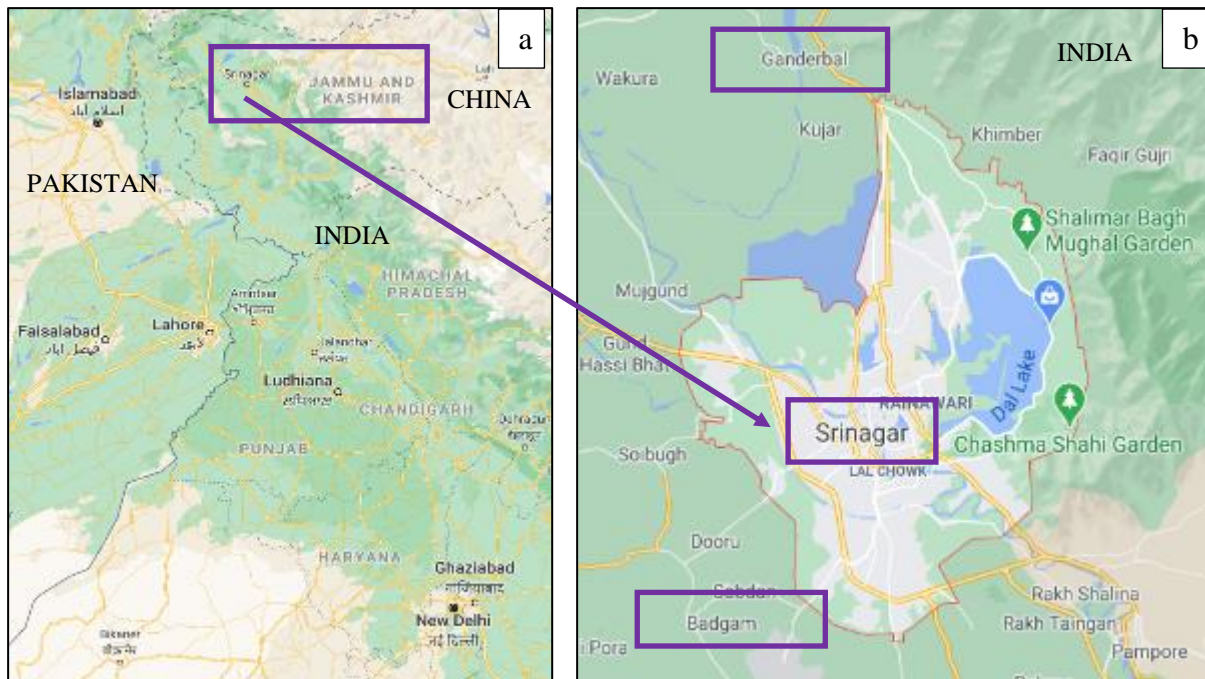


Figure 3.2 Location of the Kashmir valley in India (a) and the districts selected for the case study in the Kashmir valley (b).

In this qualitative inquiry, capturing the viewpoint of various actors was critical in providing a rich and systemic view of the cashmere processes. Through the field trip, the researcher gained valuable process and culture specific insights into the cashmere value chain operations which was helpful in addressing the research questions of the study.

3.5 Data Collection

Data are described as a collection of measurements, observations or description of an occurrence (Yin, 2011, p.129). Subject to the study requirements, data can be generated through quantitative and/or qualitative approaches and classified as primary and secondary. Irrespective of the data type, the three important aspects considered in generating data are the purpose i.e, why data are collected, the population of interest i.e, the data source and the

procedure i.e, how data are gathered. Regarding this research, these aspects are explained in detail. For data collection, ethics approval was obtained prior to the field trip from Massey University (Ethics notification no. 4000018473).

For data collection, the field study was carried out from December 2017 through to February 2018. This time frame was selected for few reasons. Firstly, to have minimal probability of disruption in the data collection process since incidents leading to disruption of day-to-day activities in the region generally escalate during the summer months (Economic Survey, 2016). This time frame selection was an appropriate decision since there was no instance of any disruptive activity throughout the field trip. Secondly, the artisan communities are not as busy during this time of the year as they are before the winters which is the high demand season for the cashmere products. Therefore, approaching the respondents was comparatively easier during winters as opposed to gaining access to them in the summer months when the artisan communities are busy working for long hours to fulfil the orders they get from the manufacturer. It is important to know that, fibre harvesting is not carried out during winters since the cashmere goat naturally sheds the fibre only after the winter season is over (see Section 4.3 for details). Also, during winters, due to infrastructural constraints it is difficult to access Ladakh (natural habitat of the cashmere goat) from Srinagar which restricts the accessibility to the region. Therefore, for these reasons, the upstream cashmere value chain aspects were not considered in this research.

3.5.1 Purpose

To address the inquiry under investigation, data are gathered through a variety of ways such as interviews, observation, survey, experiments and documentary evidence (Voss *et al.*, 2002). In this research, firstly, the purpose of data collection was to gain in-depth understanding of the cashmere industry by capturing the views of the stakeholders involved in various stages of the cashmere value chain operations. Secondly, after gaining familiarity with data, to develop theory from the research findings. This aspect is critical in the process of building theory from case study-based inquiries (Eisenhardt, 1989).

3.5.2 Population

In research, identification of appropriate population is critical in addressing the research questions of the study. Also, defining the population is significant in identifying the sampling

method which is crucial for a research investigation. Considering these aspects, four populations of interest were selected in this research.

- Cashmere retail websites
- Cashmere artisans in Kashmir, India
- Government officials involved with the cashmere industry in Kashmir, India
- Documents related with the cashmere industry in Kashmir, India

Data was also gathered from photographs and physical artifacts during the field trip.

3.5.3 Procedure

In this study, data collection was carried out in three phases. In Phase 1 of the data collection process, a survey of the cashmere products available on the retail websites (Appendix A) was carried out by the researcher. This was helpful to gain an understanding of the luxury apparel market (price and quality variants) of the cashmere products. Also, in Phase one, the interviews were conducted with the on-site retailers/exporters and the information about the downstream processes/artisans of the cashmere value chain was obtained. This was critical to understand the consumer trends and the impact these trends have in shaping up the cashmere operations.

In Phase two, based on the information gathered in Phase one, the researcher collected information about multiple cashmere processing locations in the Kashmir valley. In this phase, an official working in the Kashmir Arts Emporium in Srinagar provided information about the cashmere industry and provided insights from the viewpoint of the government's initiatives taken to restore the traditional cashmere craft in the region. The same official also introduced the researcher to the representative of an NGO who is associated with the promotion of the traditional cashmere practices in the region. Furthermore, the official provided the reference to another government official working at the Crafts Development Institute (CDI) to gain deeper understanding of the cashmere industry and to get acquainted from the commercial aspects associated with the cashmere operations.

In Phase three of the data collection process, various artisan categories involved in different cashmere processes were contacted to collect primary data. Prior to this, based on the secondary data findings, a comprehensive framework of queries was generated for artisans (Appendix B) and manufacturers (Appendix C). Through this, a framework was generated to address the research questions of this investigation. Also, this was helpful in asking relevant questions during the field trip and the information collected was corroborated across different supply

chain operations to achieve a deeper understanding of the data gathered from the interviews and observations. The visits to different locations helped the researcher significantly not only in collecting data from different sources but also in understanding the intricacies involved with traditional and modern practices in the cashmere industry. An illustration of the data collection process and different phases involved in it are presented in Figure 3.3.

3.5.4 Interviews

In qualitative research, perceptions of the people are important to understand the phenomenon under investigation (Yin, 2011, p.132). Through interviews, a personal communication channel is established with the participants of the study which is helpful in capturing deep insights about the process being investigated. In this research, 22 semi-structured interviews from various cashmere value chain stakeholders such as suppliers (S), spinners (Sp), weavers (W), manufacturers (M), dyers (Dy), embroiders (E), tweezers (Tw), retailers (R) and government officials (G) were conducted at multiple sites in the Kashmir Valley. These stakeholders were involved with both traditional handloom (THL) and advanced handloom (AHL) operations.

To ensure that relevant information was captured in the interviews, an interview template specific to each type of the respondent was used. For instance, interview questions for different artisan categories and other stakeholders such as retailers and government officials were generated to gather information specific to their respective domains (Appendix D). During the interviews, communication with the artisans was in *Urdu* or *Kashmiri*; the two widely used languages in the Kashmir valley. The researcher is well-versed in *Urdu* and its various dialects, which was influential in obtaining in-depth information and valuable insights from the respondents. However, some of the responses were recorded in *Kashmiri*, which were translated into *Urdu* by a translator who accompanied the researcher during the data collection process. To ensure that the translation was carried out accurately, the recordings were played for verification to the local contact who was introduced to the researcher by a government official. All translations were found to be correct. Interviews with the government officials were conducted in English. In the interviews, aspects such as quality, blending issues, industry standards, expertise, expensiveness (time, effort, cost), environmental awareness, social dynamics and financial concerns formed the basis to capture an in-depth understanding surrounding the cashmere value chains.

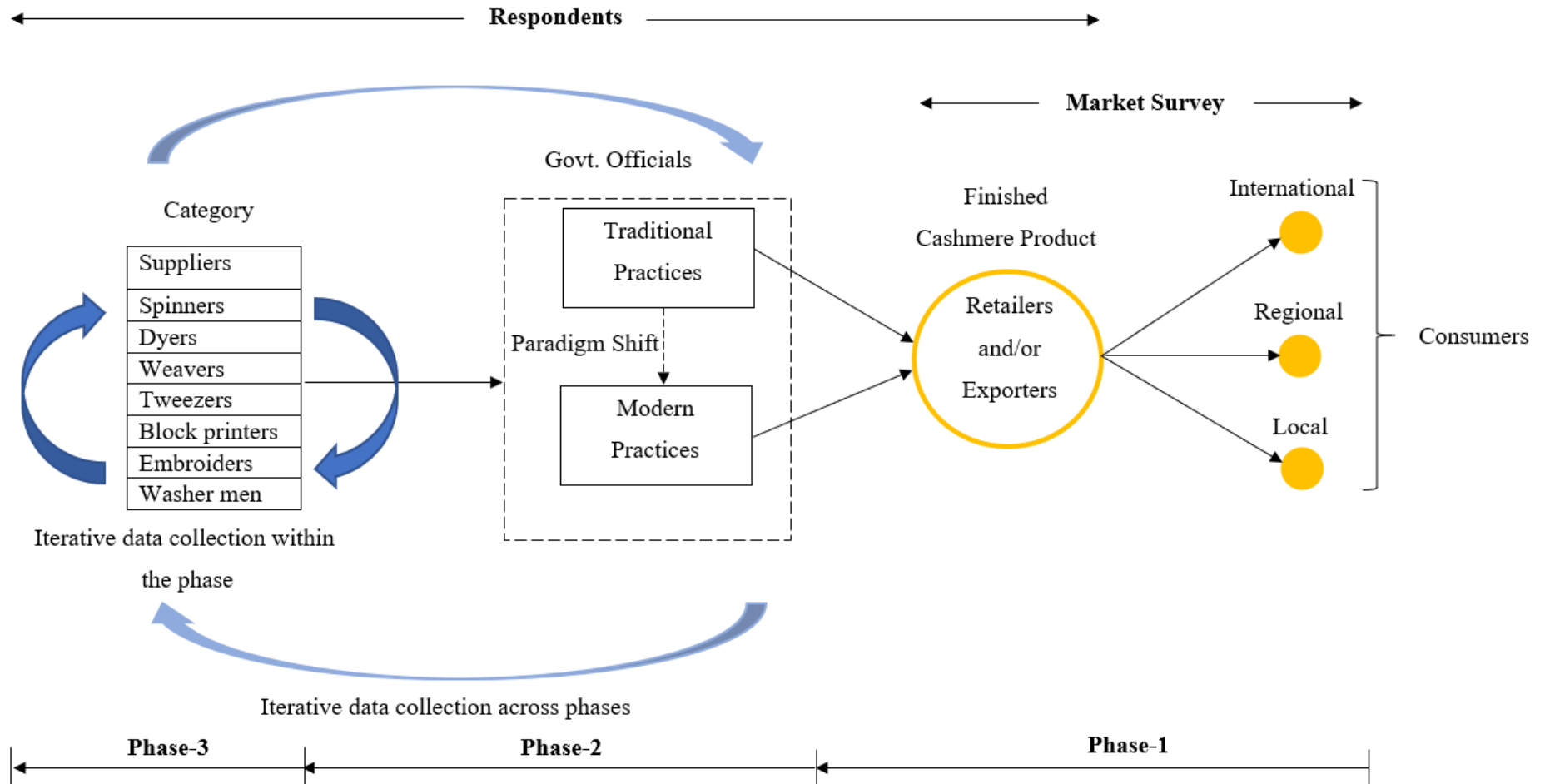


Figure 3.3 Data collection process across different phases of the research.

Prior to the interviews, in a few instances, considerable time was spent with the respondents to make them feel comfortable with the research objective, interview process and, more importantly, to develop a degree of trust with the respondents, which was essential for the research. Among artisans, the data collection process started with interviewing the weavers. Initially, it was challenging to make the weavers understand the direct benefit of this research to them as the outcome of the research would not result in any monetary gains. However, the weavers realized that by sharing their experiences and insights it might help the craft and the artisan communities. Most of the weavers let the researcher observe and record the weaving process.

Similarly, interviews were conducted with artisans who were involved with other processes of the cashmere value chain. Traditionally, the spinning process has been carried out by women. Spinning is carried out in the confines of the homes but finding a spinner as a respondent who is willing to be part of the research was challenging. As observed by the researcher there are numerous reasons for the women spinners to have reservations such as the difference in gender, low literacy levels, lack of exposure to the outside world and other societal and religious aspects. Therefore, as desired by the respondents, interviews and process observations with women spinners were conducted in the presence of their male relative(s) (husband, father, brother or son) in their home. Most of the interviews were audio recorded and transcripts were generated from the recordings. All interviews were conducted at the workplace premises of the artisans. Through this, the researcher also had an opportunity to observe the process the respondents were involved in. To acquire an in-depth and well-rounded understanding of the cashmere processes, the responses from within an artisan category were spaced out i.e., not conducted at once. As a result, the data collection process was not linear but cyclical i.e, in Phase two and three, the respondents were contacted based on the requirements of the data collection process (Figure 3.3). Furthermore, a similar iterative data collection approach was followed within Phase three in gathering information from various artisan categories. Consecutive interviews from the same artisan category were avoided to get an opportunity to reflect on the responses from the respondents. Also, based on the artisans' responses, opinion of the government officials was sought to seek their opinion on the concerns raised by the artisans. Through this, a range of perspectives were gathered and helped mitigate the risk of missing out on or overlooking any information. The interviews were carried out until a degree of saturation occurred and a comprehensive picture of the research objectives was achieved. This process was carried out to strengthen the conclusions drawn by the researcher. However, in case of difference of opinion, due to the conflict of interest among the stakeholders, the researcher

based the conclusion surrounding the conflicting aspects through the findings from the literature.

3.5.5 Observations

Apart from conducting the interviews, some of the processes such as dehairing (D), spinning, weaving, tweezing, embroidery, washing (Ws), dyeing and Block printing (BP) were also observed and video recorded to gain deeper insights of the intricacies involved with the cashmere value chain operations. In ethnographic based case studies, the role of observation is significant as they help capture data specific to the research setting (Yin, 2011, p.143). Moreover, through observations, data related to physical characteristics of the setting, ambiance, environment can be obtained which otherwise is impractical to get from instruments such as surveys or interviews (Yin, 2011, p.145). Furthermore, observational data provides understanding of the actions, norms, values of the phenomenon being studied from the wider social and historical contexts (Fetters & Rubenstein, 2019). Observations are conducted to understand the context of the study, behaviour of the respondents and the process under investigation (Fetters & Rubenstein, 2019). Through observations, the researcher gains valuable direct personal experience and knowledge of the phenomenon being studied.

In observations, the context broadly signifies the place, time, purpose and experience of the person involved in the research, content captures the events that take place during the period of observations whereas concepts provide deeper understanding of the observations and help build the foundation for analysis based on the research question and the theoretical orientation of the study (Fetters & Rubenstein, 2019; Table 3.2). An overview of different aspects of observational research is presented in Table 3.2.

Table 3.2 Field observations: context, content and concepts.

Category	Definition	Focus
Context	The circumstances (both material and theoretical) under which observations are being conducted, as well as any historical, sociocultural, political and other information that may directly (or indirectly) influence data collection.	Who is there as observer?
		What is your reason for being there?
		Why this location?
		What is your state of mind (confused, tired, excited)?
		What are your key areas of interest based on your prior research experience and/or scholarly background?
Content	The matter or substance of what happened	Who are the participants? How are they related?
		How do participants interact, if at all?
		What actions/events are occurring?

	What is the timing/sequence of events?
	What quotes best capture the exchange that occurred?
	What have you learned that you did not know before the observation?
	Does this observation help support or refute your hypothesis/expectations?
	How is this observation related to prior observations or to your reading of the scholarly literature?
Concepts	What are some potential implications of what you have observed?
	What new questions (research or otherwise) arise from this observation?
	How do participants respond to the presence of an observer? Are they excited, anxious, sceptical, wary?
	What historical or current events may influence this response?

The larger theoretical context to which observations connect, either as evidence of or refutation of theory; theoretical insights that emerge from observations; directions for future research.

In this research, prior to the interviews and observations, informed consent was obtained from the participants. For privacy, respondent anonymity is practiced throughout the study. During the observations, as found appropriate, informal discussions were carried out with the artisans to know about the activities they do during the process they are part of. In many instances, the artisans shared their personal experiences and anecdotes associated with the craft and how over the years things have changed as compared to what they have heard from their ancestors about the importance of their craftsmanship in defining the value in the final product. In this research, the observations were significant in triangulating the data obtained from the study participants.

3.5.6 Photographs and Physical artifacts

During data collection process, research-generated photographs of various processes across the cashmere value chain activities were obtained. Such photographs are part of the field notes and viewed as a valuable data source (Bryman, 2012, p.547). Also, in a few instances extant photographs (not produced for the research) of the cashmere processes were used in the study to illustrate the discussion of findings. As compared to other data sources, physical artifacts are relatively less significant however, they can be relevant subject to their use in the case study (Yin, 2011, p.109). Data were also collected from the artefacts which helped gain a well-rounded perspective of the cashmere products made from the traditional practices. The

researcher examined different types of cashmere articles such as shawls and stoles made from both genuine and blended fibres. Photographs of the artefacts were also captured and presented in different sections of the thesis as appropriate.

3.5.7 Documents

In case studies, documents are used to corroborate and support evidence obtained from other data sources (Yin, 2011, p. 109). However, documentary evidence providing contradictory information with respect to other sources needs to be inquired further for a holistic analysis of the problem under investigation. In this research, documentary evidence was considered to understand cashmere issues prevalent in the region from different perspectives and to mitigate any bias which may occur from the data gathered from interviews and observations. The documents in the form of secondary data were obtained from various industry stakeholders including the government officials, weavers and manufacturers. Also, over the years, various media platforms had covered the issues related with cashmere industry prevalent in the region. Among them, significant attention has been given in the print media outlets through newspaper articles published in India and overseas. These articles were also part of the secondary data considered in the study.

In summary, to understand the multitude of views surrounding the cashmere value chains operating in India, data were collected through interviews, observation, photographs, documentary evidence and cashmere retail websites (Table 3.3).

Table 3.3 Summary of data sources

Data		S	D	Sp	M	W		Other Processes					R	G		
Type	Source					THL	AHL	Dy	E	Tw	Ws	BP		1	2	3
Primary	Interview	✓		✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
	Photographs		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓			✓
	Observation		✓	✓		✓	✓	✓	✓	✓	✓	✓				
Secondary	Websites												✓			
	Documents			✓		✓	✓									✓

Data obtained both from primary and secondary sources helped address the limitations that arise from relying on a single data collection method.

3.6 Sample Selection

In qualitative studies, the focus of the sample design is to capture in depth information through an appropriate selection of samples rather than the number of samples (Bryman, 2012. p.186). Since samples are meant to be representative of the population, therefore, it is important to adopt the best suited sampling approach for each population considered in the study.

3.6.1 Cashmere retail websites

The first population of interest was the online cashmere retailers (Appendix A) who are explicitly dealing with products made from the cashmere fibre. To capture a comprehensive cashmere market picture, the online retailers based in Australia, Europe, India, New Zealand, and North America were considered in the study. Data were collected to determine the relevant market and to assess the economic importance of the cashmere products. Based on these aspects, using purposive sampling approach, a sample of 31 online cashmere retailers, 3,582 products in 36 different categories were gathered. The range and type of cashmere products available on the cashmere retail websites indicated the consumers preferences across different market segments. In purposive sampling, the units are not selected using a probabilistic approach but rather by considering their significance in providing relevant data. In Figure 3.4, cashmere retailers along with the different types of cashmere products listed on their websites is presented.

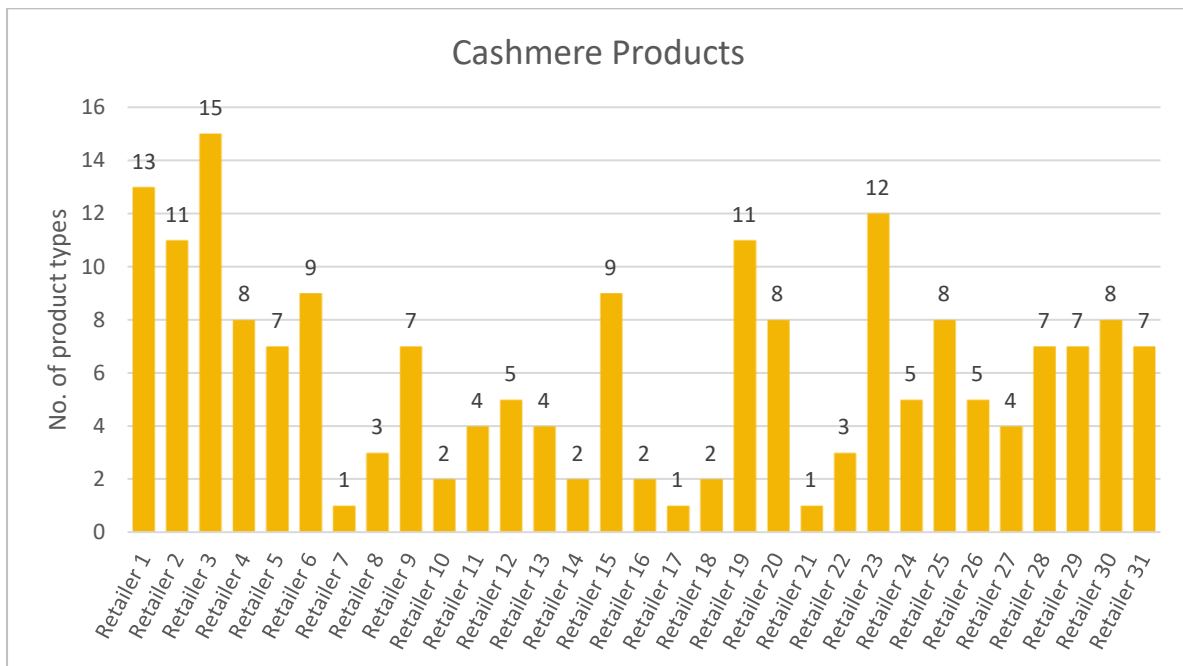


Figure 3.4 Online retailers of cashmere products

After acquiring the information on a variety of cashmere products available on retailers' websites, the researcher gained an overarching view of the cashmere market. This information was significantly helpful in the subsequent data collection phases.

3.6.2 Cashmere artisans in Kashmir, India

The second population of interest considered in the research were cashmere artisans based in the Kashmir valley. From this population, the samples were drawn from the artisans who were involved across various cashmere value chain processes. These subjects were classified into two broad categories. In the first category, artisans involved with spinning and weaving – the two prominent activities of the chain (Yaqoob *et al.*, 2012) were considered. Whereas, in the second category, the artisans who were involved with cashmere processes except spinning and weaving were considered. In each of these categories, purposive sampling approach was considered suitable for selecting the respondents. As observed, in many instances, artisans of the same expertise and skill set not only know one another individually but also, they mostly live in the same locality known as a *mohalla* which is generally identified with their profession such as *Yandar Katun* (spinning) *bunkar* (weaving) or *rangrez* (dyeing). This was helpful in accessing potential respondents for data collection. However, it was critical to collect data from credible sources who are experts in their field rather than those readily available. Therefore, the major criterion for sample selection from this population was the experience of the artisan in their respective craft. Therefore, the samples were selected purposefully across all cashmere value chain stages who were well experienced in their crafts and possess knowledge about the cashmere industry. To acquire comprehensive understanding of the day-to-day cashmere operations' related aspects, data were collected from multiple sites from various stakeholders (Table 3.4) across different processes of the chain.

Table 3.4 Primary data respondents across multiple sites in the Kashmir valley

Category	Respondent		Data Sources		
	Identifier	Sites Visited	Interviews	Observations	
Supplier (S)	S1, S2	2	2	-	
Dehairing (D)	D1	1	-	1	
Spinner (Sp)	Sp1...Sp5	5	3	3	
Manufacturer (M)	M1...M3	3	3	-	
Weaver (W)	Traditional (THL)	THL1...THL3	3	3	3
	Advanced (AHL)	AHL1...AHL3	3	3	2

Dyer (Dy)	D1	1	1	1
Block Print (BP)	BP1	1	-	2
Embroider (E)	E1...E3	2	1	2
Tweezer (Tw)	T1	1	1	1
Washing (Ws)	W1	1	-	1
Retailer (R)	R1, R2	3	2	-
Govt. Official (G)	G1...G3	3	3	-
Total		29	22	16

In Table 3.5 the age and experience of artisans such as spinners and weavers along with artisans from other categories such as dyer, block printer, embroider, tweezer and washer man are presented. Similar to other professions, in the cashmere industry, greater the experience of the artisan better it is for the craft. It is important to note that, in Table 3.5, data regarding the stakeholders including suppliers, retailers and government officials are not presented as they are not involved in any craft as such. Therefore, the information about these chain stakeholders was excluded from Table 3.5.

Table 3.5 Classification of artisans based on their age and experiences in their craft

Category	Years	Artisans		
		Spinners	Weavers	Others
Age	25 – 30	-	-	✓
	31 – 35	-	✓	✓✓
	36 – 40	✓	✓	-
	41 – 45	-	-	-
	46 – 50	-	✓✓✓	-
	51 – 55	✓	-	✓✓
	56 – 60	✓	-	-
	> 60	-	✓	✓
Experience	0 – 5	-	-	-
	6 – 10	-	✓	✓✓✓
	11 – 15	-	-	-
	16 – 20	✓	✓✓	✓
	21 – 24	-	-	-
	25 – 30	✓✓	✓✓	-
	31 – 35	-	-	✓
	> 35	-	✓	✓

During the data collection process, field notes were generated to record explicit (physical setting, actions) and implicit (emotions, tone) observations of the participants of the study. In this study, women spinners were between 36 to 60 years in age and had substantial experience of 16 to 30 years in manually spinning the yarn. For weaving, the weavers were men between 31 to 60+ years in age and possessed experience of 6 to 35+ years. In ancillary categories, the artisans were in the age range of 25 to 60+ years with an experience of 6 to 35+ in their respective crafts.

3.6.3 Government Officials

The third population from which data were collected were the government officials who were involved with the cashmere industry in different capacities. For the government officials, the sample selection, it was ensured that officials, in some capacity, were involved with cashmere related decision-making aspects through their respective job roles. Therefore, three officials from the government departments were considered using purposive sampling technique. These officials were employed with the Kashmir Handloom and Arts Emporium and the Crafts and Development Institute, Srinagar.

3.6.4 Documents

The fourth population considered in the study comprised of documents. Documentary evidence relevant to the research was collected from different industry stakeholders. Using convenience sampling approach, a sample of documents including Government of India Handlooms Act of the Parliament 1985, correspondence letters and orders exchanged between various government departments and institutions were obtained. These official documents address the issues and malpractices involved with the cashmere operations in the region. Furthermore, in these documents the steps taken by the government institutions to address the mechanised cashmere operations is highlighted. It was important to have an insight of the correspondence among various government departments at different levels. The gist of information contained in the documents collected is presented in Table 3.6.

Table 3.6 Documentary evidence collected from various sources

Data Source	Document	
	Type	Information
Government of India	Handlooms Act of the Parliament 1985	Describing and classifying different processes involved within the handloom sector. For cashmere, explicitly prohibits the use of synthetic yarns.
Kashmir Pashmina Karigari Union, Srinagar	Letter	Representing the plight of cashmere artisans especially spinners and weavers to different government officials
Dep. Director Handicrafts, Quality Control Division, Srinagar	Letter	Inspection of unauthorised mechanised processes involved in cashmere manufacturing.
Sher-e-Kashmir University of Agricultural Sciences & Technology, Srinagar	Notice	Distinction between cashmere and wool fibres in regard to various parameters used for processing different products.
Handloom Development Department, Srinagar	Letter	Recommendation to ban the manufacture of traditional cashmere products on mechanised processes.
District Magistrate, Srinagar	Order	Restriction on manufacturing cashmere products on mechanised processes and comply with section 144 of criminal procedure code (CrPC).
Superintendent of Police, Srinagar	Order	Imposition of restrictions under section 144 of CrPC to take action against the violators.
Directorate of Industries and Commerce, Srinagar	Order	Prevent the registration of mechanised processing units for cashmere production in the valley.
District Industries Centre, Srinagar	Letter	Non-registration of mechanised units for cashmere weaving.

GI Label Information	Flyer	Promoting Geographical Indication (GI) mark on traditional cashmere processes to manufacture genuine products.
Craft Development Institute, Srinagar	Quality Manual	Classification of testing parameters for various cashmere products. Certification of different processes and product labelling using the GI mark.
News Papers	Clippings	Grievances of artisans related with malpractices prevalent in traditional cashmere industry in Kashmir, India

3.7 Data Analysis

In this section, generation of codes from the transcripts and the thematic analysis is presented to provide an overview of the data analysis approach carried out in this research.

3.7.1 Coding

After collecting the data from the field trip, the researcher transcribed the interview data. This time consuming and exhaustive activity was helpful to re-familiarize with the dataset to gain an overarching view of the responses collected from different sources in the study. Through this, codes were generated from the interview responses and from the documents collected from different stakeholders of the cashmere industry. NVivo 12 Pro software was used to generate codes and conceptualise data. A code summarises (or condenses) information through a word or short phrase to capture the essence for a portion of text or visual data (Saldana, 2009, p. 3). The process of coding is a transitional and cyclical act between data collection and data analysis which is subject to the researcher's ontological and epistemological orientations (Saldana, 2009, p.4). Therefore, for consistency in coding, the researcher needs to keep their research aim and objectives handy to focus on the overall goal of the coding process of the study. In this process, keeping the focus on the research question in the case study-based inquiry is important in developing theory (Eisenhardt, 1989). During the coding cycles, the codes were refined by relabelling, rearranging, reclassifying the coded data into new or modified (sub) categories. Some codes were dropped altogether as coding progressed in the research. A classified list of the NVivo codes generated in this research is presented in Appendix E. After coding, all the codes that share similar characteristics were categorised and linked together. Throughout this

process, a constant comparative analysis was carried out within the categories to address any differences or similarities which is *sine qua non* in qualitative studies. Finally, similar categories or sub-themes were placed together and later collapsed into themes. A theme captures repetitive ideas containing codes with common point of reference to unify ideas of the research inquiry (Vaismoradi *et al*, 2016). Finally, theory is developed using the inductive reasoning which builds from a specific (*codes*) to generic scenario (*themes*) by demonstrating how themes are systematically related for more general and higher-level abstract ideas (Eisenhardt, 1989). An illustration of the codes-to-theory development process (Saldana, 2009, p.12) adopted in this qualitative research inquiry is presented in Figure 3.5.

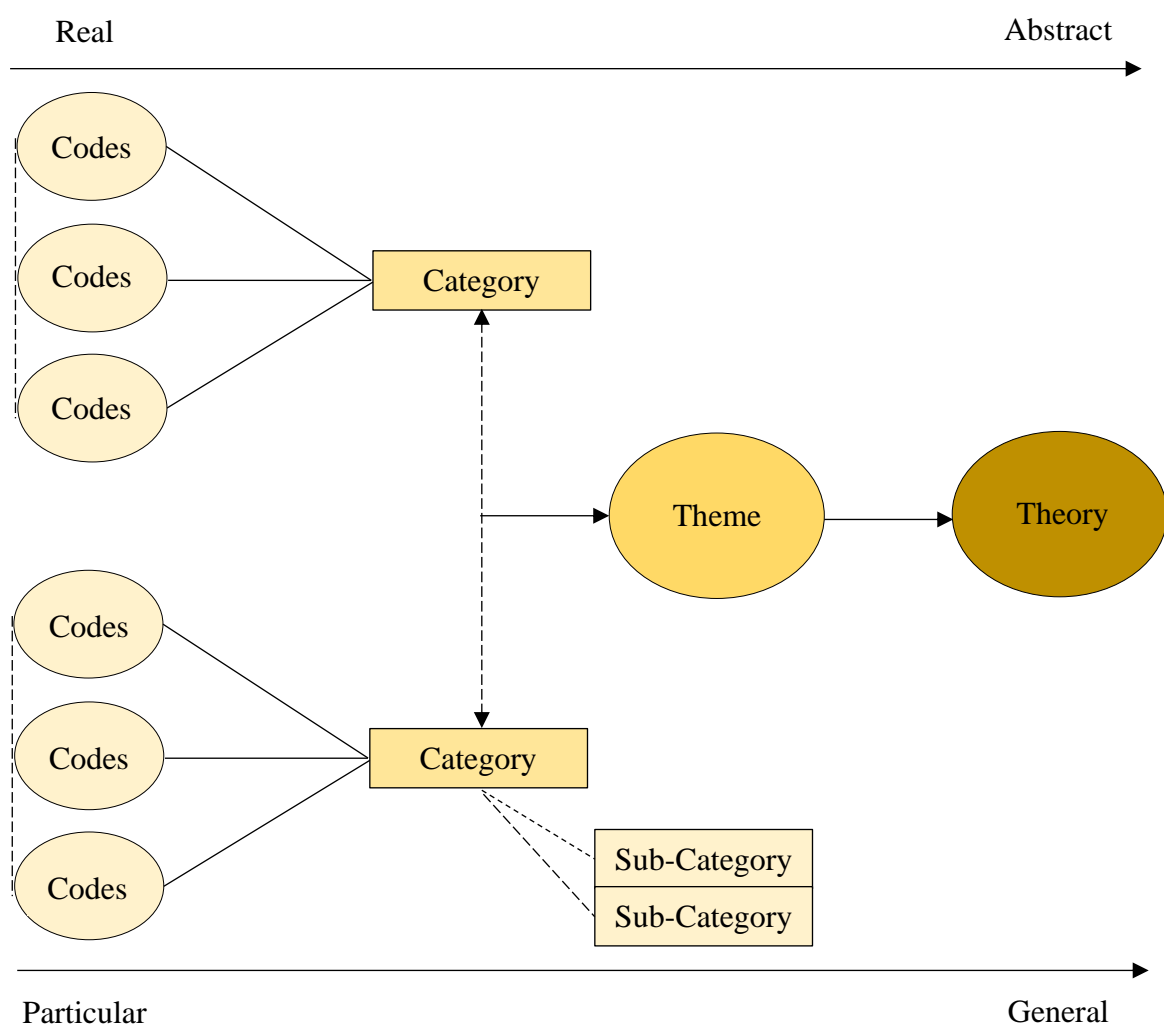


Figure 3.5 A streamlined codes-to-theory model for qualitative inquiry.

3.7.2 Thematic Analysis

Thematic analysis was carried out to have comprehensive view of the data obtained from different participants of the cashmere value chain operations. In thematic analysis, an important issue is the subjectivity surrounding the interpretation of participant responses in the research enquiry (Vaismoradi *et al.*, 2016). Therefore, for a rigorous qualitative case study analysis, an illustration of thematic analysis approach used in this research is presented in Figure 3.6.

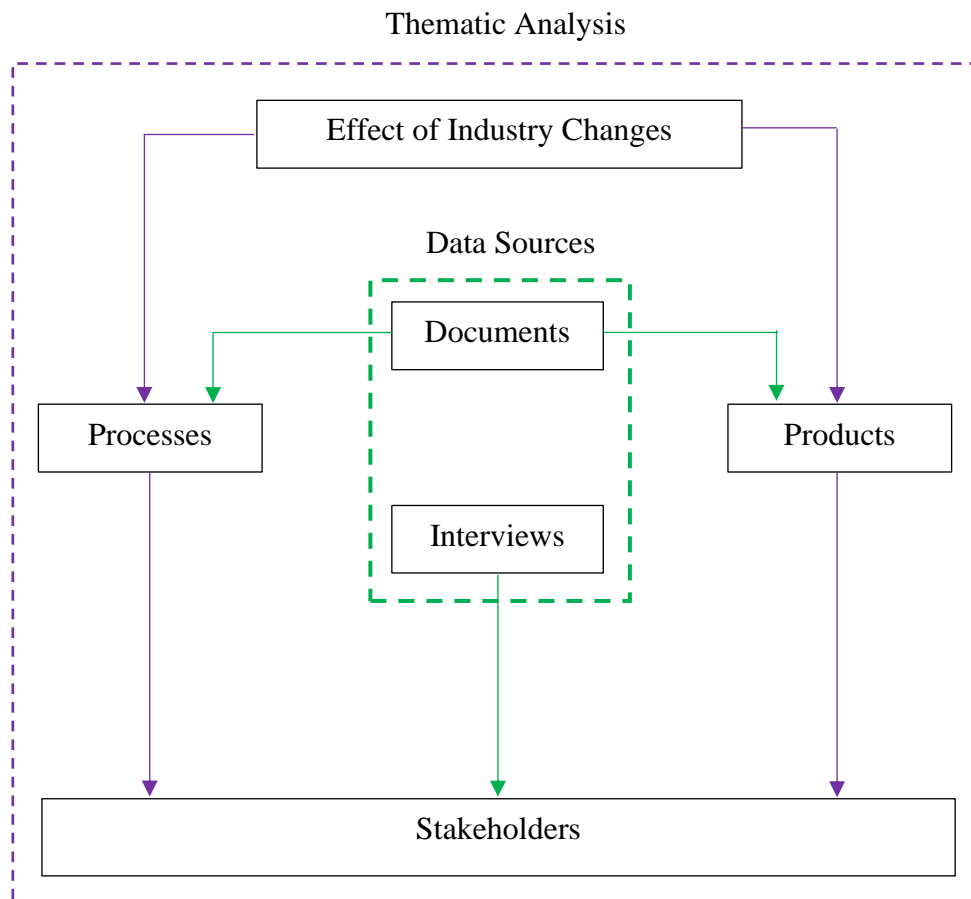


Figure 3.6 Data sources and thematic analysis framework to capture the effect of industry practices on the cashmere value chain processes, products and stakeholders.

As stated in section 3.3, there are different approaches to research and based on the ontological (*constructivist*) and epistemological (*interpretivist*) stance adopted in this study, theoretical contribution is made from an ethnographic case study by observing the relationships and patterns among the themes through a conceptual model presented in Chapter 8. To build theory from case studies, overlap of data analysis and data collection is an iterative procedure in which field notes play significant role in accomplishing this overlap (Eisenhardt, 1989). In this research, field notes were generated to reflect on the observations, impressions and analysis of

the happenings during the research. This activity helped the researcher in making required changes during the data collection process in Phase two and three (Figure 3.3) to probe the emergent themes (Figure 3.5). In theory generation, making adjustments during the data collection process is a key feature in the case study research to capture new insights (Eisenhardt, 1989). Therefore, a controlled flexibility is advantageous to capture an opportunity to gather new themes for resultant theory (Eisenhardt, 1989).

3.8 Limitations of Methodology

Reliability and validity are important criteria with regards to assessing the quality of qualitative investigations (Bryman, 2012, p.389). In qualitative inquiry, the design of study and the analysis of results is determined by reliability and validity of the investigation under study (Patton, 2001). Reliability is imminent to ensure validity in the research findings; and through this, trustworthiness of the research is established (Bryman, 2012, p.389).

3.8.1 Reliability

According to Bryman (2012, p.390), reliability is an important aspect in qualitative investigations and captures two broad aspects; consistency associated with primary data collection (internal reliability) and whether the findings of the study are replicable (external reliability). This indicates that the outcome is expected to be dependable and repeatable.

In this research, to achieve internal reliability, data from various sources located at multiple sites was collected through in-depth interviews, observations and photographs across different cashmere value chain stages. Furthermore, documentary evidence gathered from various stakeholders assisted in comparing the findings of the study. Also, during the study, information regarding initial findings were shared through informal conversations with a non-government organisation (NGO) as this was helpful to achieve consistency and to avoid any bias in the study findings. External reliability is primarily ascribed to quantitative research and difficult to achieve in qualitative studies (Bryman, 2012, p.390). Firstly, in qualitative research, the events or processes are interpreted based on the social phenomenon studied under context specific aspects (i.e, temporal and geographical) related with the study. Secondly, the qualitative findings are subject to discussion due to the interpretivist approach of the qualitative research methods (Bryman, 2012, p.28). Therefore, qualitative scenarios are almost impossible to replicate as they evolve continuously and depend on the context of the study.

3.8.2 Validity

Data validity is another important aspect that establishes a degree of trust in the research findings. Validity primarily considers whether the research findings are measured appropriately and the degree of confidence the researcher has from such findings (Bryman, 2012, p.390). Validity is further classified into two aspects i.e., internal validity and external validity. Internal validity is significant in establishing the authenticity of the causal relationships observed and ensures credibility of the work (Bryman, 2012, p.390).

For internal validity, data collected from multiple sources is triangulated to achieve convergence in the case study (Bryman, 2012, p.392). Triangulation helps address biased or partial assessment of the phenomenon. In this approach, not relying on the interpretation of the findings using a single source is desired and more than one dimension of the phenomenon under study using at least two data sources or methods is captured (Bryman, 2012, p.392). In this study, triangulation is achieved through interviews from various stakeholders involved at different stages of cashmere value chain processes, through process observations and using secondary data sources. For instance, if weavers blame the suppliers or manufacturers for providing blended fibres for their operations then such statements were cross checked with the responses from the government officials to gain an overview of the availability of inauthentic cashmere fibre in the marketplace to establish credence in the artisans' responses. The major objective to triangulate data obtained from a variety of sources is to ensure that conclusions drawn by the researcher are valid, unbiased and acceptable.

To obtain peer feedback on preliminary research findings, a book chapter covering the developments and sustainability issues prevalent across various cashmere value chain stages was published in '*Sustainability in Luxury Fashion Business*' by Springer, Singapore (Ishrat *et al.*, 2018). Based on the primary data results, the researcher presented the conceptual model (QASHMIR) for the sustainable development of the cashmere industry in an international conference (ICITM 2019) held at University of Cambridge, UK. These research findings were published in Scopus and Ei Compendex indexed conference proceedings (Ishrat *et al.*, 2019). Furthermore, the research findings capturing the economic, social and environmental aspects in the cashmere industry were published (Ishrat *et al.*, 2020) in *Sustainability* – an open-source journal having an impact factor of 3.251.

External validity is associated with the applicability of the study outcome in different contexts to ensure generalizability of the findings (Bryman, 2012. p.390). In qualitative studies, generalization can be captured through the development of a theory to demonstrate how different outcomes in distinct situations can be achieved through the same process. In

qualitative research, however, external validity is relatively difficult to achieve (Voss, 2002) and single case studies further restricts the generalizability of the findings (Yin, 2011, p.98). Moreover, in the context of qualitative research, the nature and relevance of generalization is subject to discussion. In this work, practices adopted in a specific context can be generalized and may be considered transferable into other settings. For instance, the artisan issues and institutional challenges faced in the cashmere value chains may be applicable in similar other industrial contexts involving traditional practices.

3.9 Ethical Considerations

The study follows the guidelines provided in Massey University's code of ethical conduct for research involving human participants. In this work, to safeguard the interests of the stakeholders of the research such as Massey University, the researcher and respondents' ethical considerations were taken care of prior to proceeding with the data collection process.

3.9.1 Research Participants

The primary source of information are people. In this research, all respondents contacted were adults and children were not involved at any stage. Industry stakeholders such as suppliers, a range of artisan communities, government officials and retailers were interviewed. Prior to data collection, the respondents were briefed verbally about the purpose of the research and their involvement in the study. Through appropriate instruments, written informed consent was obtained from all the respondents who participated in the research to ensure privacy and confidentiality of data and respondents. In the study, a unique identifier was given to the respondents to keep their identity anonymous.

3.9.2 Socio-cultural and Religious aspects

Throughout the field trip the researcher ensured that social, cultural and religious sensitivities of the place and the participants is respected. For instance, majority of the population of Kashmir valley follows the Islamic faith. In Islam, five times daily prayer is obligatory to male and female adults. The researcher ensured that prior to the time of the call for prayer – which is one of the five tenets of Islam – respondents were not interviewed so as not to deprive them to perform their mandatory religious practice. The researcher was also sensitive towards the social and cultural dynamics prevalent in the region. In an instance a weaver politely declined to let the researcher record the interview due to their reservations. The findings from this

interview were captured by the researcher manually during the interview and reflected upon later. Similarly, some of the respondents (mostly women spinners) were not comfortable with the recording, and therefore, in such instances their responses were also noted down by the researcher manually.

3.9.3 Research Data

The confidentiality of data is maintained through appropriate instruments signed by the concerned stakeholders. Throughout the research, data is kept secured both electronically through password secured mechanism and in the form of hard copies. However, post completing the research and publishing the study findings, data will be destroyed. There is no conflict of interest in this research. A conflict of interest is a situation that leads to incompatible aspirations between the stakeholders involved in the activity. However, in this research, as ascertained by the researcher, the probability of conflict of interest is negligible since the major contributing factors to such a conflict such as finance, control, credit is not involved in the study.

3.10 Conclusion

The chapter outlines the research methodology adopted in the study. In this qualitative inquiry the constructivist ontological position and interpretivist epistemological approach was considered to understand human, material and institutional aspects that play critical role in the cashmere value chain operations. Through multiple primary (interviews and observations) and secondary data (documents and websites) sources, data was gathered. In this research, based on inductive approach, the research question of the study was addressed and, in doing so the reliability and validity aspects associated with the research findings are discussed. Finally, ethical considerations pertinent to the research are presented.

4 Results – Insights into Cashmere Value Chains

4.1 Overview

Chapter four presents a description of cashmere value chain operations and the actors involved in the industry. In this research, it was critical to understand various chain processes through a systematic approach. Section 4.2 captures the first research question and its objectives considered in the study. In Section 4.3, the first value chain stage i.e., the cashmere fibre procurement sourcing channel is presented. Section 4.4 covers the second stage of fibre processing. In this stage fiber; dehairing, cleaning, sorting and blending aspects are discussed. Whereas, section 4.5 presents the third value chain stage of transformation. In this stage, a detailed description of aspects such as spinning, weaving and other ancillary activities associated with cashmere chains are presented. The fourth stage of labelling is captured in section 4.6 in which industry standards corresponding to cashmere products are covered. Section 4.7 captures multiple cashmere value chains and conclusion is presented in Section 4.8.

4.2 Research Question One

In this chapter, the first research question of the study i.e., to understand the role and significance of artisanal communities and product labelling in the cashmere value chains in India is addressed. For this, cashmere value chains in India were explored to gain an in-depth understanding of the processes and the involvement of artisanal communities in the cashmere industry (objective one). Furthermore, an understanding of the existing state of labelling was obtained to develop a labelling distinction mechanism in the cashmere industry (objective two). To address the first objective of the study, a generic cashmere value chain is classified into four broad stages: fibre procurement, fibre processing, transformation and product labelling (Figure 4.1). It was more pertinent to classify and view the cashmere value chain through these stages due to their significance in capturing and establishing luxury value to the end consumer (Ishrat *et al.*, 2018). Data were collected from interviews conducted with a range of artisan communities and by observations of the processes across multiple locations in the Kashmir valley. The objective of the interviews and observations was to gain insights into the interactions between the cashmere artisans and processes at each stage of the chain operations.

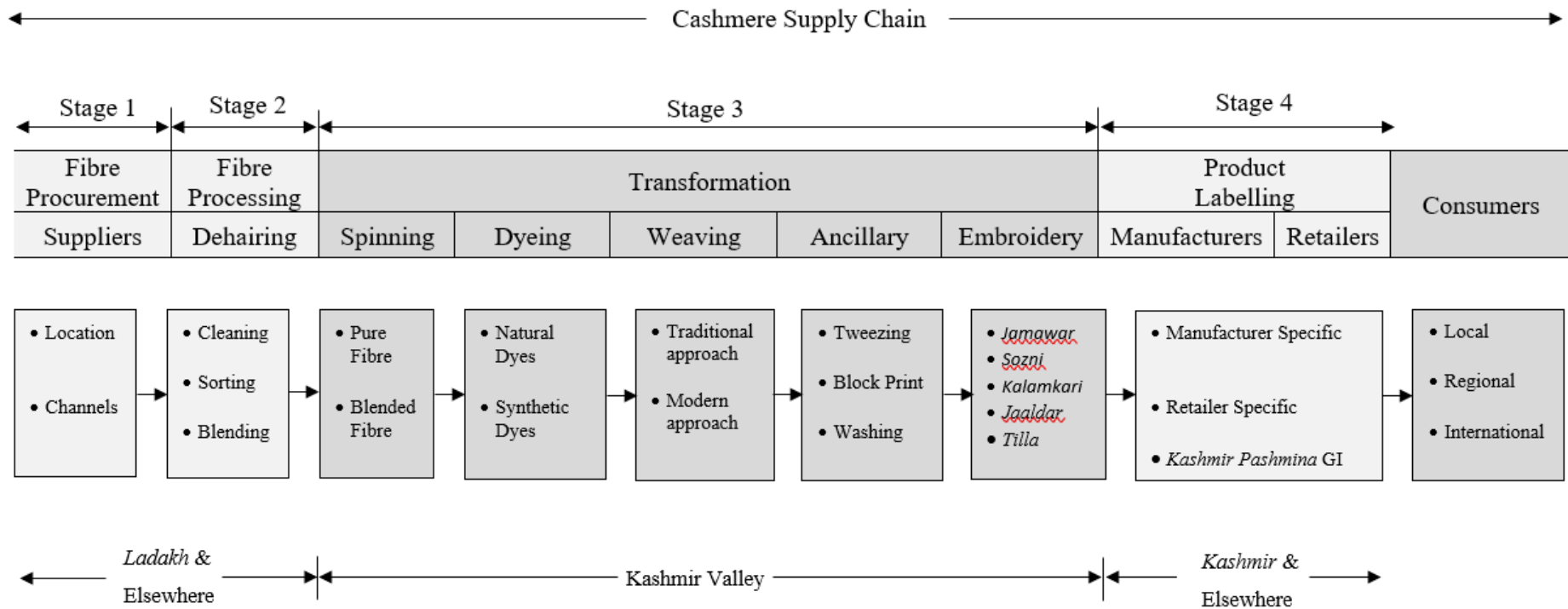


Figure 4.1 A cashmere value chain operating in India.

Source: Author

4.3 Stage 1: Procurement

In Stage one, location of the cashmere fibre procurement channels along with the complexities surrounding the procurement stage is covered.

4.3.1 Location

One of the finest qualities of raw cashmere fibre is produced in Kashmir, India (Figure 4.2) with an approximate annual production of 40 to 50 tonnes harvested from nearly 200,000 cashmere goats which are endemic to the northern parts of the country (Ganai *et al.*, 2011). In India, raw cashmere fibre is primarily collected from two cashmere goat breeds: *Changthangi* (Ammayappan *et al.*, 2011) and *Chegu* (Wani *et al.*, 2009): former is also known as *Changra* (Namgail *et al.*, 2010). Apart from these breeds, based on a range of market requirements, cashmere fibre is also procured from *Shapo* (*Ovis orientalis*) and Himalayan ibex (*Capra ibex*). Among these goat breeds, *Changthangi* (*Capra hircus laniger*) is inhabited to Ladakh and contributes more than three-quarters of the total cashmere harvested in India. Traditionally, cashmere fibre is primarily procured from the *Changthang* region in eastern Ladakh (Namgail *et al.*, 2010); a region adjacent to Jammu and Kashmir and in the vicinity of the Tibetan plateau. However, in rare instances cashmere is also procured from certain areas of Himachal Pradesh and Uttarakhand, the other two regions in north India (Wani *et al.*, 2009; Figure 4.2).



Figure 4.2 Map of India highlighting the Kashmir region.

The climate of the natural habitat of the cashmere goat in India, at altitudes up to 5000 m above sea level, is conducive in breeding the cashmere goat (Wani *et al.*, 2004). Specially, the climate of Ladakh region (Figure 4.3) is characterized by dry summers and harsh winters where the temperature ranges from +40 °C to – 40 °C (Shakyawar *et al.*, 2013).



Figure 4.3 Natural habitat of cashmere goat in Ladakh region.

The weather in Ladakh is extreme which leads to the loss of livestock and other essential requirements such as fodder and shelter. To prevent this, the nomads of the region (*Changpas*) move from place to place, depending on the season of the year, to explore suitable grazing grounds and shelter for the goats so as not to expose the livestock to extreme conditions for longer durations (Namgail *et al.*, 2010).

A classification of luxury hair fibres is presented in Appendix F (Lakshamanan *et al.*, 2016, p. 4). An important aspect in luxury hair fibres is the fibre fineness. To signify the importance of cashmere fibre among other luxury hair fibres, a comparison of different natural fibres with respect to their diameters (Lakshamanan *et al.*, 2016, p.2; Qian *et al.*, 2010; Kumar *et al.*, 2015) is presented in Figure 4.4.

The average fibre diameter of *Changthangi* breed is 9-14 microns (Figure 4.4). The fibre diameter is a measure of fibre fineness measured in microns (one micron is one millionth of a meter i.e., 10^{-6}). This is significantly less than the prescribed classification of 19 microns for the fibre to be considered as *pashmina* which makes *Changthangi* procured fibre as one of the finest raw cashmere (Wani *et al.*, 2009; Raja *et al.*, 2013; Shakyawar *et al.*, 2015).

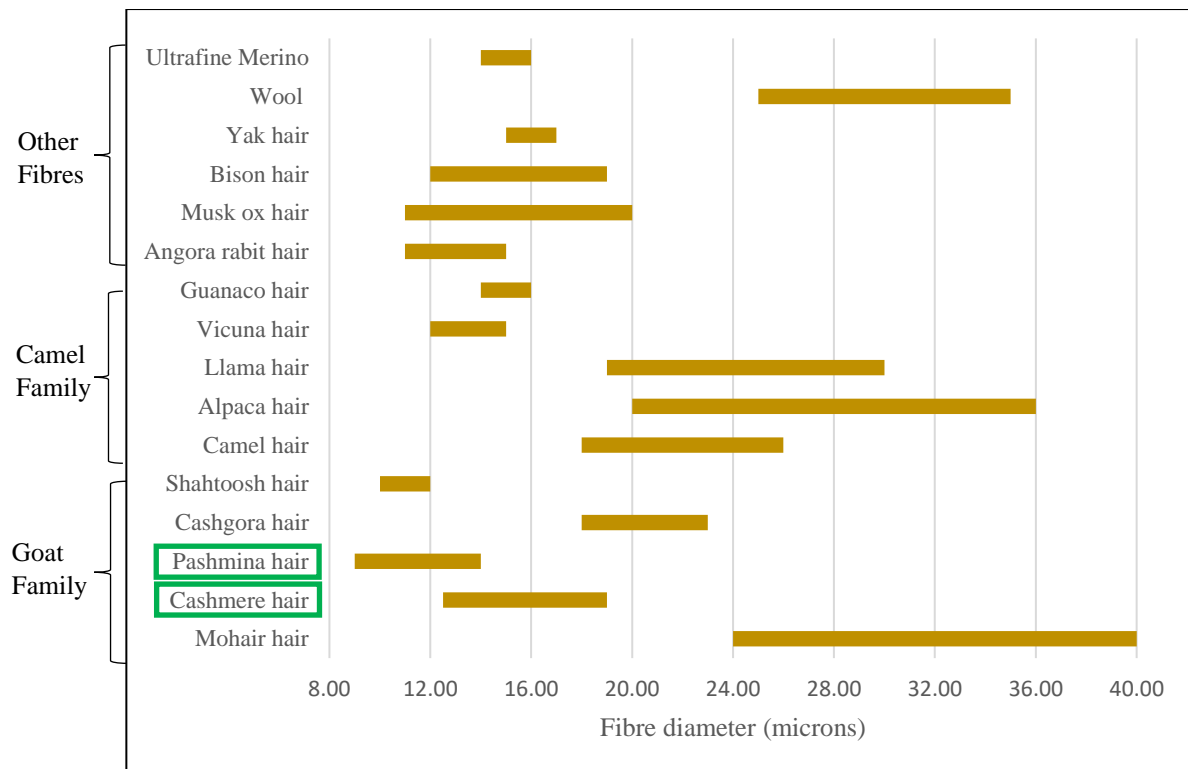


Figure 4.4 A comparison of the diameter range of different natural fibres

One of the finest quality of cashmere fibre is produced in Kashmir, India (Ganai *et al.*, 2011). Also, the fibre length of *Changthangi* fibre is between 55mm – 60 mm, making it one of the most sought-after fibre in the industry (Shakyawar *et al.*, 2013). Therefore, the fineness of *Changthangi* cashmere makes it an ideal fibre for producing exquisite cashmere products.

4.3.2 Cashmere Sourcing Channels

Cashmere goat herders provide the raw material to the local agents in the community who, in turn, supply the cashmere fibre to the traders. These traders are primarily based either in Ladakh (All Changthang Pashmina Growers Co-operative Marketing Society) or in Srinagar who supply the raw material to the Kashmir valley. Annual raw cashmere yield in Ladakh is around 40 tonnes (Greater Kashmir, p.11, Jan 12, 2015). The cashmere fibre production in Kashmir's Ladakh region is presented in Figure 4.5.

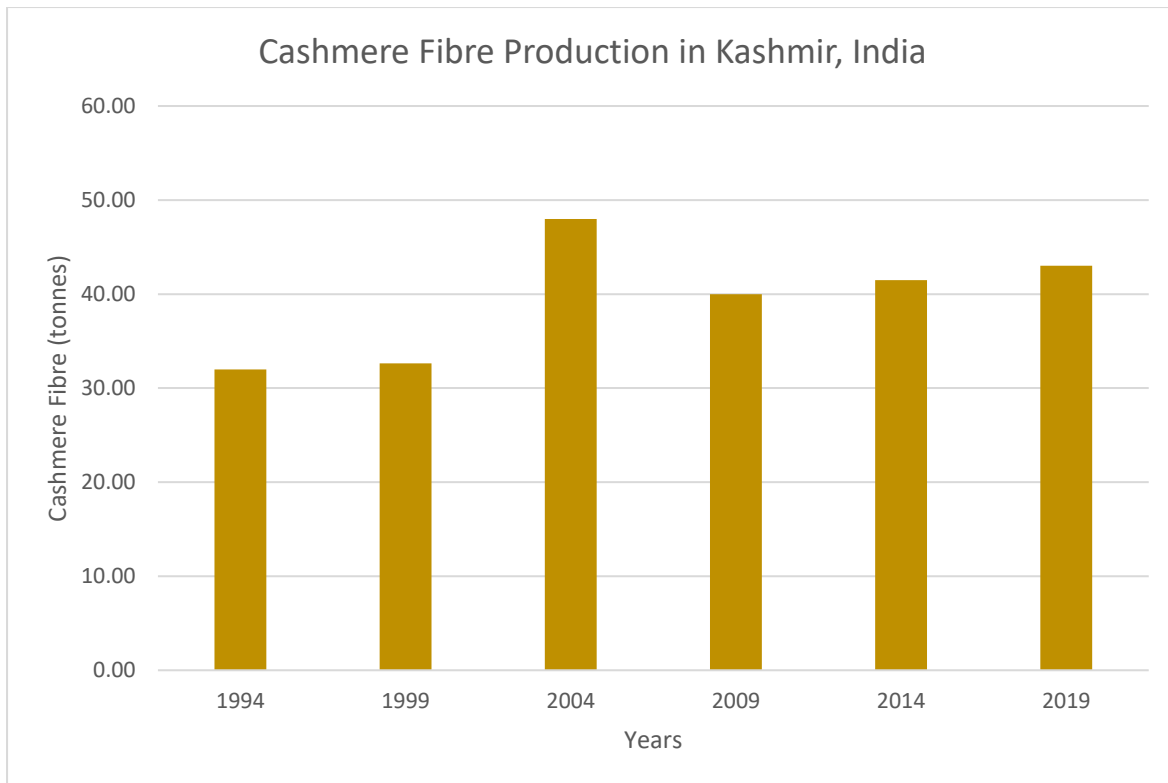


Figure 4.5 Cashmere fibre production in the Kashmir region

Apart from the traditional cashmere supply source from the villagers/traders from Ladakh, over the years many alternate cashmere sourcing channels have evolved involving intermediaries in the chain; eventually effecting the profit margins of the cashmere goat herders (Wani *et al.*, 2014). Furthermore, at times, through cross border barter trade, raw cashmere is exchanged with Tibetan and/or Chinese traders in lieu of apparel and electronic consumables leading to a shortage of already scarce natural resource (Ahmad, 2004). Through various private and government established channels (Figure 4.6), majority of the cashmere fibre reaches the Kashmir valley where skilled artisans through their sophisticated craftsmanship produce exquisite cashmere articles (Wani *et al.*, 2014).

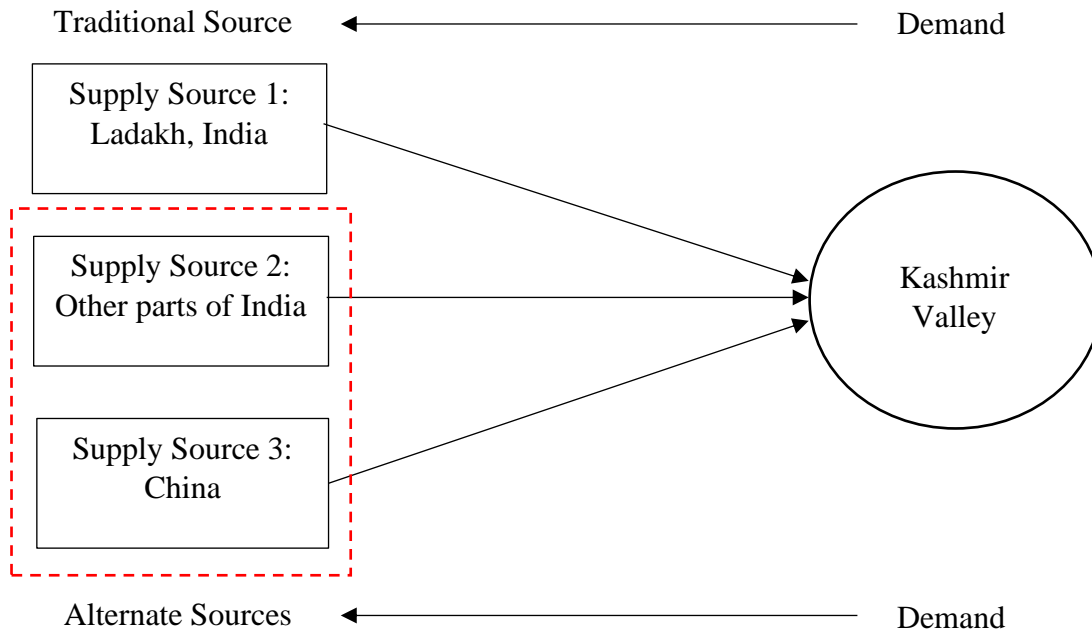


Figure 4.6 Cashmere fibre sourcing channels in India

As observed by the researcher, due to a multitude of reasons such as lack of standardised raw material testing facilities, unwillingness of buyers because of running the risk of losing the sub-standard raw material (in case the material fails the quality test), the consideration of determining the fibre quality at the procurement stage is almost non-existent. Fibre quality is essential for the quality of the product. Fibre quality issues upstream in the chain further affects the downstream cashmere operations (Ashraf *et al.*, 2016). Therefore, the current industry trend is to procure raw cashmere fibre from various supply sources and the lack of traceability measures on cashmere fibre imports, from places other than Ladakh, impacts the subsequent cashmere value chain operations.

4.4 Stage 2: Fibre Processing

4.4.1 Dehairing

The raw cashmere fibre is collected from the underbelly of cashmere goats when they naturally shed their undercoat during spring (Yaqoob *et al.*, 2012). On average, a cashmere goat produces nearly 200g - 250g of raw fibre every year, making it a scarce resource (Namgail *et al.*, 2010). The raw fibre consists of two components; the outer guard hair and the inner coat of fine fibre at a ratio of approximately 60:40. The harvested cashmere fibre is dehaired in which the fine cashmere fibre is separated from the outer coarse hair. The goat down (inner coat) is six times finer than human hair which makes it very fragile (Franck, 2001, p.142; Figure 4.7).



Figure 4.7 Raw cashmere fibre (*Phamb*) obtained after combing the cashmere goat

For quality products, the guard hair must completely be separated from the fine inner coat (Figure 4.7) before further processing. In case of more than 5% of guard hair in the fibre (Figure 4.8), the fibre quality is severely affected and degrades the quality of the final deliverable (Shakyawar *et al.*, 2013). In this thesis, for the Scanning Electron Microscope (SEM) images used from the secondary sources, written permission from the authors has been obtained.

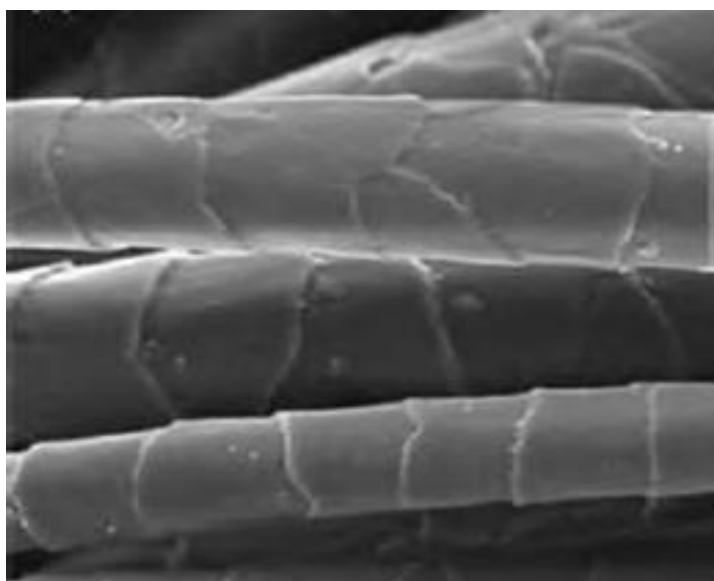


Figure 4.8 SEM (1500x) view of raw cashmere fibre

Traditionally, dehairing is carried out through a time consuming and labour-intensive manual process. In this process, there is no structural damage to the cashmere fibre and it assures a genuine and clean fibre which is evident from Scanning Electron Microscope (SEM) image in Figure 4.8 (Bumla *et al.*, 2012). Nowadays, dehairing is also subject to mechanical processes to speed up the complex dehairing task replacing the tedious manual effort and to fulfil the increasing demand.

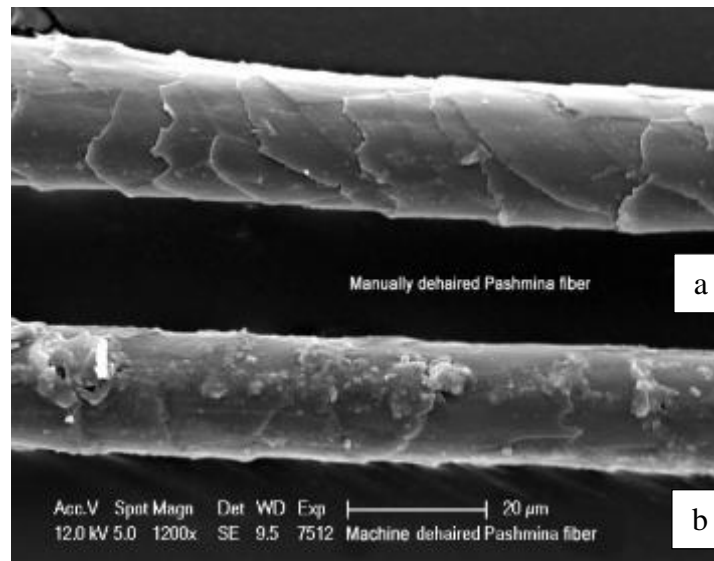


Figure 4.9 SEM (1200x) comparison of manually (a) and mechanically (b) dehaired cashmere fibres

As evident from Figure 4.9, the damaged surface of mechanically dehaired fibre (b) results in broken follicles of the cashmere fibre whereas the manually dehaired fibre (a) does not show any such damage in the fibre. The dehaired cashmere fibre obtained from the mechanised processes results in inferior fibre quality which impacts fibre strength and tenacity (Shakyawar *et al.*, 2013). It is observed that dehairing of cashmere fibre through mechanised processes in large quantities may fulfil the demand of various market segments but does not necessarily satisfy all quality parameters required for authentic handmade cashmere products.

4.4.2 Cleaning and Sorting

After procuring the raw cashmere fibre, it is cleaned from the impurities inherent to the harvested fibre. The harvested cashmere fibre contains dirt, sand, suint and skin flakes as

naturally occurring containments. These impurities are removed manually (Shakyawar *et al.*, 2013). For this, combing, which is a tedious process, is carried out by hand using a wooden comb. Later, impurities are plucked one by one manually from each harvested fibre and the fibre is untangled and distinguished with respect to characteristics such as fibre length and colour. The impact of weathering is also considered to ensure the quality of the procured fibre. Weathering of cashmere fibre is the result of cashmere goat grazing in natural pastures for long durations and it may lead to degradation of fibre softness and curvature which is significant in determining the fibre quality (McGregor, 2016).

4.4.3 Fibre Blending

Cashmere fibre is very delicate and cannot be processed on mechanized processes in its natural form (Shakyawar *et al.*, 2015). For this reason, cashmere fibre is spun on the machines after blending it with other natural and synthetic fibres to make it robust enough to sustain the stress of the mechanical process (Shakyawar *et al.*, 2015). It is important to know that the chemical composition of cashmere, wool and mohair fibres is identical (Lakshmanan *et al.*, 2016) making them natural candidates for blending. Also, cashmere and wool have similar morphological structures which makes them a suitable choice for blending. However, the strength of cashmere is approximately 10% less than that of finest wool whereas it is 40% less in strength compared to mohair (Lakshmanan *et al.*, 2016). According to Shakyawar *et al.*, (2013), up to 30% blending can be achieved without significantly compromising on the fibre quality. As a result, a blended cashmere-wool ratio can be obtained in different proportions such as 80:20, 70:30 and, at times, at 50:50 which reduces the costs up to 40% depending on the ratio used in the blended fibre (Shakyawar *et al.*, 2013).

Similarly, cashmere fibre is blended with synthetic fibres such as Nylon (Raja *et al.*, 2011). Once blending is complete, the blended yarn is treated with a chemical process to eliminate the external fibre component from the cashmere fibre. (Shakyawar *et al.*, 2015). However, in the chemical dissolution process, the fibre tends to lose its natural properties. It is important to know that the source of blending is unknown. As stated by a spinner, “During and post spinning, it is not possible to blend the fibre and by the time it reaches the spinners, the fibre is already blended and made-to-fit for further processing.”

There is an apprehension among the stakeholders of the cashmere industry that raw material being procured from a range of different sourcing channels is not pure cashmere. Unless tested scientifically, it is difficult to distinguish between genuine (pure) and blended cashmere fibre.

4.5 Stage 3: Transformation

In this section, transformation aspects of the yarn including spinning, dyeing, weaving, block printing, embroidery, tweezing and washing are presented.

4.5.1 Spinning

After fibre processing, the next step is to spin the fibre to manufacture yarn. Cashmere yarn is made from pure cashmere fibre and through a blend of other natural and synthetic fibres to suit the product requirements (Shakyawar *et al.*, 2013). Traditionally, cashmere yarn is spun by hand on a spinning wheel called ‘*Yinder*’ (Figure 4.10) or on its recently invented pedal-operated version (Wani *et al.*, 2013).



Figure 4.10 A Kashmiri woman spinning the cashmere yarn on a spinning wheel (*Yinder*)

In the last couple of decades, modern spinning approaches have evolved in which raw cashmere fibre is spun on mechanical processes. Similar to dehairing, mechanically spun fibres compromise on their natural characteristics since the mechanical stress cause severe damage on the cashmere portion of the blended fibre and reduce the strength of fabric below the acceptable limits (Bumla *et al.*, 2012; Figure 4.11b). Furthermore, according to Bumla *et al.* (2012), due to the use of hydrochloric acid during dissolution of nylon on cashmere fibre, machine spun made fabric show higher abrasion loss and higher chemical damage as compared to the cashmere fabric made of hand spun yarn. However, this spinning mechanism saves significant time and cost to the manufacturer.

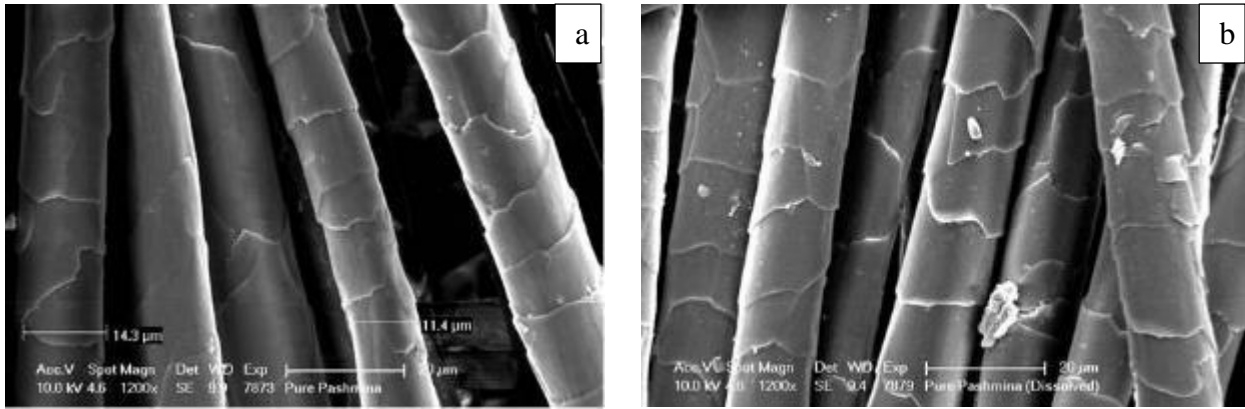


Figure 4.11 SEM (1200x) view of hand spun cashmere yarn (a) and SEM (1200x) view of machine spun yarn (b)

On the contrary, manual spinning is a time-consuming process and manually spun fibres show no structural damage on the fibre follicle (Figure 4.11a) and considered as the preferred yarn for use in further processes such as weaving and embroidery by the artisans. Due to the significance of manual spinning, the researcher observed the manual spinning process and recorded it as field notes and presented in Table 4.1.

Table 4.1 Manual Spinning Process (Field notes)

Step	Process
1	The first step in spinning is to have a handful of cleaned cashmere fibre known as <i>Phamb</i> (Figure 4.7) in one hand and place it over the needle attached to the spinning wheel called <i>Yinder</i> (Figure 4.10).
2	The spinning wheel is then rotated clockwise with the other hand converting the fibre into yarn which is collected over a needle. In this process, the yarn breaks frequently due to being fragile and, at times due to the inconsistent spinning speed of the spinner. The yarn is then joined with the fibre by simply churning it by hand. The process continues till the required amount of yarn is collected over a wooden object called <i>Meller</i> (Figure 4.12a).
3	Once the <i>Meller</i> is formed, then it is transferred back to the spinning wheel by rotating it anticlockwise. This process makes the yarn even and provides more strength to it. Once the yarn is transferred back, it is then placed on <i>Yeruntul</i> (Figure 4.12b).

4	The <i>Yerentul</i> is a small rectangular wooden plank with two vertical nails at a certain distance from each other. The yarn is placed between these nails in a particular fashion in a process called <i>Yerun</i> to form a figure-eight loop.
5	After every nine counts of <i>Yerun</i> , a knot (<i>Gund</i>) is tied on the loop. One such knot yields in the monetary value of INR 1 for the spinner. This process continues till the yarn is finished or till the number of desired knots are achieved.
6	Finally, a solution is prepared by boiling soap nuts (<i>Sapindus Mukorossi</i>) with water. When the solution cools down, six to seven knots are dipped and washed in the frothy solution. Through this, a fine layer of the solution is placed on the cashmere yarn which is sun dried to provide sufficient strength to the yarn to sustain the pressure for the subsequent warp process.
7	In warping, cashmere yarn is manually winded across the iron rods placed in an outdoor area.

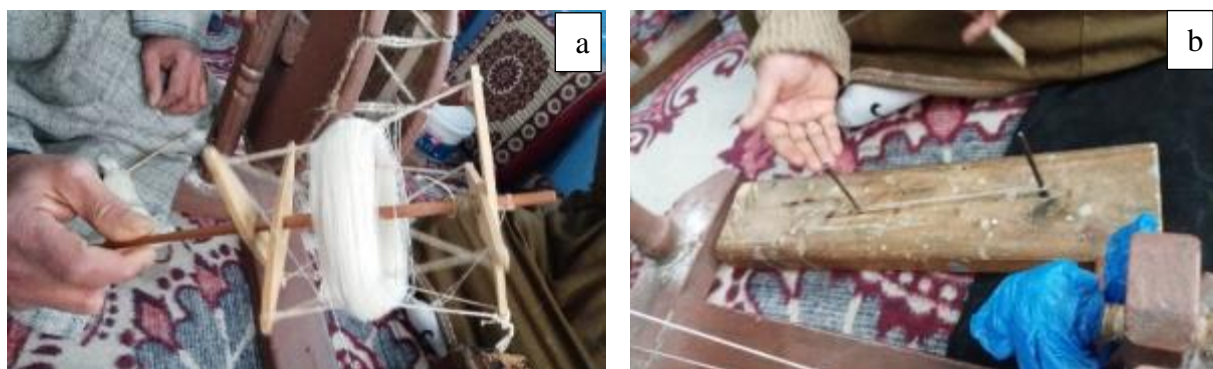


Figure 4.12 Yarn collected over the Meller (a) and transferring of the yarn to *Yerentul* (b)

After the completion of spinning, the yarn is ready for dyeing depending on the requirements of the manufacturer. Primarily dyeing is carried out for yarns and in some cases for shawls.

4.5.2 Dyeing

The dyeing process is carried out manually using organic compounds to add different colours to the product. For instance, saffron-based dyes, made from saffron (*Crocus sativus linn*) flower, are used as natural colour to dye cashmere articles (Raja *et al.*, 2012). Similarly, walnut (*Juglans nigra*) husk is used in dyeing cashmere shawls and similar articles (Lal *et al.*, 2011). Another natural dye extract is used which is obtained from a small spreading tree (*Kigelia*

pinnata) to dye cashmere fabrics (Sharma *et al.*, 2013). As mentioned by the dyer, the cost of natural dyes is comparatively high and their usage without proper measures can vary in colour consistency and eventually compromise on the product quality. The dyeing process was recorded in the field notes by the researcher and presented in Table 4.2.



Figure 4.13 The dyer is looking into a shade card for a shade to dye (a), boiling the dye in a container (b), dyed yarn is being manually taken off from a boiling pot (c)

Table 4.2 Dyeing Process (Field notes)

Step	Process
1	The dyer compares the required shade of the colour with the code available in the standard shade card (Figure 4.13 a).
2	After mixing the required colours for the required dye, the dyer adds the colour in the boiling water (Figure 4.13 b) and pulls out the yarn from the container with bare hands till the colour is fast (Figure 4.13 c). For dyeing the yarn or a shawl the entire process is carried out by bare hands and no protective gear is used since cashmere yarn is very fragile and breaks frequently. This process takes about 10 minutes.
3	The yarn placed in a tub full of running water for cleaning to ensure that the dye is fast and would not release its traces during or after washing the article. In case the colour is not fast, the dyer conducts the dyeing process again.

4	Post washing, the article is rinsed, squeezed and placed on the clothing lines to dry. This activity runs almost evenly throughout the year. During winters, due to overcast weather, it is relatively difficult to dry the processed article due to insufficient sunlight which is the preferred source to dry the dyed article.
5	After the entire process is finished, the dyer washes their hands with a mixture of 'bleach' and 'baking soda' to get rid of the chemicals the dyers were exposed to during the dyeing process.

4.5.3 Weaving

In the cashmere value chain, among all operation, weaving is one of the most significant and complex process (Ashraf *et al.*, 2016). Depending on the complexity of the product design, it may take between a few days up to many months to accomplish a weaving task. The handloom woven products made by skilled artisans generate a unique value to the product (Shakyawar *et al.*, 2013). During weaving, one of the most challenging and probably the frustrating task for the weaver is to make sure that no sooner does the thread breaks on the handloom (which happens frequently), the weaver picks it up and mends it immediately to continue with the weaving process smoothly. In this process, one-tenth of waste is considered within the acceptable range (Yaqoob *et al.*, 2012).

In the present-day traditional cashmere industry in India, there are two weaving approaches prevalent among the weaving community i.e, the traditional handloom (THL) and the advanced handloom (AHL). On these looms, different types of products are made to cater to the domestic and overseas luxury markets. During the field trip, the researcher observed the complete weaving process adopted by the weavers. This was a rare opportunity to have observed the intricate and sophisticated processes involved before the handloom is prepared for weaving. This is an extensive exercise and takes at least a day to complete. After this, the yarn obtained from the spinners can be used for weaving on the handlooms. A complete set of steps required for preparing the yarn to be processed on the handloom are presented in Figures 4.14 (a) to (c) and Figures 4.15 (a) to (d).



Figure 4.14 A *Kross* containing yarn rolls (a), a wooden wheel for transferring the yarn rolls from the *Kross* (b), yarn transferred from the *Kross* onto the wooden wheel (c)



Figure 4.15 Yarn is being lifted from the wheel (a), yarn is being transferred on to a cylindrical log (b), yarn is being shifted from the cylindrical log (c), yarn is being arranged in a specific pattern for weaving on a handloom (d)

Due to the significance of weaving, it is important to elaborate the pre-weaving steps involved in the weaving process. These steps were recorded as the field notes and presented in Table 4.3.

Table 4.3 Preparing the yarn for weaving (Field notes)

Step	Process
1	The initial pre-weaving processing step is to place the yarn rolls (<i>Gota</i>) obtained from the spinners on the <i>Krass</i> : a wooden mesh structured frame (Figure 4.14 a). Upto 100 rolls of cashmere yarn can be placed in columns on the <i>Krass</i> depending on the product requirements. One yarn roll contains approximately 10-12 grams of cashmere yarn. To manufacture 10 stoles, approximately 600 grams of cashmere yarn is required and for a shawl it can vary depending on the product type.
2	The <i>Krass</i> is divided into two halves: upper and lower. These halves are separated by an empty row between them to make a distinction between the threads required at the weaving stage. Once the required number of yarn rolls, which are split equally in number on the upper and lower half of the <i>Krass</i> are placed on the frame, the yarn is transferred from the yarn rolls on to a huge wooden wheel (Figure 4.14 b) by pulling the yarn from each roll, one at a time, and by passing it through a grid (<i>Pinjra</i>).
3	The yarn from the rolls of the lower half of the <i>Krass</i> are placed at the lower section of the grid. Whereas, the yarn from the rolls of the upper half of the <i>Krass</i> are placed at the upper section of the grid. This process is carried out column wise and continues until the yarn from all columns of the <i>Krass</i> pass through to the grid sequentially.
4	After this, six threads pass through a comb; three each from lower and upper sections of the grid. When this process is complete, all the threads are knotted (<i>Gand</i>) together and attached to a nail placed on a 90-inch-wide wheel rotated manually (Figure 4.14 b).
5	Prior to the first revolution of the wheel, a mark using charcoal is placed on the sides of the wheel to keep track of the width and the length to be produced for weaving. During this process, at times, the yarn breaks and is fixed by the artisan. At this stage, the upper bounds are also established on the wheel to ensure that product length remains within the permissible limits of the products to be produced.
6	Once the required length is obtained on the wheel (Figure 4.14 c), threads are lifted from the wheel (Figure 4.15 a) in small groups (<i>Kheshn</i>) and are knotted on a wooden stick (<i>Har</i>) which is attached to a cylindrical log. As the wheel is rotated, it unwinds the threads and finally transfers them onto a cylindrical log (Figure 4.15 b). For shawls, upto 3000 warp threads can be obtained through this sophisticated and structured approach which requires significant amount of expertise and patience.

7	The final pre-weaving processing stage to shift the yarn wrapped up in the cylindrical wooden log to a delicate, time-consuming and an intricate mechanism (Figure 4.15 c). As shown in Figure 4.15 (d), threads are lifted from the log based on the product design requirements such as plain, diamond shaped (<i>Chashm-e-bulbul</i>) or any other desired design. Finally, it is placed through a dense set of threads (<i>Saaz</i>) using special needles (<i>Tsar</i>) in a pattern.
---	--

After the pre-processing of the yarn is complete, the weaving process starts on the handloom. On these handlooms, numerous intricate designs of cashmere products, especially shawls can be produced. For instance, a sophisticated blend of cashmere and *zari* threads can be used to manufacture an exquisite and trendy shawl known as the “double-shade” by modifying the pedals of the loom which play critical role in establishing the design of the shawl. The more the number of pedals used in the loom, the higher the level of intricacy and sophistication of the process becomes. In Figure 4.16 (a), a weaver is shown using as many as 10 pedals for a double-shade shawl (Figure 4.16 b) on the handloom.



Figure 4.16 Foot pedals in a handloom (a), a weaver working on an advanced handloom (b)

During the spinning process, similar to signatures, women spinners have distinct spinning style resulting in various thickness and twists in the spun yarn. For a genuine hand-made cashmere shawl, approximately 20 women spinners are required to spin the yarn. A shuttle (*muk*) contains

the yarn spun by a specific spinner. To achieve consistency in the woven fabric, preferably more than one *muk* is used in the weaving process so that the difference in yarns (spun by distinct spinners) is not evident after the weaving is complete.



Figure 4.17 A weaver working on a traditional handloom showing the Muk (a), a closer look of the Muk (b)

Due to the significance of weaving, it is important to elaborate the steps involved in the weaving process. These steps were recorded as the field notes and presented in Table 4.4.

Table 4.4 Weaving Process (Field notes)

Step	Process
1	In weaving, a shuttle (<i>muk</i>) containing cashmere yarn is slid across the loom to weave the width of the product. The shuttle (Figure 4.17 a) is a wooden stick used in the handlooms where the middle section of the shuttle is bisected and holds the cashmere yarn wrapped up in a needle (<i>tsur</i>) (Figure 4.17 b).
2	The bottom portion of the handloom consists of pedals. The pedals are pushed in a pattern in conjunction with the pull of the strings based on the design requirements of the product.
3	During this process the looms need to be operated with utmost precision through a concerted effort of hand and foot movement. The hand-foot coordination further gets complex when various colours specific to the design or pattern of the product are involved. This makes weaving a sophisticated and time-consuming process.

As observed by the researcher, the traditional handloom (THL) weavers work under the same conditions as their advanced handloom (AHL) counterparts except that their work is more

tedious and labour intensive. In comparison to the advanced loom, the traditional handloom is more challenging to operate and requires more time and effort due to its traditional weaving style. Apart from the two weaving techniques discussed, there is another weaving approach known as the *Kani* weaving. *Kani* weaving is one of the most labour intensive, sophisticated and attention-to-detail oriented practice in the traditional cashmere industry. *Kani* weaving requires significantly more time and effort as compared to other weaving approaches (THL and AHL). To master this craft, it requires at least four to five years of full-time apprenticeship for the artisan under expert guidance to learn the nuances of *Kani* weaving.

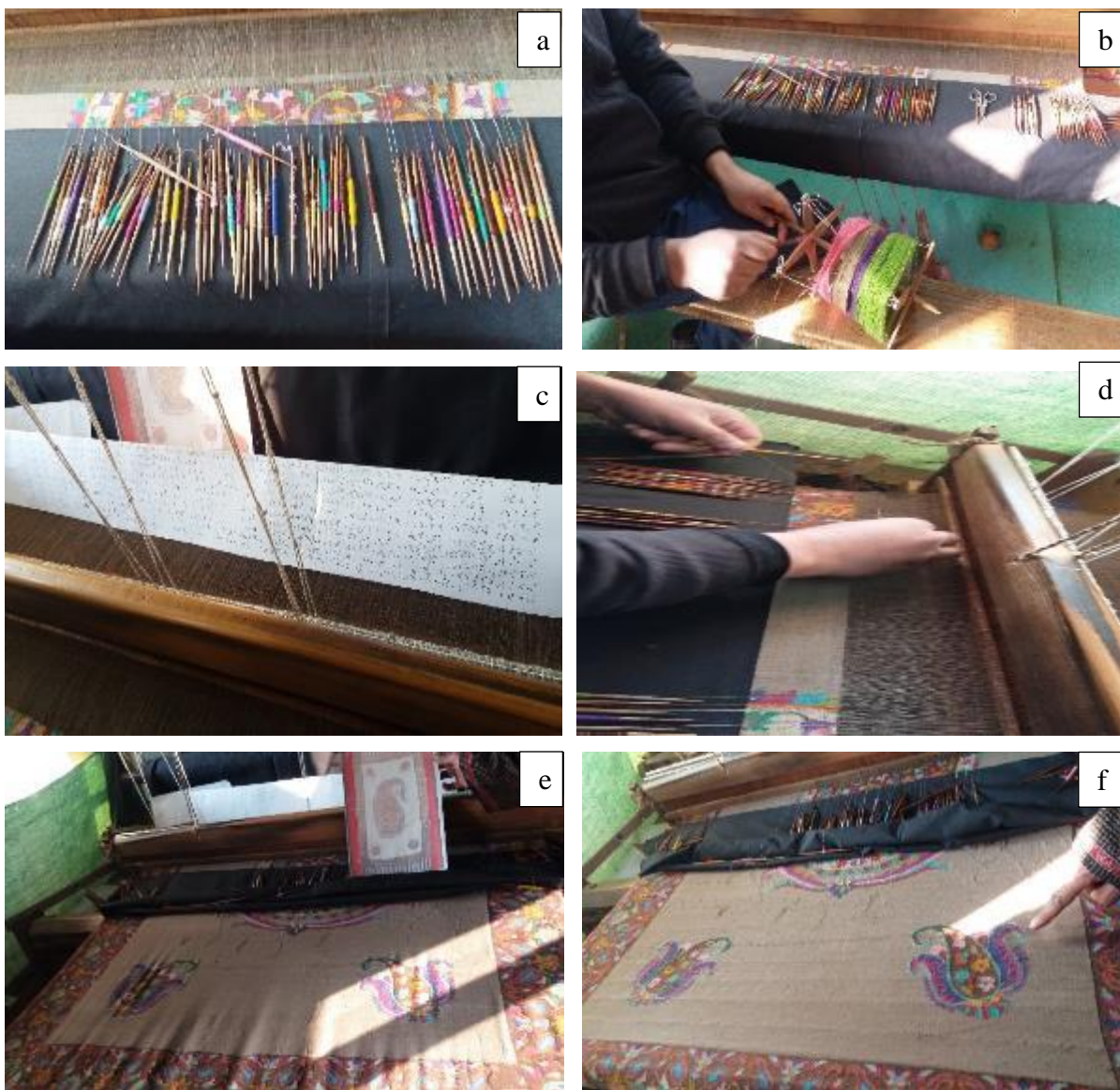


Figure 4.18 Kani sticks (a), yarn for Kani weaving (b), codes (Taleem) for Kani weaving (c), Kani weaving handloom (d), design for Kani weaving (e), Kani shawl in the making (f)

The *Kani* weaver provided a deep insight of the weaving process to the researcher (Figures 4.18a and 4.18 f). As observed, the *Kani* weaving process was recorded as the field notes and presented in Table 4.5.

This special weaving technique using wooden sticks. In *Kani* weaving style, very fine and pointed wooden sticks wrapped up in different colours to weave the shawl (Figure 4.18 a) are used. Also, similar to other weaving practices, foot pedals are used to switch between different yarn types to create complex *Kani* designs. To achieve consistency in the final product, a single *Kani* artisan is required to complete the entire *Kani* shawl from the scratch to the finish. In general, this consideration is desired in any hand-made process, however this is imminent for *Kani* shawl making since no two artisans may have identical hand-strokes to weave this exquisite shawl which is unique to each artisan and vary depending on their experience.

Table 4.5 *Kani* Weaving (Field notes)

Step	Process
1	Yarns of various colours are collected over a hollow cylindrical object (Figure 4.18 b) through which <i>Kani</i> sticks are provided with the desired quantity of the coloured yarn.
2	Codes (<i>Taleem</i>) are used to draw patterns on the <i>Kani</i> shawl (Figure 4.18 c). These codes represent the colour of the thread based on the design requirements. The codes are split in different chapters (<i>Kakud</i>) each representing a specific task or the area of the shawl to be covered by the chapter. In a <i>Kani</i> shawl, as many as 150 chapters of codes are required to complete it over a period of six months to one year working 10-12 hours a day.
3	Based on a series of codes (<i>Taleem</i>) to achieve the desired pattern (Figure 4.18 e), <i>Kani</i> sticks horizontally pass through an extensive grid of threads on the handloom (Figure 4.18d). This completes one cycle of the <i>Kani</i> weaving process.
4	After each cycle, the design is matched with the codes and the process continues till the shawl is complete (Figure 4.18 f).

In the next step, except for *Kani* weaving, the shawls made from the THL and AHL need imprints for embroidery using block printing. This step is not required for the plain cashmere products.

4.5.4 Block Printing

Block printing is the least time consuming and simple process as compared to other processes in the cashmere chain operations. Also, it is one of the most rewarding process (monetarily) since most of the shawls and stoles undergoes embroidery making, so block printing is imminent for such articles. In this process, as required, prints (embossed on the wooden blocks) are stamped on woven articles by the block printer (*Naqash*). Mostly, the manufacturer requires a specific imprint on the shawl. However, in few instances the prerogative of selecting the design rests with the *Naqash* based on the prevailing market/fashion trends. During stamping the block (Figure 4.19 a) on the cloth, the *Naqash* places the dye on their bare hand and puts it on the block after each time the design impression (Figure 4.19 b) is stamped on the fabric. For all imprints, two types of inks are used in this process: black (Figure 4.19 c) on light coloured fabrics and white (Figure 4.19 d) on dark fabrics. The impression of the ink on the cloth lasts up to one year unless the article is washed. The entire block printing process takes between 10 minutes (*Hashi Shawl*) to 30 minutes (*Jamawar shawl*) depending on the design complexity.



Figure 4.19 A printing block (a), various block print designs (b), black ink-based block print (c), white ink-based block print (d)

Based on the imprint, the embroider carries out embroidery on the shawls using multiple colours of threads.

4.5.5 Embroidery

Weaving lays the foundation for another very critical and most labour-intensive process in the cashmere shawl making i.e., embroidery. There are different colours (Figure 4.20 b) and embroidery styles (Figure 4.20 c and Figure 4.20 d) used based on the design of the print and the skill set of the embroider. Embroidery is a very sophisticated, complex and lengthy task which can take up to a year working on a single article (Figure 4.20 a). Therefore, generally, the designs are allocated based on the artisan availability, experience and the commitment they show to complete the article given to them.



Figure 4.20 A partially embroidered shawl (a), threads used for embroidery (b), plain embroidery (c), fancy embroidery (d)

During embroidery, it is preferred not to have more than one artisan to work on an article due to different approaches the embroider may have during the process. Unlike other processes, the manufacturer lets the embroider choose their own style and colour combinations. With more than one embroiders working on an article, the distinction in styles may be become evident in

the final product and will devalue its value. Furthermore, the worker experience also plays a critical role in ensuring the consistency and aesthetics of the product.

4.5.6 Tweezing

To achieve smoothness in the woven fabric, the article is tweezed by tweezer (*Purzgar*) who clips and brushes (Figure 4.21a and Figure 4.21b) out any inconsistencies that occurs due to weaving the fabric on the handloom. This step is helpful in ensuring a good finish of the woven article and also provides a comfortable feel to the person on its use.



Figure 4.21 A tweezer working on a shawl

4.5.7 Washing

Finally, the fabric is washed by the washerman (*dhob*) with running tap water in an indoor washing facility (Figure 4.22 a) or on the banks of a water body. As observed, the washing area was an open space where the article was washed manually over a cemented platform (with a detergent) using the water stored in huge drums (Figure 4.22 b). Washing of cashmere articles is necessary for the finish and to ensure that the colours used in different processes such as dyeing, weaving, embroidery are fast.



Figure 4.22 A washerman striking the fabric on a cement platform (a), a shawl being washed by a washerman (b), rolling iron press to dry the fabric (c), fabric being sun dried (d)

Once the washing process is over, the article is closely checked for any remaining stains by more than one person. In case a stain is found, it is eliminated manually again. After washing, the article is ironed on huge rolling machines (Figure 4.22 c) within the washing facility or sun dried (Figure 4.22 d) depending on the weather conditions. It takes a couple of hours for the pressing machine to iron the cloth on extremely low heat.

4.6 Stage 4: Labelling

In this section, product labelling aspects highlighting the prevalent industry standards are presented.

4.6.1 Standards

In the fashion industry, cashmere is a well-known product and luxury brands include cashmere products in their product lines to cater to the requirements of their clientele. In cashmere supply chains, specialty retailers (specific product sellers) and mass merchant retailers (multi product sellers) play a significant role in establishing the value of the product to the consumer.

Appropriate labelling is one of the critical aspects in the fashion industry in establishing the value for the consumer. However, in many instances, unscrupulous manufacturers and/or retailers do not conform to the standards prescribed by industry regulators such as the Cashmere & Camel Hair Manufacturers Institute (CCMI) – an international organization representing cashmere and other natural fibres. Appropriate labelling on cashmere products is a significant issue in the industry, and there are few standards available such as ISO 1005-A02 and BS 1006-B02 to streamline some aspects of cashmere processes globally (Raja & Thilagavathi, 2008). According to industry requirements, cashmere products must contain the accurate label including the article’s country of origin, fibre content and the name of the manufacturer for reliable identification and description of the product (Shakyawar *et al.*, 2013). However, in practice many products which are made from blended fibre(s) claim to be manufactured by genuine cashmere fibre are available in the market (Shakyawar *et al.*, 2015). The traditional cashmere industry lacks standards in its operations. However, through Geographical Indication (GI), an attempt is made to conform to establish standards for quality assurance. To streamline cashmere product quality, a testing mechanism has been devised by the Crafts and Development Institute (CDI), Srinagar to ensure the authenticity of the product through their website (Figure 4.23).



Figure 4.23 Website to track and trace the label authenticity

In the GI based cashmere chains, for traceability, consumers are provided with an online tool to trace the product origin. For this, consumers log into <http://www.kashmirpashmina.secure-ga.com/> (Figure 4.23) and through the 'Track-and-Trace' mechanism enter a unique eight-digit alpha numeric identifier (Figure 4.24) provided on the GI label to find the credentials of the manufacturer. Two cashmere labels ('Kashmir Pashmina' and 'Kani Shawl') are registered and entitled to get the GI label (Ghosh, 2016; Mir & Darzi, 2017). Through GI, significant protection to the traditional cashmere practices is provided (Gopalan & Sivakumar, 2007). With the GI label, uniqueness, traditions and skills associated with cashmere products that are specific to Kashmir, India is recognized.



Figure 4.24 'Kashmir Pashmina' GI labels

The Pashmina Testing and Quality Certification (PTQC) centre is located inside the CDI premises is well-established with the state-of-the-art equipment required for testing and labelling cashmere products. Highly skilled and qualified workforce conforms to the quality standards established for different products. Post satisfying the criteria, GI label (Figure 4.24) is placed over a range of products including gents shawl, ladies shawl, muffler, stole and scarf. For 'Kashmir Pashmina' GI labels, the Secure Fusion Authentication Labels (SFAL) are used for labelling the products. Each label has a covert (readable by using an Ultraviolet instrument) and overt (visible by a naked eye) information such as a unique number that is used to record the particulars of the entity to whom it has been issued to. The SFAL label is circular (2.5 centimetre in diameter) or oval in shape with serrated edges. As per the specifications, the label can be flat ironed from the reverse side only, upto a maximum temperature of 60 degrees centigrade. The SFAL label is not resistant to dyeing and cannot be ironed.

4.7 Cashmere Value Chains

4.7.1 Traditional Value Chain

The traditional cashmere value chain comprises of different stages such as; raw cashmere fiber procurement, fiber processing (dehairing, cleaning), transformation (spinning, dyeing, weaving, washing, embroidery), and product labelling to generate value towards the final deliverable to the consumer (Ishrat *et al.*, 2020). In the traditional cashmere processing, all processes are carried out manually. The traditional cashmere value chains in India are unorganized and expensive in time (long process durations) and productivity (low outputs) as they are heavily dependent on manual operations. These chains operate under a hierarchical structure which is primarily controlled by the manufacturer and/or retailer who select the artisans based on their requirements therefore the degree of coordination among artisan categories in different stages of operations is low. The traditional cashmere supply chains operate under poor industry infrastructure which lacks adequate information sharing and logistics support from the powerful chain stakeholders. The market reach of the traditional chains is limited to a niche consumer base because of relatively expensive products produced from the chain operations.

4.7.2 Modern Value Chain

In comparison to the traditional cashmere value chains, the modern cashmere value chains follow the same processes, however with a relatively new mechanism to reach to a wider consumer base by providing less expensive and wide range of affordable products. This is primarily attributed to the introduction of mechanized processes in the cashmere industry. The advent of mechanization in various cashmere value chain processes (dehairing, spinning and weaving) resulted in the modern chain operations which are cost effective, less time consuming and help increase productivity. Similar to traditional chains, modern chains function through a hierarchical structure dominated by the manufacturer and/or retailer. However, the level of information flow and coordination among the stakeholders is high due to expenditure made on the infrastructure by the concerned chain actors.

4.7.3 Geographical Indication (GI) Value Chain

The third cashmere supply chain is based on the Geographical Indication based requirements i.e., the raw material must be procured from *Changthangi* goat in Ladakh, yarn must be hand spun and traditional weaving style must be used in the product. The other processes are carried out as required for the product. However, this value chain is severely limited in function due to the dominance of the modern chain practices as presented in chapters five and six. A comparison of the operations carried out in these chains is presented in Table 4.6.

Table 4.6 Comparison of cashmere supply chain practices

Supply chain			Practice		
Stage	Activity	Sub-activity	Traditional	Modern	GI Based
Fibre Procurement	Collection	Combing	Manual	Mechanised	Manual
	Cleaning	Dirt, Sand	Manual	Mechanised	-
Fibre Processing	Sorting	Colour	Manual	Manual	-
		Length	Manual	Manual	-
	Blending	Natural	-	Mechanised	-
		Synthetic	-	Mechanised	-
	Transformation	Spinning	Natural	Manual	Manual
Blended			-	Mechanised	-
Dyeing		-	Manual	Manual	-
	Weaving	-	Manual	Mechanised	Manual
Product Labelling	Testing	Shawl	Manual	Mechanised	Mechanised
		Stole			
		Scarf			

A representation of all cashmere value chains i.e., traditional (green arrows), modern (blue arrows) and Geographical Indication based (red arrows) value chain is captured in Figure 4.25.

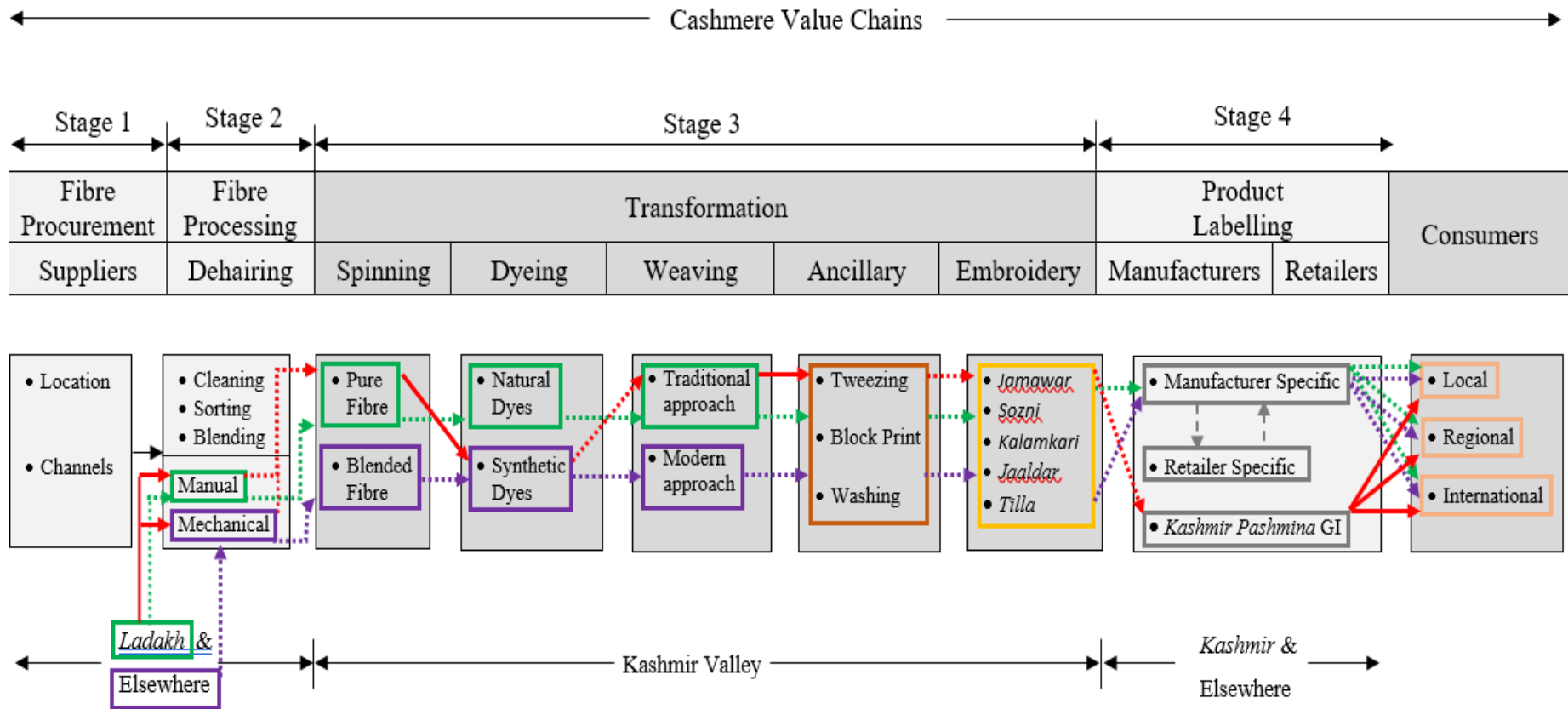


Figure 4.25 Multiple cashmere value chains in action.

Source: Author

- Traditional Chain →
- GI Based Chain →
- Modern Chain →

For the second objective i.e., to understand the existing state of labelling (Section 4.6) and develop a labelling distinction mechanism in the cashmere industry, data were collected to distinguish between various cashmere product and labelling categories. To gain understanding of cashmere products available in the market, a comprehensive market survey was conducted on cashmere retailers' websites (Figure 4.27). These retailers were explicitly dealing with a range of different products made from the cashmere fibre (pure and blended). Among the blended cashmere products, the composition of fibre blend was found to be up to 95%. Results indicate that the most sought after cashmere products were shawl (32.10%), scarf (15.16%), stole (13.12%) and sweater (12.53%). This signifies the importance of shawls in the global cashmere industry (Figure 4.26).

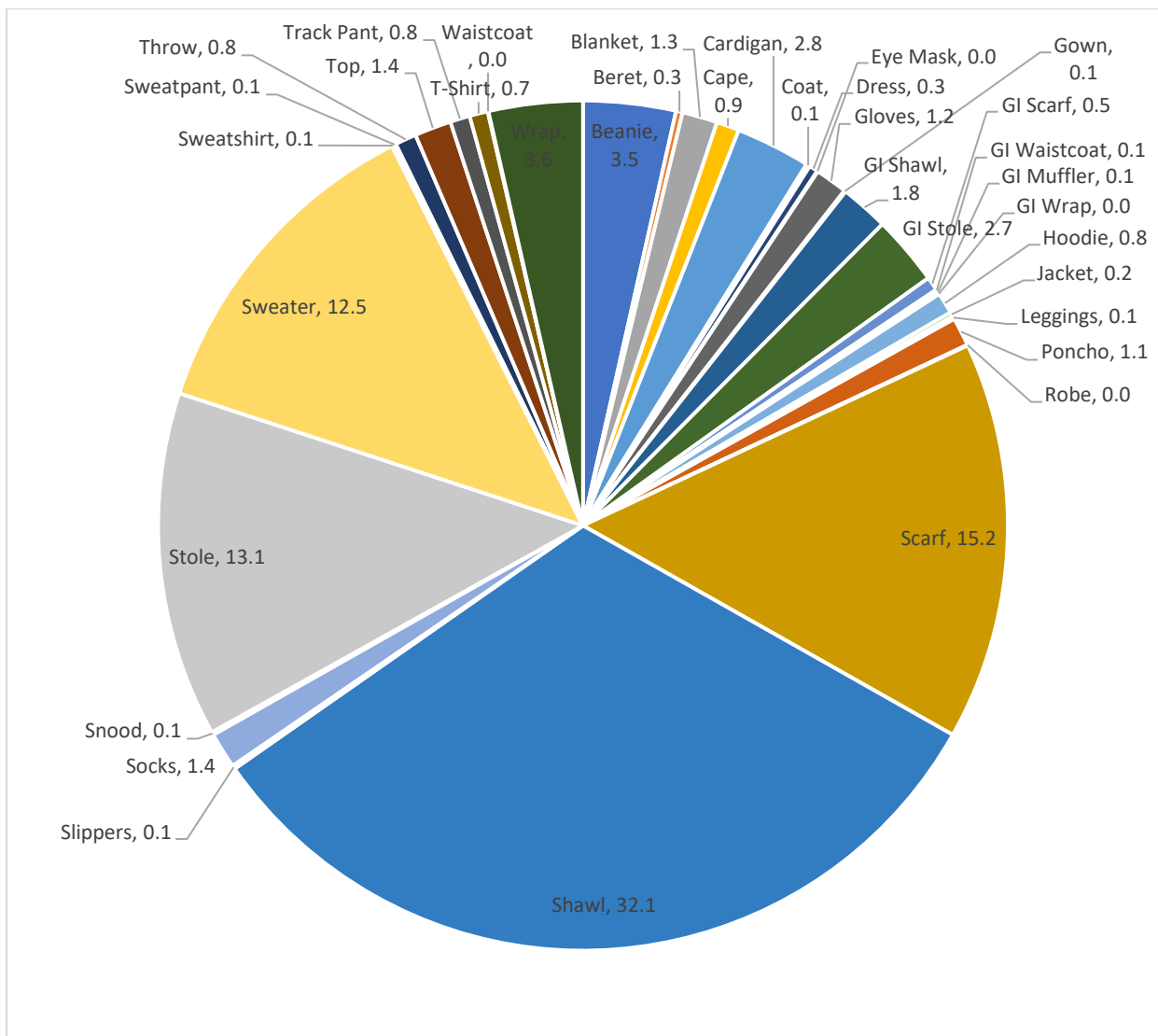


Figure 4.26 Distribution of cashmere products based on the market survey

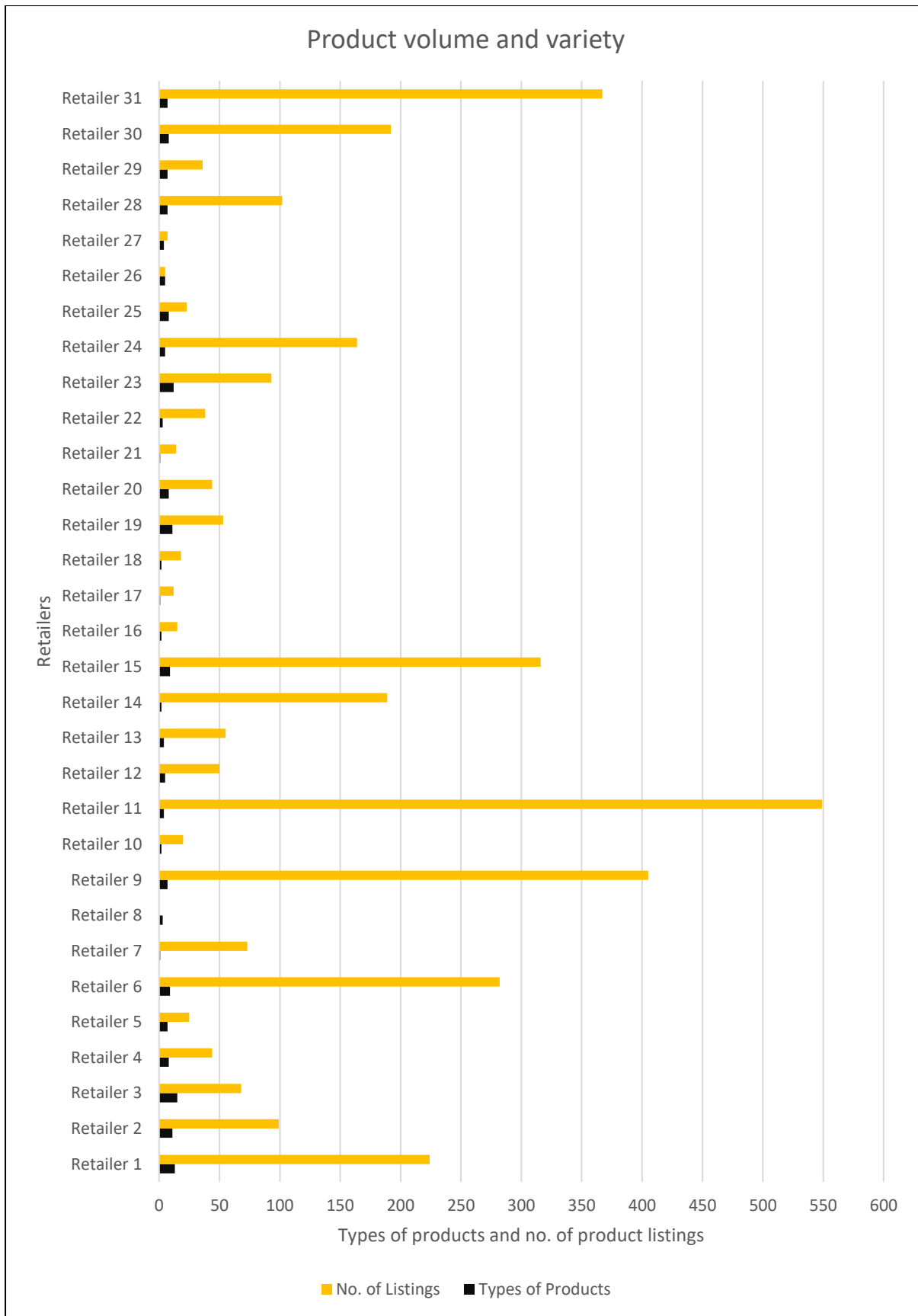


Figure 4.27 Cashmere retailers with different types of products and number of product listings

To gain more information about the cashmere products being sold online by these retailers, it was important to know four aspects of the products i.e, country of cashmere fibre (or yarn) origin, country of manufacture, whether the product(s) is handmade and the labelling information. Among 31 retailers, six retailers have provided information about these aspects on their websites. To gain comprehensive insights on these aspects, the researcher contacted the remaining 25 retailers (who do not have such information) by email. Five responses were received from the retailers. Based on the information available from 11 retailers, it was found that the cashmere fibre (yarn) is sourced from China, India (Kashmir), Mongolia, Nepal and New Zealand to manufacture a range of products in Afghanistan, China, England, India (Kashmir), Scotland, Mongolia, Nepal and New Zealand. Among 31 retailers, five retailers have provided information about quality certification/labelling aspects used in the products. As observed from the data findings of the cashmere retail websites (Figure 4.27), there is a significant focus on the products catering to women. All thirty-one retailers selected in the study, in all 36 product categories, have products relating to women consumers. On the contrary, only 17 cashmere retailers in 19 different types of products focus on men as the primary consumer (Table 4.7).

Table 4.7 Gender specific distribution of cashmere products

Cashmere	Men	Woman
No. of retailers selling the product	17	31
Types of Products	19	36

This indicates the market picture regarding the cashmere industry which is skewed towards women-oriented products.

From the findings presented in Table 4.8 and Figure 4.28, it is observed that there is a considerable price difference in certain cashmere product categories. For instance, shawls which constitutes of almost one third of all the products has a price range of more than \$7500. Similarly, GI shawls which comprise about 2 percent of the samples differs more than \$7000 in price. The significant difference in the price range for these products can be attributed to the fact that there is a vast range of such articles which are made from a variety of manufacturing practices across different parts of the world.

Table 4.8 A summary of the cashmere product categories and pricing based on a sample of 31 retailers and 3582 products. All prices are in New Zealand dollars (NZD)

S.No.	Product	No. of Retailers	No. of Listings	% of Products	Max Price (NZD)	Min Price (NZD)	Price Range (NZD)
1	Beanie	10	126	3.52	229.00	139.00	90.00
2	Beret	4	9	0.25	891.00	67.95	823.05
3	Blanket	9	48	1.34	3780.00	90.58	3689.42
4	Cape	1	31	0.87	2734.20	252.84	2481.36
5	Cardigan	11	102	2.85	945.00	75.00	870.00
6	Coat	2	5	0.14	694.60	314.08	380.52
7	Dress	3	12	0.34	510.38	150.00	360.38
8	Eye Mask	1	1	0.03	79.00	79.00	0.00
9	Gloves	9	44	1.23	144.00	45.28	98.72
10	Gown	1	2	0.06	169.00	159.00	10.00
11	GI Shawl	2	66	1.84	7678.35	350.00	7328.35
12	GI Stole	2	95	2.65	640.00	180.00	460.00
13	GI Scarf	2	19	0.53	443.64	150.00	293.64
14	GI Waistcoat	1	2	0.06	843.74	787.50	56.24
15	GI Muffler	1	4	0.11	255.95	179.16	76.78
16	GI Wrap	1	1	0.03	426.58	426.58	0.00
17	Hoodie	8	29	0.81	955.00	203.85	751.15
18	Jacket	2	6	0.17	537.90	295.90	242.00
19	Leggings	1	4	0.11	166.08	150.98	15.10
20	Poncho	9	39	1.09	799.00	115.00	684.00
21	Robe	1	1	0.03	759.00	759.00	0.00
22	Scarf	23	543	15.16	1222.08	45.28	1176.80
23	Shawl	16	1150	32.10	7608.81	88.20	7520.61
24	Slippers	3	5	0.14	252.84	108.90	143.94
25	Socks	8	49	1.37	135.24	47.50	87.74
26	Snood	1	4	0.11	216.00	117.00	99.00
27	Stole	11	470	13.12	1792.00	90.58	1701.42
28	Sweater	14	449	12.53	898.20	63.42	834.78
29	Sweatshirt	1	2	0.06	188.75	188.75	0.00
30	Sweatpants	1	4	0.11	508.87	398.64	110.23
31	Throw	5	29	0.81	3402.00	465.08	2936.92
32	Top	6	50	1.40	398.64	67.95	330.69
33	Track Pant	7	27	0.75	663.00	109.00	554.00
34	T-Shirt	5	25	0.70	598.00	289.00	309.00
35	Waistcoat	1	1	0.03	89.00	89.00	0.00
36	Wrap	8	128	3.57	1137.00	90.58	1046.42
Total			3582	100			

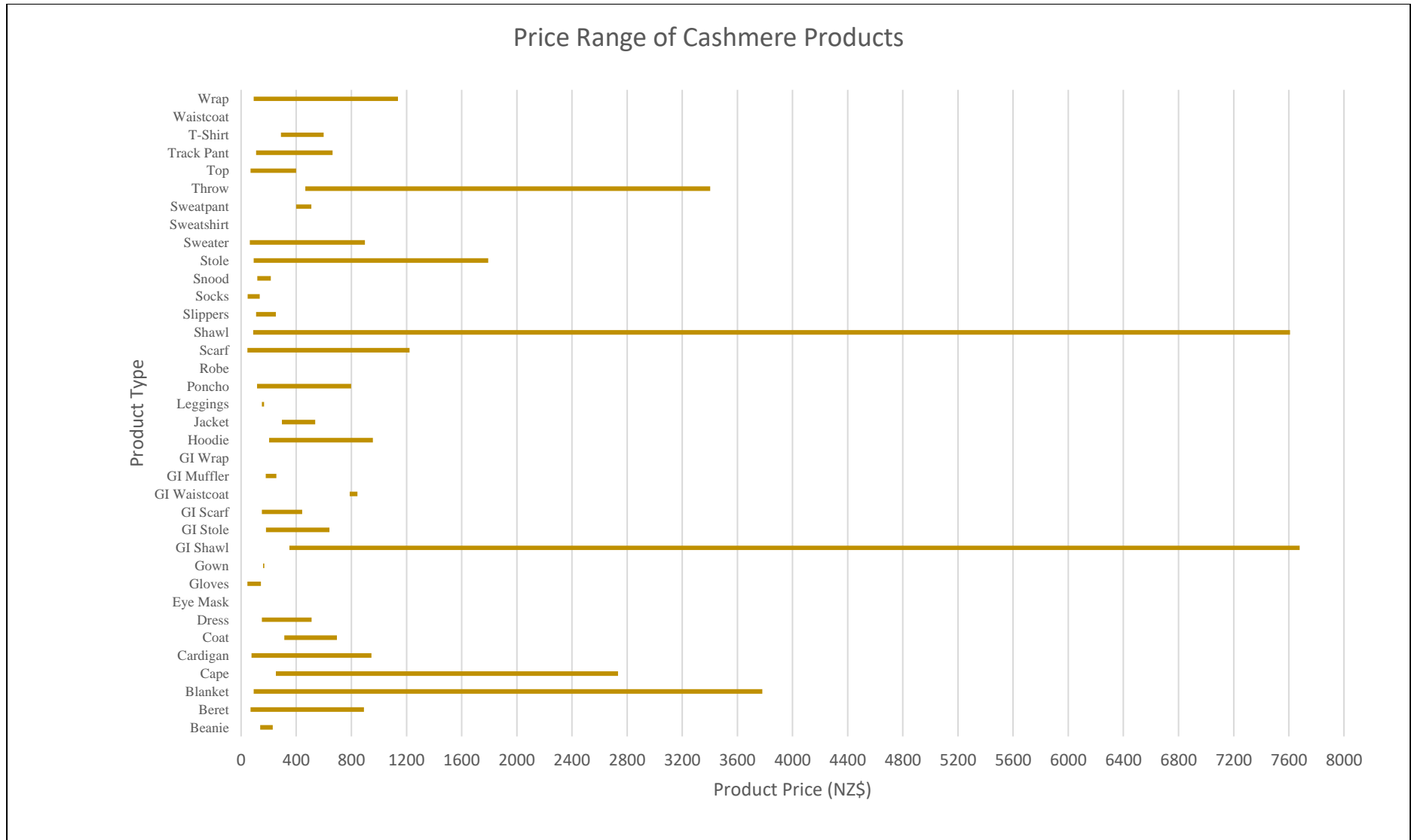


Figure 4.28 Cashmere product types and their price range

It requires different labelling options to cater to different markets. Findings suggest, in labelling a cashmere product, there are two main criteria. The first criteria include fibre; origin, fineness and whether the fibre is pure or blended. Whereas the second criteria include the practices used in dehairing, spinning and weaving processes. Considering the combination of manual and mechanised processing practices prevalent in the cashmere industry in India, four types of labelling options evolve to capture different cashmere market needs. Therefore, considering these criteria, distinct labelling scenarios are developed (Figure 4.29) for manually and mechanically processed cashmere articles. Based on different labelling options presented in Figure 4.29, cashmere products can be labelled based on the type of the cashmere fibre and the manufacturing practice used in the product. According to the research findings, four labelling options are identified and presented in Table 4.9.

Table 4.9 Labelling options of cashmere products.

Label Type	Cashmere Fibre				Process		
	Origin	Pure	Blended	Fineness	Dehairing	Spinning	Weaving
A	Anywhere	No	Yes	No	Mechanised	Manual	Manual
B	Anywhere	Yes	No	Yes	Manual	Mechanised	Mechanised
C	Anywhere	No	Yes	No	Mechanised	Mechanised	Mechanised
Kashmir Pashmina GI	Changthang, Ladakh	Yes	No	Yes	Manual	Manual	Manual

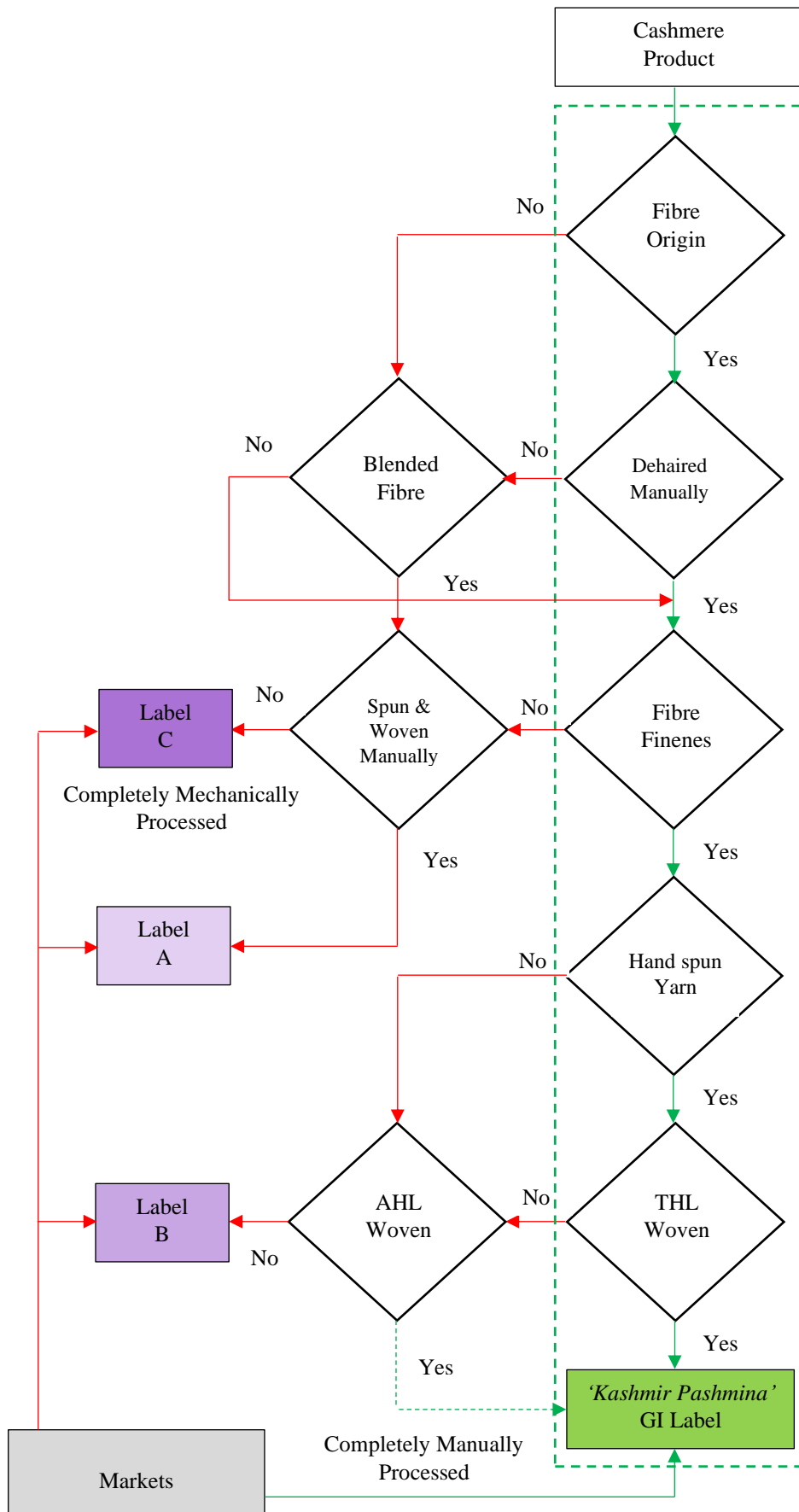


Figure 4.29 Distinct labelling scenarios in the traditional cashmere industry in India

4.8 Conclusion

This Chapter presents the results of the first research question of the study i.e., the role and significance of artisanal communities and product labelling in the cashmere value chain in India.

The chapter explored and elaborated various stages of multiple cashmere value chains operating concurrently in India. Cashmere value chain stages link various stakeholders such as suppliers, spinners, weavers, and other artisan communities associated with the ancillary activities of the operations. The research findings indicate, broadly, there are three distinct cashmere supply chains functioning in the region. The first one is based on the traditional operations whereas the second one is based on modern approaches used in the industry. The third category of supply chain is based on the criteria prescribed for the use of the Geographical Indications. The procurement of pure (genuine) raw cashmere fibre is one of the most important aspects in the cashmere industry. Raw cashmere fibre is required to satisfy an increasing demand in the Kashmir valley to produce a range of luxury cashmere products for traditional and GI based markets. Similarly, there is a demand for the low-price cashmere products which are made through mechanical processes for mass market consumption. Both product types create value for their respective consumer bases depending on the value consumers see from their purchase. However, for the consumers of cashmere products, the inherent expectation from the purchase is the authenticity in the material and manufacturing practices in the chain operations. Regardless of the chain type, it is important to know that the manufacturer can be a weaver, spinner or even a retailer who would generate resources (material and artisans) to produce the product. Among the three chains, the modern value chains dominate the traditional and GI based chains as they provide flexibility, reduces cost and effort, and have wider market reach.

Based on the market survey of cashmere retail websites it was found that there are numerous cashmere products available in the marketplace catering to the range of consumers' requirements. Findings of a survey indicate that the most significant product categories found were shawl (32.10%) followed by scarf (15.16%), stole (13.12%) and sweater (12.53%). Data indicates that consumers of cashmere products can be classified as cashmere admirers, value seekers and those who opt for cashmere articles as a fashion trend. Irrespective of the challenges or opportunities of the different cashmere production practices, the way labelling is being carried out in the cashmere industry leads to a range of unethical practices such as mislabeling and counterfeiting of products. In the present

cashmere industry operations, labelling practices do not capture information about the cashmere fibre used in the product nor does it mention the manufacturing practices adopted during the manufacture. Findings indicate that to cater to consumers' requirements across various markets there are different ways of manufacturing a cashmere article. For instance, a pure cashmere fibre shawl, made completely by hand, using traditional practices, has a niche market in India. Such an article is expensive and is more likely to establish a wider consumer base in the international markets, including famous fashion brands and haute couture boutiques all over the world. On the contrary, a blended cashmere shawl made on mechanised processes is relatively inexpensive and would sell in the local market easily. In India, such a market is developing at an enormous pace and generates a considerable amount of revenue to manufacturers at a reasonably lower cost. Therefore, based on the factors such as the place of fibre origin, type of the fibre used and manufacturing practice adopted in the manufacture, a labelling mechanism is developed to create a distinction in the cashmere products.

5 Results - The Effect of Cashmere Industry Changes on Processes and Products

5.1 Overview

In this Chapter, the findings of the second research question i.e, the effect of industry changes on the cashmere value chain processes, products and environment are described. In Section 5.2, the research question and the research objectives addressed in this chapter are presented. Section 5.3 identifies the effect of the industry changes on cashmere processes whereas Section 5.4 captures the effects on the quality aspects. The fifth Section highlights the effect on the environmental due to the industry changes that has taken place across a range of processes in the cashmere industry. In Section six, Chapter conclusion is presented in light of the research objectives of the study. Finally, in Section seven, Chapter summary is presented.

5.2 Research Question Two

In this chapter, the second research question of the study i.e., the effect of the industry changes on the cashmere value chain processes and products is addressed. For this, the effects of industry developments on cashmere processes are evaluated (objective three). Also, the effects of industry developments on product quality are examined (objective four) and the effects of industry developments on the environment are identified (objective five).

To address the second research question, data were collected from a range of artisan categories through interviews, process observations and documentary evidence. Based on the cashmere industry changes such as the advent of mechanisation, use of blended fibres, exposure to wider markets and lack of quality standards, thematic analysis-based approach was used to uncover the data collected in the study.

5.3 Effect on Cashmere Processes

In the following Sections, the third objective i.e. the effects of industry changes on cashmere processes is presented. In this, the themes evolved from the data such as fibre concerns, spinning issues and weaving aspects (along with their categories and sub-categories) are presented.

5.3.1 Fibre Concerns as a result of industry changes

The categories or sub-themes corresponding to the fibre concerns (Table 5.1) include unavailability of raw material, unknown raw material, blending issues and overdependence on experience.

Table 5.1 The theme fibre concerns, its categories and sub-categories

Theme	Categories (Sub-theme)	Sub-Categories (Concepts)
Fibre Concerns	Unavailability of genuine raw material	Raw material access issues, altered raw material procurement mechanism, high raw material cost, cashmere goat cloning
	Unknown raw material	Fibre blending, unknown blending source, limitations of artisans
	Blending issues	Abundance of blended fibre, lack of distinction between pure and adulterated fibre
	Overdependence on experience	Reliance on traditional approaches, Lack of testing mechanism, manual inspections

The first category related to fibre concern is the unavailability of genuine raw material in the desired quantities. This category is comprised of sub-categories which include raw material access issues, altered raw material procurement mechanism, high raw material cost and cashmere goat cloning.

As identified in the study, the raw material i.e., cashmere fibre was procured from multiple sources such as government approved establishments and through private traders. Many artisans stated that due to their limited approach and means, the local craftsmen based in

the Kashmir valley face issues in procuring the genuine raw material from the *Changthang* region in Ladakh. In this regard, one of the officials (G2) mentioned that,

“Major players of the industry procure raw cashmere directly from its source location (Ladakh) in bulk quantities leaving little room for smaller vendors and local traders to buy genuine cashmere fibre in the desired quantities.”

This issue was discussed with artisans. The artisans mentioned that to overcome the raw material accessibility problem, there was an alternate mechanism created to procure the raw cashmere fibre from a government operated entity known as small scale industries development corporation (SICOP). Notwithstanding, the authenticity of the cashmere fibre is a significant issue among the artisan communities in the region. The artisans stated that in most instances they do not get the adequate quantity of genuine fibre, and hence they end up using unknown varieties of fibres. Artisans further mentioned that the manufacturer procures the raw material (cashmere fibre) from different sourcing channels and provides it to the spinner for converting the fibre to spin the yarn. There is no mechanism to certify or provide any evidence of the involvement of manual intervention in fibre processing to ensure its genuineness.

Another reason ascribed to the unavailability of genuine raw cashmere fibre is its high cost. The issue of high raw material cost was highlighted by artisans who stated that one kilogram of unprocessed raw material is around INR 3,000 to INR 4,000 and after required processing it is available for INR 12,000 to INR 15,000 depending on its fineness. According to the government officials, to address the issues surrounding the procurement of genuine cashmere fibre, its unavailability to a wider artisan community and to contain the high raw material cost, initiatives were taken at different levels. In this regard, an official (G2) stated that,

“Some years back Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST) tried to develop a clone called ‘*Noori*’ here in Srinagar, but the quality of the fibre produced was inferior to what was required”.

The second category captures the abundance of unknown raw material in the cashmere chain operations. This was based on the sub-categories namely fibre blending, unknown blending sources and limitations of artisans.

As acknowledged by the industry stakeholders, due to the unavailability of genuine raw material in the required quantities, fibres with unknown compositions have made inroads in the cashmere value chains. As a result, over the years the cashmere industry has been flooded with adulterated cashmere fibre for which neither the fibre composition nor its origin is traced back to Ladakh. According to the artisans, after exposing the raw cashmere fibre into different processes of the value chain its genuineness is not assured. In this regard, an interesting analogy was given by a supplier (S1) who stated that,

“When a red chili is plucked from its source it can be considered as a genuine product. However, once it is processed in the form of a powder then it may not have its original properties intact. Similarly, cashmere fibre that is harvested in its raw form is easy to distinguish from other fibers until it is processed.”

These views draw attention towards the severity of the current practice of using unknown raw material in the cashmere value chains. During the interviews, it was found that the manufacturer who procures the raw material decide whether it would be used in the mechanised processes or be used in the traditional handlooms. Surprisingly, in most of the instances, the manufacturer is also not aware of the composition or the origin of the raw material. Retailers and artisans who are involved with the cashmere industry for decades stated that at present most of the cashmere yarn comes from China and through other unknown channels and the composition of the fibres remain unknown.

Interestingly, on the other hand, the genuineness of the fibre is not a concern for some artisan categories especially, those who are involved with mechanized processing (dehairing, spinning and weaving) wherein blended fibre is the only option to carry out the process. According to artisans, they have limited say in using the unknown fibre. The attitude adopted by artisans towards the unknown fibre is not only ascribed to the mechanical processing aspects but also to the poor wage structure the cashmere industry operates in. As stated by artisans, they work under the pressures of the manufacturer and if they share their apprehensions about the quality of the yarn to the manufacturer then the

manufacturer would simply ask them to concentrate on their job and collect their wages. Poor wages and the hegemonic attitude of the manufacturers limit the involvement of the artisans in the operations to address any quality issue at their level. Similar to the weavers, spinners also shared their similar experience. In this regard, a spinner (Sp3) explained that,

“We (referring to the spinners) are only concerned about the wages, whether there is any adulteration in the fibre or not we are not bothered. It is the responsibility of the manufacturer to sell the product to the retailer or to the consumer.”

The third category related to fibre concern are the blending issues prevalent in the present-day cashmere industry. This was based on two sub-categories: abundance of blended fibre and the lack of distinction between pure and adulterated fibre. Both artisans and the government officials have mentioned that the source of fibre blending or the stage at which the cashmere fibre is blended with other fibres is unknown. According to them, the fibre is blended before it reaches the artisans. As stated by a spinner (Sp1),

“During and post spinning, it is not possible to blend the fibre and by the time it reaches the spinners, the fibre is already blended and made-to-fit for further processing.”

To fulfil the demand, there is a surge in the use of blended fibre in the cashmere industry. The government officials involved with testing the authenticity of the cashmere products stated that these days there are numerous blending options available which are used to machine spun the yarn and it is highly likely to come across a cashmere product made from the blended fibre rather than an unblended genuine cashmere fibre. The retailers who were based in the heart of Srinagar city and have been selling cashmere articles for many decades mentioned that dehairing of the cashmere fibre on the machines and the fibre blending process spoils the raw cashmere fibre significantly. The retailers displayed different cashmere articles to the researcher ranging from INR 10,000 to INR 300,000 and elaborated on the distinction between a cashmere shawl made from genuine and blended fibres.

A retailer (R1) stated that,

“In many present-day cashmere shawls there is a very minute sound that can be heard after twisting the fibre indicating that a synthetic component is used in the product...it is likely that cashmere fibre is blended or mixed with some other fibres since it is almost impossible to blend the fibre during spinning.”

As stated by artisans, it is difficult to distinguish between the pure and blended cashmere yarn. The researcher observed that, if a yarn is pulled from the finished product and snapped then due to yarn tenacity it is likely to differentiate between the two since the genuine raw cashmere fibre is very fragile whereas the blended fibre is comparatively stronger and slightly difficult to break.

The fourth category or sub-theme corresponding to fibre concern is the overdependence on experience in establishing the fibre quality in cashmere articles. This is based on the sub-categories such as reliance on the traditional approaches, lack of testing mechanism and manual inspections. As mentioned by the artisans, fibre fineness and purity are important factors to determine the value of the fibre. In the cashmere industry operations both these aspects are largely measured on the expertise and experience of the artisan. On this aspect, a weaver (AHL2) stated that,

“Based on the experience of working in this craft for decades and with the feel of the fibre it is likely to differentiate between natural and synthetic cashmere fibres.”

However, it is not always certain that even the most experienced artisans working in the industry for decades would be able to clearly distinguish between the genuine and blended fibres with confidence. As observed, not only with the products but also at the procurement stage, a vivid difference cannot be observed between the pure and blended fibres. By visual inspection alone it is not easy to make a distinction between a genuine raw cashmere fibre procured from Ladakh as opposed to the one procured from elsewhere. As identified in the study, since there are many blending options available including super fine marino, Mongolian fibre, cash-gora (a blend of cashmere and angora) which are used to machine spun the yarn, it is highly likely to come across a product made from the blended fibre rather

than a pure one. In this regard, a government official (G3) shared an instance and mentioned that,

“In a meeting with the Director of Handicrafts, shawls made from pashmina and blended with *toosha* and silk were displayed and surprisingly all were considered as pashmina shawls. Unfortunately, at that time there was no specific labelling on the shawls made on the mechanised processes; and without scientific testing, it is almost impossible to distinguish a genuine pashmina shawl with a shawl made on mechanised processes using blended fibres.”

Similarly, as stated by the other officials, to eliminate the subjectivity surrounding the genuineness of the cashmere fibre, quantitative testing mechanisms are essential to ensure the quality of the yarn and cashmere products. Crafts and Development Institute (CDI) facility at Srinagar has taken measures in this regard to introduce quality testing mechanisms to ensure the quality of cashmere products. Ironically, as observed by the researcher during the field trip, very few artisans were aware of the initiatives taken by the CDI in establishing quality standards to check fibre fineness and composition prior to or after the manufacture.

5.3.2 Spinning issues as a result of industry changes

The theme (spinning issues) evolved from two categories or sub-themes i.e., covert spinning operations and lack of buyers of hand spun yarn (Table 5.2).

Table 5.2 The theme spinning issues, its categories and sub-categories.

Theme	Category (Sub-theme)	Sub-Category (Concepts)
Spinning Issues	Covert spinning operations	Widespread menace, defying legalities
	Lack of buyers of hand spun yarn	Time taking spinning process, inconsistent outputs

The first category related to the spinning issues is the emergence of covert spinning operations. This category is comprised of sub-categories such as widespread menace and defying legalities. As found during the interviews that spinning of cashmere fibre to

produce yarn on mechanised processes is considered illegal in the cashmere industry. Therefore, such practices are carried out covertly. According to spinners, mechanisation of the spinning process has imposed a significant threat and impacted the artisans and the craft considerably. Also, as stated by a manufacturer (M2),

“Earlier spinning on the mechanical processes were only conducted outside the Kashmir valley, especially in places such as Amritsar. Over the years similar equipment and mechanism have been established in the Kashmir region as well”.

Based on official communications (Letter; Deputy Director Handicrafts, Quality Control Division, Srinagar, 2014), there are 30-35 spinning and weaving units technically equipped to carry out cashmere processing in various locations spread across the Kashmir valley. Spinning cashmere articles on machines in the heart of Kashmir valley is prevalent to the extent that people involved in this illegal activity dare to challenge the inspection teams to provide them evidence whether they are involved with any wrongdoings. For instance, the content below is significant to understand the severity of the issue.

“During the inspection, it was found that some of the spinning units are processing Pashmina on machines by blending the fine quality low strength pashmina wool tops with nylon (higher tensile strength) to withstand the mechanical pressures during the spinning process. One such unit under the name (name suppressed) at (place suppressed) was found indulging in same activity. When the proprietor was asked about his covert spinning activities, he categorically accepted the spinning of pashmina wool tops, and as per his statement he has been authorized by Industries and Commerce (I&C) department to carry out spinning of wool tops of any quality (Rabbit/Lamb/Yak/Marino/Cashmere Wool Hair/Tops/Silk tops etc) and there is no law that forbids them from spinning of “Pashmina” on machines. It seems that these unit holders are taking the advantage of ambiguous technical terms used by I&C department while providing them authorization. In fact, these unit holders have also dared the inspection teams to show them

the orders by the government where the Pashmina spinning on machines is banned. Furthermore, to defend themselves, the manufacturers argued that there is not much difference between wool and pashmina which was refuted by establishing the distinction between the two natural fibres through SKUAST, Srinagar”.

5.3.3 Weaving aspects as a result of industry changes

The theme (weaving aspects) evolved from four categories i.e., government legislations, illegal weaving facilities, increased productivity and new product designs (Table 5.3).

Table 5.3 The theme weaving aspects, its categories and sub-categories.

Theme	Category (sub-theme)	Sub-category (concepts)
Weaving Aspects	Government Legislations	Govt. of India Handlooms Act 1985, J&K State Govt. Handicraft Act 1978
	Illegal weaving facilities	Equipment misuse, decreasing handlooms, new manufacturing hubs, protests against mechanisation, artisans’ union
	Increased productivity	Mass scale production, easy processing, Efficient production
	New product designs	Product variety, increasing competition, different markets

The first category under the theme (weaving aspects) is government legislations. This category captures the framework of legalities surrounding the handloom industry and in particular covers aspects related with cashmere-based operations through two sub-categories: Jammu & Kashmir State Government Handicraft Quality Control Act 1978 and the Government of India Handlooms Act 1985. The Handicraft Quality Control Act 1978 was established by the Jammu and Kashmir State Government to protect different categories of the handmade products in the state. In the Handicraft Quality Control Act 1978, the articles such as cashmere shawl are covered to protect them from being made using non-conventional practices. As mentioned by a government official (G3),

“There were four categories of handmade articles included in the Act; one of them was cashmere shawl. In 1998, the recommendations were suggested for implementation in the state but unfortunately even after more than 40 years nothing has happened.”

Similarly, to protect the traditional crafts, the Government of India introduced an act of the parliament known as ‘The Handlooms (Reservations of articles for production) Act, 1985’ (simply referred to as ‘The Handlooms Act, 1985’). The most significant aspect of The Handlooms Act, 1985 was to prohibit the production of handloom articles on mechanized processes. The Handlooms reservation Act 1985 of the Government of India banned 11 articles to be produced on machines including cashmere. Through these acts, the objective was to protect the traditional cashmere craft through legislations so that the craft and stakeholders associated with it are shielded from any malpractice prevalent in the industry. The most significant aspect of The Handlooms Act, 1985 was to prohibit the production of handloom articles on mechanized processes. This Act categorically states that,

“It is not permissible to use power looms for pashmina production. The Handlooms Act (1985) defines handloom as ‘any loom, other than power loom’ whereas the power loom is described as a loom which is worked by power”.

The major objective of the Handlooms Act 1985 was ‘the protection of interests of persons engaged in the handloom industry and the need for the continued maintenance of the industry’ (Handloom Act, p. 2, 1985). Furthermore, the Act mentions that ‘it is necessary for the protection and development of the handloom industry that the article or class of articles specified in column (2) of Table 5.4, shall with immediate effect, be reserved for exclusive production by handlooms up to the range specified in column (3)’ (Handloom Act, p. 11, 1985).

Based on the Handlooms Act 1985, the description of a shawl – the most sought-after cashmere product – is presented in Table 5.4.

Table 5.4 Description of a shawl (summarised extract from the hand looms Act 1985)

S.No.	Article or class of articles	Range reserved for exclusive production by handlooms
(1)	(2)	(3)
9.	Shawl, Loi, Muffler, Pankhi etc.	<p>Shawl is a piece of cloth woven from worsted yarn or woolen yarn or Pashmina yarn or pure silk yarn or cotton yarn and/or any combination thereof, which is used for covering body or worn over the shoulders without being put to any tailoring process and includes:-</p> <p>(A) a shawl –</p> <p>(i) which is woven with extra weft design, using woolen yarn or worsted yarn or pashmina yarn or pure silk yarn or cotton yarn and/or any combination thereof or in blends with other fibres which may be natural and/or man-made or synthetic, with dobby or jacquard design up to 400 hooks;</p> <p>(ii) which is woven using any type of woolen yarn, worsted yarn or pashmina yarn or pure silk yarn or cotton yarn and/or any combination thereof;</p> <p>(iii) which is woven with any count of yarn; and</p> <p>(iv) which is woven in any length, width and weight,</p> <p>(B) Loi, pankhi, mufflers, traditional shawls like kullu, kinnauri, khani, pashmina, dhor, lirancha (Tibetan), gajari or any shawl, by whatever name called, in the north eastern region.</p> <p>Explanation:- for the purpose of this order, item (A) and (B) does not include article made from cahmelon yarn.</p>

Furthermore, the Act defines and categorized different roles of the artisans who are involved in the handloom industry. For instance, based on the Handlooms Act, p.1, 1985.

“A processor or artisan means ‘a person engaged in any ancillary process subsequent to the production of cloth, such as dyeing, bleaching, mercerizing, calendaring, embroidering, printing, raising, cloth or any other finishing process, but does not include a producer, and the expression “process” shall be construed accordingly’. Whereas a ‘producer’ is defined as ‘a person engaged in the production of cloth on any loom, other than handloom, and shall include a person who owns, works or operates on a loom for the production of cloth, and the expression “produce” shall be construed accordingly”.

The second category of illegal weaving facilities captures the aspects such as equipment misuse, decreasing handlooms, new cashmere manufacturing hubs and protests against mechanisation. These aspects appear to have emerged because of the industry changes such as lack of implementation of government regulations and the advent of mechanisation in cashmere processing. Findings clearly indicate that the production of cashmere articles on mechanized processes is not permissible by law. There are 28 spinning machines and 25 power looms are registered with District Industries Centres in Kashmir for wool, *raffal* and *toosha* processing: but not for cashmere manufacturing. Therefore, a clear distinction has been made between wool and cashmere fibre by SKAUST (Appendix G). Nevertheless, in many instances it was found that these facilities and other logistics support is being used to produce cashmere articles on power looms without any approval from the concerned authorities (Directorate of Industries and Commerce DIC). Therefore, the illegal usage of mechanical processes in the cashmere industry was raised by the artisan communities to the government officials. Therefore, the District Development Commissioner ordered crackdowns against such operators in the Kashmir valley (Greater Kashmir, p. 5, Sept 16, 2013).

According to the weavers, to address the cashmere industry issues, the efforts were made by a non-profit organization for the well-being of artisan communities. In 2014, to provide voice to the cashmere artisans a union was created by the artisans. Kashmir Pashmina Karigar Union (KPKU) is a registered body representing *Kashmiri* artisans involved with cashmere processes especially, spinning and weaving. According to a representative of KPKU, the basic idea of creating the union was to bring the affected artisan communities together and to provide a unified platform to the artisans against mechanization and the wage structure prevailing in the industry.

The third category (increased productivity) has three sub-categories namely mass scale production, easy processing and efficient production. This category presents the significant increase in the volume of cashmere products due to the emergence of mechanization in spinning and weaving processes. According to different artisan categories, the increase in product volume and less consumption of time are the main reasons that drive manufacturers to opt for mechanized cashmere processing. As a result, majority of the manufacturers prefer mechanized processes because of the increased output as compared to getting it done from the weavers manually. For instance, according to weavers, in comparison with the pre-mechanisation era i.e., prior to early 2000, the production of traditionally made cashmere articles have declined significantly. As stated by artisans, earlier in Kashmir, if the production was of 10,000 shawls (with manual processing) then 50,000 to 100,000 shawls can be made in a month now (through mechanized processes). The sheer volume of the products, less production duration and low per unit cost are the main reasons that drives manufacturers to opt for mechanical mechanisms for cashmere processing.

The fourth category of new product designs includes sub-categories such as product variety, increasing competition and different markets. The category of new product designs signifies the positive impact mechanisation had on the cashmere processing practices. As a part of the luxury fashion industry, new trends and sophisticated product design is imminent for the survival in a competitive marketplace. According to retailers, in the traditional cashmere industry, prior to the introduction of articles produced on mechanised processes, cashmere fashion trends and product designs were not as much subject to change as they did in the recent past. Undoubtedly, a contributing aspect of mechanisation is the introduction of newer designs in the cashmere industry which were unheard of earlier as there are only certain types of designs that can only be made on the mechanised processes and not by the weavers manually. This aspect was highlighted by a weaver (AHL 1) who stated that,

“hum hairan ho jate hain aise design dekh kar, hum soch bhi nahi sakte ye banana ko” (Let alone the consumers, as a weaver, it amazes me since it is almost impossible to replicate such articles).

This gives the weavers an opportunity to consider different designs than the existing ones to compete with the trendier ones made on the power looms. This aspect was further highlighted by the weaver (AHL1) who mentioned that,

“Earlier there used to be only two types of shawls: plain and the one with design. More specifically, the design was based on diamond cut shape known as *Chashm-e-bulbul*. However, with the advent of mechanised processes newer designs are afloat in the market making the weavers consider adopting to the fast-changing trends. Some of the newer designs are so intricate and complex that an ordinary weaver cannot comprehend making them at all. Even for the weavers with high degree of expertise, it would perhaps take at least four times of an effort to accomplish the task.”

5.4 Effect on cashmere product quality as a result of industry changes

In this Section, the findings of the fourth objective i.e., the effects of industry changes on the product quality is presented. The theme sub-standard products describe the effect of industry changes across different cashmere value chain processes.

5.4.1 Sub-standard Products

Regarding capturing the impact on products, a theme (sub-standard products) evolved from the data (Table 5.5). This theme has four categories: lack of product durability, product imitations, improper labelling and inconsistent practices.

Table 5.5 The theme sub-standard products, its categories and sub-categories

Theme	Categories (sub-theme)	Sub-categories (concepts)
Sub-standard Products	Lack of product durability	Short product life span, intrusion of mechanisation, yarn fragility
	Product imitations	Lack of policy implementation, multiple production approaches, varied markets
	Improper Labelling	Unconcerned artisans, Insignificant emphasis on labelling
	Inconsistent practices	Visual inspection, dependence on sensory skills

The first category of lack of product durability is a major concern among the artisans who know the intricacies of the craft to the core. According to the artisans, cashmere articles made from the mechanised processes tend not to last long as compared to the products made from the traditional manual practices. Furthermore, as stated by the artisans, product life of the cashmere articles processed through mechanical processes is short due to inferior fibre and yarn quality. As mentioned by a spinner (Sp2),

“Shawls made from manual processes can be in good shape even after 30-40 years of regular usage. The pashmina articles made from traditional processes are matchless. On the contrary, the ones made on mechanized processes could not last even 3-4 years properly since the strength of the yarn is significantly reduced as it goes through the chemical treatment process to get rid of the external fibres from the blend.”

Similarly, other artisans and retailers stated that when the raw fibre is cleaned, spun and weaved manually, the shawl made from these processes would easily last for a couple of decades whereas the machine spun and machine woven shawls would last for only few years. Regarding product quality, there is another significant issue observed. In the articles made on mechanised processes, after little use, wear and tear surface in the form of bobbling and pilling of the fibres which shortens the product life. As stated by a tweezer,

“Due to the usage of blended fibres in cashmere products, yarn spun from blended fibres is subject to *burr* (bobbling)...whereas, the fibre spun manually by women spinners is not susceptible to bobbling to the same extent.”

Furthermore, as shown by the tweezer, on a manually made plain shawl the clipping of unwanted fibres is required to clean and polish the product. The clipping process takes only a few minutes whereas in the shawls made on the machines clipping is not required since in the beginning the article is smooth and even throughout. As demonstrated by the artisans, if clipping and polishing is not carried out on the cashmere articles, then upon donning the shawl the raw fibre would brush against the human skin and would result in an uncomfortable sticky sensation to the person upon wearing the article. The findings

indicate that most of the raw material available in the marketplace is blended and leads to sub-standard products.

The second category or sub-theme i.e., product imitations comprised of sub-categories namely the lack of policy implementation, multiple production approaches and varied markets. This category covers the issue of counterfeit cashmere products which are prevalent in the marketplace and sold as genuine articles. To fight the menace of counterfeit cashmere products, the artisans protested the products being made using mechanised processes. According to the officials,

“Due to the lack of policy implementation, there is a realization among industry stakeholders that if there is not much restriction on the mechanized cashmere operations in Kashmir so how can similar activities in other states of India or elsewhere be prohibited.”

The artisans and the officials stated that as a matter of fact, these practices are already taking place in Amritsar – a city in nearby Indian state of Punjab – and cashmere products made on the mechanized processes are readily available. Mechanically made cashmere products, especially the shawls, are produced in Amritsar and are known as *Amritsari shawls* among the cashmere artisan community in the Kashmir region. Regarding *Amritsari shawls*, an artisan gave an interesting simile and stated that,

“*Maan lo bas hathi ke daant hain, khali dikhawat ke liye hote hain*’ (They are like Elephant teeth; just for a showoff).”

Except in Kashmir, these *Amritsari shawls* have a decent market share in other states of India since they are less expensive and comes with attractive designs. However, their fabric and fibre quality is not at par with a genuine handmade cashmere shawl. As a comparison, weavers stated that a genuine *Kani shawl* starts from INR 50,000 whereas *Amritsari shawls* (imitations) with similar designs would range between INR 2,000 – INR 10,000. It is important to highlight that, as observed by the researcher during the field trip, the shawls made completely using the traditional manual processes were extremely soft in feel, but course in appearance. Whereas, the shawls made on the mechanized processes using blended fibres were marginally stiff in feel but extremely fine in appearance. However,

this distinction can be made only after a scrutiny of the two similar looking cashmere articles.

The third category of improper labelling highlights the issues of product labelling. This category includes sub-categories such as unconcerned artisans and insignificant emphasis on labelling. Surprisingly, labelling of products is not a major area of concern in the traditional cashmere supply chain operations. A retailer (R1) mentioned that,

“Among the artisan community, there is hardly any consideration for labelling. Only the manufacturer or retailer can do something for appropriate labelling, but it is not a priority for them.”

Weavers also acknowledged that blended cashmere products are sold as genuine handspun and handmade cashmere articles. A weaver (THL2) stated that,

“Blended pashmina products are masqueraded as genuine handspun and handmade pashmina articles. Such products are being sold in the market with labels which gives an impression to the consumer that the product is authentic and handmade, which is cheating with the consumer”.

Furthermore, as stated by weavers during the interviews that the degree of authenticity for counterfeit cashmere products increases when a Kashmiri artisan sells their products themselves in other parts of India or elsewhere. Even though, if the *Amritsari* shawl is purchased from Punjab with a *Kashmiri* label on it, the consumer considers the fact that since the seller is *Kashmiri* so it is likely that the product with him would be genuine as well. Whereas, in many cases this does not guarantee the genuineness of the product.

The fourth category covers inconsistent practices prevailing in the cashmere industry. This category covers the sub-categories of visual inspection, dependence on sensory skills and artisan experience. As observed by the researcher, as a common practice in the region the product quality is determined by the manual inspection of the product. This leads to significant degree of subjectivity in the assessment since it varies among different artisan communities. Furthermore, artisan’s experience and the process they are involved with also plays a critical role in ensuring the outcome of such an assessment. Spinners and

weavers stated that to establish the distinction between genuine and counterfeit cashmere products, manual practices are used to distinguish between a handmade article and products made from mechanised processes. As mentioned by a weaver (THL 3),

“For an experienced artisan a mere touch with a soft hand is sufficient enough to identify whether to product is genuine or counterfeit.”

Similarly, visual inspection is another criterion adopted by the industry practitioners to classify cashmere products into different categories. Artisans stated that by visual inspection it is evident whether the product is handmade or machine made. As mentioned by embroiders, a visual criterion to distinguish the products is the symmetry of the work and the finishing of the product. For handmade cashmere articles it is almost impossible to stitch a shawl with consistency i.e., having an identical number of loops across a design or to have a same colour combination throughout. Since a shawl is woven or embroidered over days and in some instances over a period of months so it is highly unlikely that the artisan involved with the article would be consistent across all the aspects throughout. The embroider further stated that, sometimes artisans have to make changes in the stitching style or colour combination depending on the instructions from the manufacturer based on the availability of the resources.

5.5 Effect on the Environment as a result of industry changes

In this Section, the findings of the fifth objective i.e., the effects of industry changes on the environment is presented. The theme i.e., environmental concerns (Table 5.6) consist of three categories: chemical treatment, impact on ecology and carbon footprint.

Table 5.6 The theme environmental concerns, its categories and sub-categories.

Theme	Categories (Sub-theme)	Sub-categories (concepts)
Environmental Concerns	Chemical treatment	Use of synthetic dyes, limited natural dyeing options, blended yarn processing
	Impact on ecology	Improper drainage system, chemical waste
	Carbon footprint	Mechanical processes, fossil fuel consumption

The first category captured under the theme (environmental concerns) is the chemical treatment. This category includes sub-categories such as use of synthetic dyes, limited natural dyeing options and blended yarn processing. According to the dyer, the dyeing process is carried out manually to colour the yarn in a variety of shades as desired by the consumer. As observed, in the dyeing process, the yarn is dipped manually in the boiling water (Figure 5.1a). This process takes no more than five minutes. After the process is complete, chemically contaminated water is poured on the floor to find its way to the drain which ends up in the nearby water body (Figure 5.1b and Figure 5.1c). This process is carried out unabated till the dyeing tasks for the day are complete.

According to the dyers, who had decades of experience in dyeing cashmere products, earlier natural dyes were used to dye 10 to 12 different shades. The dyer further mentioned that at present synthetic dyes are being used for a few reasons. First, as opposed to the synthetic dyes, natural dyes or colours are difficult to procure. Second, there are more than four hundred different shades of colours available to dye the yarns to meet customers' requirements. The dyers further stated that, synthetic dyes provide flexibility in the selection of the colours, and they are inexpensive and readily available. With natural dyes, it not feasible to such options.



Figure 5.1 The dyeing process involves colouring the yarn (a), discharging the water in the drain (b) and washing of hands post completing the process (c)

In recent years, environmental awareness has attracted the attention among consumers. As stated by an official (G1),

“There is a realisation among industry practitioners, to use eco-friendly and Azo free dyes to mitigate the effects and risks of such processes leading to environmental degradation.”

Similar thoughts were expressed by a dyer who stated that it would be helpful for the environment if the use of chemical dyes is restricted, and the use of natural dyes are encouraged. At the government level also, there is an acknowledgement of excessive use of synthetic dyeing options. As mentioned by artisans, another aspect leading to the environmental concerns in the cashmere industry is the increasing use of chemicals in blending the fibres. The chemical treatment of the blended yarn is carried out on a large scale and has a detrimental impact not only on the durability of the product but also on the environment.

Considering environment concerns, the second category i.e., impact on ecology consists of two sub-categories namely: improper drainage system and chemical waste. This category highlights another critical area that significantly impacts the environment. Similar to dyeing, due to the sheer volume of products, the existing washing practices are not environment friendly and leads to environmental concerns. Similar to dyeing, after washing, the waste water (Figure 5.2a) ends up to the nearby water body severely impacting the ecology of the area (Figure 5.2b).



Figure 5.2 Environmental concerns in the cashmere industry through washing practices and inappropriate outlets of waste leading to water clogging (a) Washing a handmade cashmere shawl (b) Water clogging near the washing facility

After washing, the article is placed in a cylindrical machine for rinsing before it is placed by the riverbank to sun dry (Figure 5.2b). As stated by a washer man (W1),

“Until 30-40 years back the riveret (flowing beside the washing facility) was crystal clear and good enough to drink the water from. However, due to negligence on the part of the community and lack of government support things have drastically changed for worse.”

The third category or sub-theme i.e., carbon footprint includes the use of mechanical equipment and fossil fuel consumption. Apart from the fact that the materials processed in mechanized processes compromise on fibre and product quality, such processes represent another threat to the environment i.e carbon emissions. As stated by the weavers that the power looms are operated through non-renewable energy operated generators.

5.6 Conclusion

This Chapter presents the results of the second research question of the study i.e., the effect of the industry changes on the cashmere value chains processes and products.

From the findings, it can be ascertained that the increase in product demand from a range of consumers who primarily focus on product; price and variety stimulated the procurement of the cashmere fibre from numerous sources. Due to this, different raw material types are introduced through numerous procurement channels which subsequently led to different dehairing, spinning and weaving practices in the cashmere value chain operations. Most of the raw material available in the marketplace is blended and due to the technological advancements in dehairing, spinning and weaving techniques, the modern supply chains satisfy the demand of numerous markets from the products made from different cashmere fibre blends. Based on the research findings: fibre procurement from multiple sourcing channels, mechanization of processes, blending of yarn and subjective quality assessments across three cashmere supply chain processes: dehairing, spinning and weaving are identified. Spinning issues included covert spinning operations and lack of buyers of hand spun yarn. Legislations, illegal weaving facilities, increased productivity and new product designs were the issues associated with the weaving aspects.

The modern cashmere industry practices such as mechanization of the processes and extensive use of blended fibres have penetrated numerous stages of the traditional cashmere production. This adversely affected the quality of the products, and by extension threatens the existence of the traditional cashmere industry processes. Also, fibre blending upstream leads to product quality issues – especially in the spinning and weaving stages leading to considerable degree of subjectivity over product authenticity. Therefore, from the perspective of the traditional chain and GI based chains, due to the usage of blended fibre in the cashmere industry, there is a dilution of product quality. However, from the perspective of the modern chains which cater to the considerably larger markets base and is more price sensitive rather than quality, the industry changes are encouraging. On the other side of the spectrum, there is a significant volume of cashmere articles being made using blended fibres leading to the production of counterfeit cashmere products. Findings indicate that the lack of product durability and product imitations discourages the use of mechanised processes as they have serious implications in the chain operations. On the contrary, the traditional processes have significant limitations on labelling and quality testing aspects which needs to be improvised. Cashmere products which are made manually from the pure cashmere fibre lasts for decades. Findings suggest that, the use of mechanised process is adverse on product quality and products made from the blended fibres are not as durable. Due to this, the durability of the products is severely affected and it reaches the end-of-life in significantly fewer years of use.

It is critical to understand that due to the surge in the productivity of cashmere products (through mechanical processes) the effect of increased processing has detrimental impact on the environment. In the cashmere industry, through mechanised processes there is considerable effect on the environment leading to air and noise pollution. In contrast, the handlooms promote cleaner production practices as they are manually operated. Also, there were environmental concerns such as chemical treatment, impact on ecology and carbon footprint which resulted from the industry practices.

6 Results – The Effect of Cashmere Industry Changes on Stakeholders

6.1 Overview

In this Chapter, the findings of the third research question is presented. In Section 6.2, the research question and the research objectives addressed in this Chapter are presented. Section 6.3 identifies the economic and social effect of the industry changes on the artisan communities whereas Section 6.4 captures the effects on the consumers. The fifth Section highlights the effect of the industry changes on the government institutions. In Section six, Chapter conclusion is presented considering the research objectives of the study.

6.2 Research Question Three

The third research question of the study i.e., the effect of the industry changes on stakeholders. To address this, a detailed account of the industry changes on cashmere artisan communities is captured (objective six) and key aspects affecting the consumers were identified (objective seven). Also, the response of the government institutions is identified (objective eight).

To address the third research question, data were collected from a range of artisan categories, retailers and government officials through interviews, process observations and documentary evidence. Based on the cashmere industry changes such as the advent of mechanisation, use of blended fibres, exposure to wider markets and lack of quality standards, thematic analysis-based approach was used to uncover the data collected in the study.

6.3 Effect on Artisans as a result of industry changes

In this Section, the findings based on the sixth objective i.e., a detailed account of the effect of the industry changes on cashmere artisan communities is presented. The categories which evolved from the data include financial challenges, social concerns and health hazards.

6.3.1 Financial Challenges

For artisans, the first theme i.e, financial challenges evolved from six categories i.e., rising unemployment, downward pressure on wages, cashflow issues, corruption, improper profit sharing and limited artisan resources. The theme financial challenges, its categories and sub-categories are presented in Table 6.1.

Table 6.1 The theme financial challenges, its categories and sub-categories

Theme	Category (Sub-theme)	Sub-Category
Financial Challenges	Rising unemployment	Fewer jobs for spinners, Job loss for traditional weavers, Diminishing work opportunities for other artisans
	Downward pressure on wages	Stagnant wages, Low return for artisans, Drop in artisan remunerations, Cashmere as alternate business
	Cashflow issues	Delayed payments, Demonetization
	Corruption	Legitimising counterfeit products, Vested interests, Bribery, Influence of power
	Improper profit sharing	Financial dependency on manufacturer, Lack of consideration for artisans
	Limited artisan resources	Logistical constraints, Lack of funds

The first category related to financial challenges is rising unemployment. This category includes three sub-categories such as fewer jobs for spinners, job loss for traditional weavers and diminishing work opportunities for other artisans. The government officials and artisans mentioned that for a considerable population in the Kashmir valley, cashmere has been a source of revenue generation where both women (spinning) and men (weaving, embroidery etc.) were involved in various cashmere activities throughout the year. Especially, during the harsh winter season (November to February) spinning activities are carried out by women spinners who could do it in the comfort of their homes while taking care of the other household responsibilities. Furthermore, it is important to know that spinning can be carried out at any time without requiring any changes to the spinning set up. As stated by a weaver (THL1),

“Manual spinning is one of the most convenient jobs for the women of the region for quite a few reasons such as; it can be carried out within the confines of their home, it is not a time bound job i.e., it can be performed at any time of the day (morning, evening, night) depending on the preference of the artisan.”

According to different artisan communities, the surge of mechanisation in the spinning process, woman spinners have been deprived of the work opportunity they had. In this regard, manufacturers expressed their opinion by stating that in the prevailing scenario in the cashmere industry women spinners have been ‘*marginalised*’ and ‘*rendered jobless*’ by the spinning machines. Similar to spinners, the weavers and other artisan communities have also been affected with the current industry trends which have significantly affected their livelihoods. For instance, a weaver (AHL1) mentioned that,

“My complete family including mother, sister, wife and father is involved with this traditional craft. They all do different cashmere related tasks according to their expertise and help each other. In this scenario, imagine the impact of mechanisation on my family if the existing scenario continues. The complete family will crumble as it is not easy for us to find an alternate source of revenue generation.”

The second category i.e., insufficient wages include four sub-categories, namely: stagnant wages, low return for artisans, drop in artisan remunerations and cashmere as alternate business. Apart from the lack of unemployment faced by the spinners, weavers and other artisan communities, low wages is also another issue that contributes to the woes of the artisan communities. For a spinner, who is an important stakeholder in the traditional cashmere value chain, the remunerations are the same if compared with the remunerations of the earlier generation of spinners.

As mentioned by officials and weavers, 30 years back a women spinner who used to get INR 1 for tying a cashmere knot still gets the identical amount for the same task. Similarly, weavers are no exception; and in fact, are worse off regarding the wage issues prevalent in the cashmere industry. The weavers stated that for one stole, generally a manufacturer used to give INR 350, however due to other options available to them (as there are other weavers

who are willing to do the same task for lesser remunerations) the manufacturer would now give INR 300 or INR 250. The weavers further stated that there are instances, where the weavers have made a stole for as low as INR 200 which is roughly half the amount a weaver deserves for a handmade stole. In another instance, a weaver (THL 3) mentioned that,

“Earlier we used to get as much as INR 80,000 for an exquisite shawl but in the present scenario, for the same article, we get INR 30,000 – INR 35,000. Similarly, earlier for a *Kani* shawl maker, who would make as much as INR 200,000 over a period of six months for a shawl was considered a good amount. However, at present, the wages have significantly dropped to more than half the amount the *Kani* weavers used to get a decade back.”

Similar to spinners and weavers, with low wages other artisans such as tweezers and embroiders are also struggling to make both ends meet. According to weavers, using blended fibres, advanced handlooms (AHL) are more efficient for the weaving process and due to this, tweezing jobs are aplenty. However, the increase in work did not improve the financial conditions of the tweezers since their wages are lower than before.

A tweezer (T1) elaborated that earlier he used to get hundred rupees but in the current scenario the same work does not fetch him more than twenty rupees per shawl. The tweezer further elaborated that the cashmere articles made on the mechanised processes do not need tweezing and as a result there are not many work opportunities for the tweezer leading to drop in their wages. Similarly, for embroiders artisan wages are the same today as they were a decade ago. One of the other reasons for the wage issues is because the cashmere craft is being carried out as an alternate business activity by some individuals. According to weavers, there are people who are doing other jobs and started working in the cashmere industry as their secondary revenue generation option. They are generating their primary income from the other sources but due to them the wages in the industry have dropped considerably.

The third category i.e., cashflow issues is another concern which have affected the artisan communities. This category evolved from the sub-categories of delayed payments and demonetization. As stated by artisans, on time payment is also a significant issue in the industry where the artisan, after completing their share of the task, may have to wait up to

a few months to get their dues cleared. The artisans also mentioned that, at times, partial payments with a promise to provide more work in future in lieu of the remaining payment is made by the influential actors (manufacturer and/or retailer) of the chain. On this aspect, artisans after reflecting on the current market scenario mentioned that sometimes the manufacturer is also constrained as their money is stuck in the market. Unless the product sells it is difficult for the manufacturer to pay their dues to artisans.

Based on the findings, another reason leading to the payment issues surfaced i.e., demonization of currency. Demonetization was a step taken by the government of India in 2016 in which currency denominations worth INR 500 and INR 1,000 bills were made illegal tenders. As mentioned by the artisans, cashmere products were not being sold in the domestic markets since the cash transactions were almost non-existent due to the non-availability of the cash. It is important to know that in India, the primary mode of financial transactions is through cash (Reserve Bank of India, 2021). This practice is more prevalent across the unorganised sector.

The fourth category i.e., corruption is another reason that led to the emergence of illegal production of cashmere products in the Kashmir valley leading to financial challenges for the artisans. This category includes legitimising counterfeit products, vested interests, bribery and influence of power as sub-categories. As stated by the artisans, in the cashmere industry, the manufacturer and the retailer are considered as the most powerful actors of the chain due to their reach and influence on various industry stakeholders. In this regard, weavers highlighted the significance of these actors in the chain by stating that,

“Influential people such as manufacturers and retailers control the industry. People in the industry are corrupt as these powerful actors give credence to the counterfeit cashmere articles since they have mechanism and channels to legitimize the fake product as genuine...powerful people who are industry billionaires have high level contacts in the government establishment. Such people rise the ladder and have made their life comfortable. However, for their own selfish motives they have compromised on the cashmere craft for the future generations.”

Based on the findings, another common practice to influence the people to fulfill their motives is bribery. Artisans stated that people who produce cashmere products on the

mechanized processes use bribery as a tool to influence officials to run their operations. The artisans stated that, over the years, many governments have taken cognizance of the mechanization of the traditional processes, but mechanization of the processes is ongoing and in fact has only increased. There are people who have vested interests in running such operations which continue unabated. However, to support the artisans, the government has started to provide financial loans so that the artisans, especially the weavers become self-sufficient. Unfortunately, as stated by the weavers, some officials associated with the distribution of the loan amount seek a portion of the amount back as bribe to release the loan to the borrower.

The fifth category i.e., improper profit sharing is another area that leads to the financial struggle of the artisan communities in the cashmere industry. For instance, according to weavers, majority of the artisans would get paid in the range of INR 30,000 – INR 50,000 for their work but the manufacturer or the retailer would fetch around INR 200,000 whereas the cost of the woven fabric would be just INR 5,000. According to weavers, the manufacturer is the sole beneficiary, and the artisans are at a loss. Similarly, according to other artisan categories including embroiders and spinners, the influential actors of the chain such as manufacturer and retailers benefit the most from the sales. In another instance, spinners stated that if a cashmere article fetches the manufacturer or retailer INR 100,000, then all the artisans combined together merely get 10% - 20% of the selling price.

A weaver (THL3) involved with *Kani* weaving mentioned that,

“In comparison to the effort, expertise and experience required to accomplish a cashmere article, the return is not worth even 5% of the inputs exhausted in the work.”

The sixth category of limited resources represents the limitations under which artisans work and the dependence they have over the powerful stakeholders of the chain. This category is comprised of logistical constraints and lack of funds. An embroider (E1) mentioned that,

“It is almost impossible to generate our own pool of resources to counter the dominant actors in the chain. For instance, the mobile phone we use is only worth INR 500-1000 (NZ \$10 – NZ \$20) let alone spending INR 20,000 – 30,000 (NZ \$400 – NZ \$600) on a computer to try out new patterns and designs to keep abreast with the changes happening in the marketplace.”

The embroider further stated that, in many instances the artisans work for middlemen and these middlemen have a variety of resources and contacts with manufacturers and retailers who have wider reach to explore different markets for their products. As observed by the researcher, majority of the artisans are not well-off and constrained with resources to carry out the work on their own. To minimize their dependency on manufacturer, many a times, the weavers take loans to generate resources for themselves.

6.3.2 Social Concerns

For artisans, the second theme (social concerns) evolved from four categories i.e., artisans leaving their cultural heritage, disempowering woman spinners, hard hit weaving community and alternate options for artisans or the lack thereof. The theme social concerns, its categories and sub-categories are presented in Table 6.2.

Table 6.2 The theme social concerns, its categories and sub-categories

Theme	Category (sub-theme)	Sub-category
Social Concerns	Artisans leaving their cultural heritage	Disinterest among artisans, Not passing on the craft to the next generation, Craft on the verge of extinction
	Disempowering women spinners	Deprived of work, Vulnerable community
	Hard hit weaving community	Lack of artisan honour, Hierarchy driven, Losing the significance of traditional weaving
	Alternate options for artisans or the lack thereof	Other options for artisans, Apprehension of indulging in illegal activities, Options for younger generation

The first category under the theme social concerns is artisans leaving their cultural heritage. This category evolved from three sub-categories: disinterest among artisans, not passing on the craft to the next generation and craft on the verge of extinction. According to artisans, the art of making traditional cashmere products flourished and attained global recognition due to the efforts of their ancestors who, over centuries have developed the cashmere craft in the region. As mentioned by the officials, the artisans try to carry forward the legacy and contribute as per their ability and expertise across a range of processes such as weaving, tweezing and embroidery. However, many skilled and experienced artisans who were involved across different cashmere processes are disinterested in continuing with their traditional skills due to limited revenue generation sources in the industry.

During the interviews, the artisans elaborated on this aspect by stating that in general people make progression in their lives, but for the artisans of the cashmere industry who are following their professions for generations, life has become regressive. As observed during the field trip, a similar situation is encountered with most of the artisans in the cashmere community. For instance, another significant artisan community i.e., the weavers are left with little options but to opt for other job opportunities. Unlike women spinners, the weavers (based on their skills) switch to other professions or even to opt for menial job opportunities that arise elsewhere. A weaver (AHL 1) mentioned that,

“My family has been involved in the weaving profession for four generations and based on my father’s footsteps, I also joined the family tradition. However, for the next generation, there are hardly any gains in the industry, and they do not see much future for themselves in it.”

A *Kani* weaver mentioned that, in Srinagar, there used to be a few hundreds of *Kani* weavers, a couple of decades back, however currently no more than fifty such artisans are involved with this craft. Artisans mentioned that they are not interested to pass on their skills to their children. For the younger generation of the cashmere artisans, the prospects for a rewarding job are elsewhere that they expect to get from their qualifications, or through another skillset. For instance, a woman spinner (Sp 1) reported that she does not want her daughter to pursue her profession, as she said,

“*Padai likhai kar ke kuch karna behtar hai, iss kaam me ab wo baat nahi rahi. Bas ab to majboori main hi karte hain kyonki aur kuch nahi hai humko.*” (It is

better to study as this craft is not the same as it was. Now, I am doing it out of compulsion as there is nothing else to do except this; referring to the fact that the artisan only knows this craft).

As stated by different artisan communities, in the existing scenario, majority of the artisans do not want their children to adopt their profession and carry forward the legacy of their forefathers to earn their living as they consider their craft as a '*worthless*' job. The artisans stated that, if a better work opportunity is available in an alternate vocation, then in the present scenario, not many artisans would be interested to pursue their current craft. According to spinners, at present, around five percent of the cashmere spinning is carried out by hand in the region which has been the major centre of producing cashmere products for centuries. Artisan communities stated that after the introduction of mechanised processes things have gone from bad to worse. The artisans have apprehension that and in the next few years it is likely that all cashmere processing will be carried out mechanically. The artisans also mentioned that unless the issue of mechanisation is resolved completely, this craft will cease to exist in near future. During the interviews, the cashmere industry stakeholders acknowledged that unless stern measures are taken and imposed strictly, there is little chance that the traditional cashmere industry would survive for long. Artisans believe that it is important to keep the values and traditions of the traditional cashmere craft intact. However, over the years these values and the traditional practices have deteriorated significantly which leads to dissatisfaction among the cashmere artisan communities resulting in the artisans leaving their cultural heritage. A spinner (Sp1) regretfully states that,

“ye wapas nahi aayega, sawal hi nahi paida hota” (referring to the golden period cashmere craft enjoyed in the region said, there is no way the craft would be the same).

Further findings indicate that from the government's perspective there is a recognition of the issues surrounding the cashmere industry. According to the officials, in the existing scenario, it is difficult to abolish cashmere processing on the mechanical processes and significant efforts are required to be made by the policy makers and bureaucrats to save the traditional craft. One of the officials (G3) mentioned that the world is progressing fast,

and it is unwise to simply celebrate the glorious past the cashmere craft has enjoyed in the region. According to another official (G1), the sensible thing is to look forward and revive the traditional cashmere industry under the constraints the industry is functioning. The officials stated that there are many factors and dimensions to consider such as the changing market trends, revenue generation opportunities for the industry and the livelihoods of the people involved with the existing practices for the sustainable development of the industry.

The second category is about disempowering women spinners who used to play a critical role in the traditional cashmere spinning operations. This category consists of two sub-categories i.e., deprived of work and vulnerable community. Artisans and government officials highlighted the importance of cashmere fibre spinning in the *Kashmiri* culture and stated that cashmere spinning is not just any other task to the women spinners of the region. According to them, there is an element of attachment associated with the spinning practice since the women in a typical *Kashmiri* household are used to cashmere spinning for long. However, with the shift in the cashmere industry, mechanised processes have changed the spinning practices significantly. There is an acknowledgement among the officials that mechanised processes have taken over the manual spinning process resulting in loss of jobs for women spinners for whom spinning was the only source of earning livelihood for their families. These specialised women artisans are more vulnerable than the other affected artisans (such as weavers or embroiders) since they have severely limited options to work elsewhere. As a result, they are left with barely any other choice but to abandon the craft. An official (G3) who is involved with testing the quality of the fibre and yarn mentioned that,

“Now a days, majority of the present-day spinning is being carried out using mechanical processes. The extent to which spinners are leaving manual spinning can be gaged from the fact that a decade back if there were 30,000 women spinners involved with the activity then at present it is difficult to find even 400 such individuals who can pass on the skill set to the next generation of spinners.”

The other option for the women spinners is to succumb to the pressures of the manufacturer and work on extremely low wages. In this regard, a weaver (THL 1) stated that,

“The union (referring to the NGO) also considered the plight of the women spinners and increased the wages for tying a knot of pashmina fibre by 1.5 times. This is considered as a significant step to bring the women spinners back to the skill they possess.”

According to artisans and manufacturers, ironically on one hand the government institutions boast and advertise ‘*women empowerment*’ through different schemes and programs for women upliftment nationwide but by allowing spinning on the mechanised processes they are depriving the skilled *Kashmiri* women artisans from work.

The third category is the hard-hit weaving community. This category consists of four sub-categories i.e., lack of artisan honour, hierarchy driven industry, exploitation and losing the significance of traditional weaving. In the traditional cashmere industry, the contribution of artisan communities has been valued for centuries. Moreover, the older generation of artisans are given much respect as they have carried the craft from their predecessors and, over the years, have contributed to its development. Apart from facing the livelihood challenges, respondents from the weaving community reported the diminishing respect towards the artisans and the cashmere craft. According to the weavers, they were proud of their traditional heritage, unique skillset, and unparalleled craftsmanship which, due to recent industry changes such as mechanization and the use of blended yarns, is not in the same as before.

However, the findings indicate that there is another dimension for the lack of artisan honour i.e., hierarchical structure of the industry. According to different artisan communities, in the present scenario, blended yarn sourced from unknown channels and the mechanisation of processes has diluted the relationship between the actors in the chain and resulted in artisans not getting the same honour they used to get earlier. For instance, the dynamics between the manufacturer and the weavers has affected considerably. Artisans stated that weavers at present do not get much weightage by the manufacturers (*Wusta*). The weavers mentioned that prior to the advent of mechanisation of the processes, the *wusta* used to respect and encourage the artisans by giving them work and spreading a good word about their craft in his circles. According to a spinner (Sp 1),

“Earlier, the manufacturer or the retailer would request the weaver by saying that ‘*Sahib, char shawl kar do*’ (Gentleman, please make a few shawls for me) and would happily wait for 10-15 days to get the work done.”

As observed, in the present industry scenario, the manufacturers are not dependent on the weavers alone anymore as they have other cost effective and efficient options available to them which results in the power imbalance of the chain and effects the relationship between the artisan and the manufacturer. However, manufacturers also acknowledge the current state of the artisanal community and stated that the noteworthy cashmere artisans whose shawls used to go to Napoleon Bonaparte is now struggling to get a decent living or the respect they used to have.

The weavers also stated that when the machine-made shawls are sold in the name of handmade articles the irony is that the artisans are held responsible for the substandard product which diminishes the trust factor between the consumer, artisans and the craft. The weavers and spinners stated that despite their genuine efforts, the artisans are considered as ‘*cheats*’ which make them feel ‘*discouraged*’ and ‘*insignificant*’. On the contrary, as stated by a retailer (R3), from the perspective of the consumers who appreciate the cashmere craft, the sophisticated handmade cashmere articles are a reason of ‘*pride*’ for the artisans when their consumers tell them that they refuse to believe that exquisite cashmere articles are made solely by hands. Similarly, as stated by a weaver (AHL 1),

“The intricate design and superior craftsmanship give the impression that something like this (showing an exquisite shawl to the researcher) can only be made by a ‘robot’ and not manually. This makes the consumer wonder that this craft has supreme artisans, and we feel proud about it.”

Significant disappointment was observed among the artisan community towards the government officials for not protecting the traditional weaving practices. The weavers stated that the government institutions were aware of the industry issues pertaining to the impact of mechanization for years but have turned a blind eye resulting in the marginalization of the traditional weavers. A weaver, whose wife is also involved with spinning, mentioned that there are two weaving approaches prevalent among the weaving community. In the first approach, the Traditional Handloom (THL) is used, whereas in the second one an advanced version of the handloom, using a shuttle, is used. The advanced

handloom (AHL) is relatively faster to weave a shawl and results in a better productivity. However, due to this, the weavers who are associated with traditional handlooms suffer since they cannot match the product volumes generated from the advanced handlooms. As stated by the weavers, for instance, using an advanced handloom if four shawls are made in a day then using a traditional loom it would take at least two to three days to come up with equal number of shawls. During the interviews, it was observed that weavers operating the THL and AHL also have subtle difference of opinion on their respective weaving approaches.

The fourth category captures the aspect of the limited options cashmere artisans have other than their existing professions. This category evolved from the other options for cashmere artisans, apprehension of indulging in illegal activities and options for younger generation of artisans. As stated by the artisans, given the opportunity to choose any other vocation, it is likely that many artisans would prefer to switch to another trades. Artisans further stated that many artisan communities such as weavers and embroiderers are carrying out their traditional craft as they most of them have little choice to generate revenue elsewhere to support their families.

Artisans also mentioned that, many of the artisans are now selling vegetables, running an auto rickshaw or working as laborers for their survival. A weaver (THL3) said he also started a business of distributing and selling blankets to the shops around the city. However, for older artisans is it beyond consideration to look for further job options. For instance, an artisan, who is representing the fourth generation of weavers and has been involved with weaving for the last 35 years considers himself too old to switch to another profession. The findings suggest that, in the prevailing scenario of the region, there is a downside of finding alternate revenue generation avenues for sustenance. As mentioned by the artisans, the artisan community is financially fragile and there are instances where some people have fallen into the trap of making '*easy money*' by getting involved into illegal activities such as drug peddling. For instance, as mentioned by an embroider (E1),

“Through illegal means up to INR 3,000 can be made on the daily basis whereas an artisan can barely earn INR 150 in a day. The embroider further stated that, however, illegal actions result in a deplorable reaction by the family members of such individuals and have a negative impact on the society at large.”

Findings suggest that the new generation of artisans are not willing to take up the traditional craft as they do not see future for themselves in it. A spinner stated that, her daughter is not interested in pursuing the centuries old craft but rather seem interested getting into other jobs such as ‘chain stitching’ which can be carried out within the confines of their homes. Similarly, a tweezer stated that his children have abandoned their professions and instead prefer to earn their livelihood working as laborers which provide consistent work opportunities. The government officials also acknowledged that, unfortunately, under the prevalent industry functioning the younger generation is not attracted towards the cashmere industry and unwilling to pursue the craft as they find it less rewarding and are exploring alternate avenues of revenue generation. As mentioned by artisans, the young generation is exposed to the developments taking in the world (referring to the internet and social media platforms) and wants to progress in life. Furthermore, their parents are also willingly investing hefty amounts on the education of their children in anticipation of their bright future which makes the younger generation opt for other professions to encash the best possible return on the investment made on them. The weaver (THL3) further elaborated that,

“In this craft if a person makes INR 15,000 per month then post completing their qualifications, they can expect to get double the amount working as a salesman for an established organisation. In Srinagar district, there used to be hundreds of *Kani* weavers, however at present no more than 50 such artisans are involved with this exquisite craft.”

6.3.3 Health Hazards

Regarding artisans, the third theme is health hazards. This theme covers the health hazards for the artisans working in the cashmere industry and constitutes of two categories i.e., long work hours and blended yarn issues. The theme health hazards, its categories and sub-categories are presented in Table 6.3.

Table 6.3 The theme health hazards, its categories and sub-categories

Theme	Category (sub-theme)	Sub-category
Health Hazards	Long Work Hours	Secluded from social interactions, Eyesight problems
	Blended Yarn Dust	Susceptible to infections, Breathing problems

The first category under the theme of health hazards is long work hours. As observed by the researcher, irrespective of their craft most of the artisans are required to work for long hours to keep their existence in the industry. According to the artisans, due to compelling reasons such as low wages, high competition because of the lack of work opportunities, there is pressure on the artisans to keep themselves immersed in their craft for long hours. The artisans look for work and do not want to miss out any opportunity that comes their way. As observed by the researcher, in most instances, the artisans such as the weavers, embroiders and spinners work in confined spaces. As stated by a weaver (THL 3),

“The artisans work on their own in a room and are detached from the rest of the world.”

Furthermore, due to the involvement in crafts such as weaving and embroidery for long hours, the eyesight of these artisan categories gets weak rapidly than the other artisans who are involved with different cashmere related activities. According to a weaver, the average work life of a *Kani* weaver is almost half that of a government employee (which lasts around 30 years or so).

The second category is blended yarn issues which leads to the health hazards. As observed by the researcher, the effects on the health on the tweezing process is not apparent as such. However, as stated by a tweezer (T1),

“Since the introduction of mechanised processes in the traditional cashmere processing, the degree of yarn dust has increased which is a clear indication that the yarn used in the cashmere article is blended as the blended yarns produce more dust during tweezing than manually processed pure cashmere yarn.”

Furthermore, the tweezer stated that due to the blended yarn used mechanical spinning and weaving processes, there is significant amount of yarn dust that infects the lungs and leads to breathing problems. As observed, during tweezing, to prevent the yarn dust, protective face masks are rarely used by the tweezer which impacts on their well-being.

6.4 Effect on Consumers as a result of industry changes

In this Section, the findings based on the seventh objective of the study i.e., identification of the key aspects affecting the cashmere consumers is presented. The theme product awareness, its categories and sub-categories are presented in Table 6.4.

Table 6.4 The theme product awareness, its categories and sub-categories.

Theme	Category (Sub-theme)	Sub-category
Product Awareness	Innumerable options	Changing consumer preferences, Fashion statement
	Exclusivity	Unique craft, Status symbol, Niche clientele

6.4.1 Product Awareness

The first category related to product awareness is innumerable options. This category includes changing consumer preferences and fashion statement as sub-categories. According to retailers, in the cashmere industry, the manufacturer used to follow the traditional designs and patterns for cashmere products. However, in the last few decades, consumers played a significant role in determining the fashion trends in the industry. The retailers mentioned that in the domestic market shawls are the most sought-after cashmere product. Whereas, in the international market stoles are more preferred. Based on the market trends, the retailer stated that consumers provide useful insights about the type of the products they want and, at times, suggest novel designs to try on the products except for *Kani* and *Sozni* styles which are traditional and do not change much over time. A retailer (R1) mentioned that, consumer sets the fashion trends and give us the ideas that we share with the artisans.

According to artisans, for consumers it is difficult to distinguish between a similar looking shawl worth INR 4,000 (processed mechanically) and INR 10,000 (processed manually)

and in most instances they prefer to opt for the less expensive option. However, as the consumer keeps on using the mechanically processed product it would lose its worth quickly and the product would reach its end-life in 2 to 3 years. Interestingly, some consumers do not get bothered with the imitations or for not considering spending more towards a genuine cashmere article.

The second category related to product awareness is exclusivity. This category includes unique craft, status symbol and niche clientele as sub-categories. This category elaborates on the distinctness associated with the cashmere articles. According to the artisans, handmade cashmere products require supreme artisanry skills and similar outputs cannot be achieved through mechanised processes. Artisans further stated that, the market is afloat with cashmere products which are made in China and Mongolia. The artisans also acknowledged that articles produced in these countries, through mechanised processes, have fine designs and nice appearance. However, as further stated by the artisans that they take pride in their craftsmanship and believe that the skill set and the expertise they possess to produce handmade cashmere articles is unmatched. A weaver mentioned that, sometimes the consumers come from overseas such as Switzerland, England and Russia to witness the unique traditional cashmere shawl making process which is unique to Kashmir.

6.4.2 Trust or the Lack Thereof

The second theme represents the issue of trust in the cashmere industry. This theme covers two categories: consumer concerns and ethical aspects. The theme trust, its categories and sub-categories are presented in Table 6.5.

Table 6.5 The theme Trust or the Lack Thereof, its categories and sub-categories

Theme	Category (Sub-theme)	Sub-category
Trust or the lack thereof	Consumer concerns	Counterfeit products, Over dependence on trust
	Ethical aspects	Stakeholders' responsibility, Lack of traceability mechanism

The first category related to trust or the lack thereof is consumer concerns. This category includes counterfeit products and over dependence on trust. As reported, in an instance of counterfeit cashmere article, in 2013 a Japanese lady imported a cashmere shawl from

Kashmir only to later found that it contained less than 20% cashmere in the blended shawl which was sold as a genuine cashmere shawl by an exporter (Greater Kashmir, p.1, June 14, 2013). Fake cashmere is an open secret to the extent that in an embarrassing event for the cashmere industry, in 2015, an advertisement for a major mobile internet service provider in India, the issue of counterfeit cashmere products was highlighted and mocked by demeaning the entire cashmere industry through an advertisement played on a popular TV channel (<https://www.youtube.com/watch?v=oFYTiYj0nus>). Based on this advertisement, a lot of backlash arose by various artisan communities against the government institutions as they failed to protect genuine cashmere craft over the years. As stated by an official (G3),

“The Jammu and Kashmir Chamber of Commerce were contemplating to place a lawsuit against the mobile service provider for mocking the cashmere industry for selling fake products. However, at that point in time no authentic labelled cashmere product was available to counter their claims.”

Trust is an integral part of the cashmere operations between various stakeholders of the value chain. According to cashmere artisan communities especially spinners, weavers, embroiders and manufacturers who are the backbone of the cashmere industry operations, trust among each other in the type of the material used and work ethics such as timeframe to complete the designated task is paramount.

As stated by the weavers, depending on the clientele they cater to mostly the retailers get the cashmere products from a set of manufacturers who produce the articles with specific cashmere fibres i.e., pure and blended. In the entire chain operations, there is no traceability mechanism to affirm the trail of the material used or manufacturing practices adopted in the operations. However, trust which is the most important factor between the retailer and the consumer in the cashmere industry is the weakest link in the chain. As stated by manufacturers, the retailer must state clearly to the consumer whether the product is handmade or made from the mechanized processes. Spinners stated that, if the retailer is genuine then it is likely that the consumer should be made aware of the fibre composition of the cashmere article. The retailers, based on their experience, are aware of different types (genuine and fake) of cashmere articles. According to weavers, retailers and manufacturers do not provide genuine product information to the consumers.

Artisans mentioned that, some manufacturers have showrooms overseas especially in the Western countries to sell their products which are not made from genuine cashmere. A weaver stated that such manufacturers make a lot of money from overseas markets where the consumers have little time or knowledge to investigate the genuineness of the cashmere product. According to the artisans, they dupe the consumers with counterfeit articles since those consumers are unlikely to be aware of the intricacies of the craft. As mentioned by a weaver (THL 3),

“People mislead the consumers for their gains which is not a good thing for the industry.”

The theme trust highlights consumer concerns and ethical aspects associated with the purchase of cashmere products. Trust is critical among all chain stakeholders in the cashmere industry. In the present scenario, efforts are required to establish a mechanism to ensure that genuine and blended cashmere products are placed through the appropriate distribution channels to distinguish various cashmere articles.

6.5 Effect on Government Institutions as a result of industry changes

In this Section, the findings based on the eighth objective i.e., assess the response of the government institutions on the cashmere industry changes is presented. The theme government institutions, its categories and sub-categories are presented in Table 6.6.

Table 6.6 The theme government institutions, its categories and sub-categories.

Theme	Categories (sub-theme)	Sub-categories
Functional Constraints	Red-tapism	Lack of interdepartmental coordination, Bureaucratic functioning
	Policy implementation or the lack thereof	Not banning mechanised cashmere processes, Ineffective government measures
Support Mechanism	Financial Assistance	Loans for traditional cashmere development, Government aid for cashmere industry development

	Educational programs	Cashmere industry-based qualifications, Encouraging young cashmere entrepreneurs
Lack of ownership	Insufficient marketing of genuine cashmere products	Ineffective promotion of GI, Lack of foresightedness
	Lack of coordination between government institutions and artisans	Communication gap, Insufficient traceability of loan amount

6.5.1 Functional Constraints

The first theme evolved from the data is functional constraints which cashmere industry related institutions work under. This theme evolved from two categories i.e., red-tapism and policy implementation or the lack thereof. The theme covers and elaborates on the practical challenges policy makers face due to implicit and explicit constraints involved with the cashmere industry operations in India. The theme and its categories and sub-categories are presented in Table 6.7.

Table 6.7 The theme functional constraints, its categories and sub-categories.

Theme	Category (sub-theme)	Sub-categories
Functional Constraints	Red-tapism	Lack of interdepartmental coordination, Bureaucratic functioning
	Policy implementation or the lack thereof	Not banning mechanised cashmere processes, Ineffective government measures

The first category i.e., red-tapism includes the lack of departmental coordination and bureaucratic functioning. It relates with the work style and the degree of coordination different government institutions have with each other. According to the government officials, primarily, three Public Sector Undertakings (PSU's) under the Department of Industries and Commerce (DIC) are responsible for different cashmere industry related aspects. The roles and responsibilities of the PSU's are presented below.

1. Jammu and Kashmir State Handloom Development Department (JKHDD)

The Handloom Development Department plays significant role in generating employment opportunities for the artisan community. By adopting modern approaches in the handloom sector, the institution is instrumental in upgrading the skills of approximately 50,000 weavers – 15,000 are in the organised sector – in the state through appropriate training and other programs.

2. Jammu and Kashmir Handicrafts (Sales & Export) Corporation (JKHSEC)

In Jammu and Kashmir, the corporation is responsible for sales and export of handicraft and other products related to cottage industries of the region. Also, the institution helps on the financial and technical aspects to manufacturers, small traders and co-operatives to produce and supply raw materials. Furthermore, for quality control, tools and equipment are provided to ensure quality and for better marketing of the handicraft products such as shawls and papier mache.

3. Jammu and Kashmir Small Scale Industries Development Corporation Limited (SICOP)

The main objectives of the corporation are to cater to the requirements of micro, small and medium enterprises (MSME) of the region. SICOP aids, assists, safeguards, promotes and provides infrastructural facilities in the form of Industrial Estates to the MSMEs in the J&K. The corporation also provides marketing cover to the products being produced by the local industry in the region. Also, it offers various types of raw materials to the industrial units/Govt. Departments and provides testing facility to the products being manufactured by the local industry in J&K.

According to the government officials - exclusively for the cashmere industry - under the Ministry of Textiles, Government of India and the Department of Industries and Commerce (Directorate of Handicrafts, Government of Jammu and Kashmir), Craft Development Institute (CDI) was established as an autonomous body in 2004 through the joint efforts of the state government (Industries and Commerce Department) and the central government (ministry of Textiles) for the development of handicrafts in Kashmir to show case the rich cultural and traditional heritage of the region. As evident from the findings, there are different government departments responsible for various aspects of cashmere industry operations. According to government officials, due to a range of reasons related with the

functioning style of these institutions, the outcomes are unfavorable for the industry. For instance, as mentioned by a government official (G3),

“Due to work culture differences and delays in requisition fulfilments, one of the Directors who significantly contributed to the development of the CDI had to resign as he was a technocrat and was not comfortable with bureaucratic way of functioning of the government institutions dealing with cashmere craft. Since he had left, there is barely any progress on the initiatives he had taken during his tenure at CDI.”

The manufacturer and officials further mentioned that one of the reasons is the bureaucracy across the government institutions which limits the implementation of appropriate actions in letter and spirit. An official (G3) mentioned that the efforts are made in the right direction but more seriousness at the bureaucratic level is required for the betterment of the cashmere industry.

The second category of policy implementation or the lack thereof reflects on the aspect of the lacunas in implementing the policies which were made to ensure the proper functioning of the traditional craft industry.

According to the government officials, the government has to legislate the Acts (State Act of 1978 and Handlooms Act 1985) so that the concerned authorities function accordingly, but it has not happened so far. Furthermore, the officials showed their displeasure with the current situation in the cashmere industry and stated that unfortunately it has been more than 40 years, but the rules of the Act of 1978 and Handlooms Act 1985 has not been implemented yet. In this regard, the grievances of various artisan communities were also captured to highlight the significance of the issues related with the lack of policy implementation. For instance, as stated by artisans, the artisans approached to a few ministers of the state government to make them aware of the plight of the cashmere artisans. Based on the efforts of the ministers and Kashmir Chamber of Commerce, some respite was provided to the artisans by prohibiting the production of cashmere articles on machines through CrPC (Criminal Procedure Code 144) Section 144. According to weavers, based on the complaints of the production of cashmere articles on the power looms from various artisan communities, measures were taken by different government officials. The office of the District Magistrate of Srinagar (Appendix H) which falls under the Government of Jammu & Kashmir issued an order stating that,

“Now therefore, I, District Magistrate, Srinagar in exercise of powers vested in me by virtue of Section 144 of CrPC. hereby impose restrictions on manufacture of cashmere and kani products on power looms within the jurisdiction of District Srinagar for a period of two months. This order shall come into force with immediate effect. Given under my hand and seal of this office on this day the 28th of August, 2015.”

According to weavers, regarding cashmere production on the power looms, under CrPC 144, the production of cashmere on machines can be banned. However, the weavers also stated that the restriction under CrPCC is only valid for two months and such bans must be renewed by the District Commissioner to make any significant impact on the illegal functioning of the mechanized equipment in the cashmere industry.

In an order issued by the District Magistrate, Srinagar it was categorically mentioned that,

“Till an appropriate legislation is enacted, government may either issue an ordinance banning cashmere on Power looms or Deputy Commissioner may issue an order under 144 CrPC to ban use of cashmere on power looms in the respective jurisdictions.”

To address the issue of mechanization in the cashmere industry, in another instance, in a letter (Appendix I) issued to the district development commissioner, Srinagar by the Joint Director of Department of Industries and Commerce, Srinagar following points are worthy enough to be mentioned here to highlight the steps taken by various government institutions.

1. In a meeting held under the Chairmanship of Honorable Chief Minister in the year 2000, it was decided that the state government shall take steps to ban the machine pashmina spinning to protect the interests of pashmina spinners and weavers. At that period, four units were registered with DIC Srinagar on formal basis for the activity of Dehairing of cashmere which were functional, and 12 number of units were also provisionally registered till the year as mentioned herein above.
2. It is further submitted that, as per the available records, no unit is either provisionally or formally registered for spinning/weaving of pashmina, though the registrations for

spinning and weaving of wool, cotton, raffal, blended etc. yarn/fabric have been issues in favour of various unit holders by the respective DIC's.

3. The department can proceed against such unit holders, as are reportedly inducing in mechanized cashmere activity by initiating deregistration proceedings against them, if these are found carrying on this activity.

Similar efforts to ban cashmere processing on the mechanized processes were taken by the Handloom Development Department (Appendix J). However, various artisan communities mentioned that ineffective measures have been taken by different government institutions to curb illegal cashmere activities prevalent in the region. The artisans further stated that they have carried out many demonstrations, made organisations, spent money, met with the Chief Minister but nothing concrete has happened from the government. Similar thought were expressed by the spinners who stated that the government does not take stern action against such activities (referring to mechanisation) and simply act as a mute spectator. If government wishes, they can make things happen as before i.e., prior to the introduction of machines in cashmere processes. Similar thoughts were concurred by a manufacturer (M3) who elaborated that,

“Over the years, many governments have come and as a matter of fact the influence of mechanisation in the cashmere industry has increased. However, it is difficult to identify whether it is due to the vested interests of individuals or institutions that this menace keeps on prospering... to establish the set up for mechanised processes, it requires significant number of resources which without the knowledge of the local officials is impossible. This gives an impression that under the carpet these activities are happening and the government is not taking notice which makes this glorious art suffer.”

6.5.2 Support Mechanism

The theme support mechanism captures the initiatives taken by various government institutions involved with the cashmere industry. This theme evolved from two categories or sub-themes i.e., financial assistance and educational programs. The theme support mechanism, its categories and sub-categories are presented in Table 6.8.

Table 6.8 The theme support mechanism, its categories and sub-categories.

Theme	Categories (sub-theme)	Sub-categories
Support Mechanism	Financial assistance	Loans for traditional cashmere development, Government aid for cashmere industry development
	Educational programs	Cashmere industry-based qualifications, Encouraging young cashmere entrepreneurs

The first category related to the support mechanism is the provision of financial assistance to artisans, especially to spinners and weavers to encourage them to continue with their traditional cashmere practices. According to the government officials, the prime minister of India during his visit to Kashmir has announced INR 50,000,000 aid for the development of cashmere industry in the region. Furthermore, based on the responses from the artisans and government officials, it is found that the government provides a bank loan of up to INR 100,000 to the artisans for the traditional cashmere weaving. However, the banks who release the loan amount charge significant amount of interest on the borrowed money from the artisans which needs to be repaid within a specified time.

As stated by the artisans, in cases where the artisans fail to sell the cashmere articles made from the borrowed amount, the artisans eventually find themselves under heavy debt which is the worst-case scenario for the poor artisan. The weavers also stated that on one hand, the government provides the loan and on the other hand they let the mechanised processes run for cashmere processing. According to majority of the cashmere industry stakeholders, the government does not take sufficient measures to curb the mechanization of the cashmere processes and they simply provide a loan of INR 50,000 or INR 100,000 to the artisans. According to the weavers, the main issue is mechanisation which is not abolished yet and moreover with a loan of INR 100,000 only a few shawls can be made, and the entire loan amount will be consumed in it with no assurance of getting it sold.

The second category covers the aspect of the introduction of educational programs initiated by a government establishment – Craft and Development Institute (CDI), Srinagar. According to government officials, to revive and streamline the traditional cashmere

industry practices, at CDI, entrepreneurial initiatives and academic programs at various levels (Diploma and Masters) are introduced to encourage the younger generation to be a part of their traditional and cultural heritage. For instance, in consultation with the experts from the premier educational institutes of India such as Indian Institute of Management (IIM), Indian Institute of Technology (IIT) and National Institute of Design (NID), curriculum is developed to encourage and educate the present generation of learners about the intricacies of establishing and managing a successful entrepreneurial entity in the cashmere industry. Through different qualifications, technological aspects, nuances of the craft and management insights associated with traditional cashmere processes are covered to address the gaps existing in the industry. According to an official (G1),

“At CDI, qualifications related to handicraft industry especially pashmina is introduced. For instance, a Masters in Craft Management and Entrepreneurship (MCM) is offered.”

The officials mentioned that the idea behind introducing the MCM program is to produce ‘*craft entrepreneurs*’ who not only have sound understanding about the management and market related aspects involved with a business but also have knowledge about the intricacies involved with design, technology and craft of the cashmere processes. For instance, MCM offering is on the lines of a Master of Business Administration (MBA) program contextualized exclusively into the handicraft industry. According to the official, on an average there are 10 to 15 students in each batch. The officials further stated that after completion of the programs, the qualifications are granted by Kashmir University, Srinagar (Kashmir University, n.d.).

6.5.3 Lack of Ownership

The theme lack of ownership encapsulates two categories or sub-themes i.e., the lack of marketing genuine cashmere products and communication gap between government institutions. The theme lack of ownership, its categories and sub-categories are presented in Table 6.9.

Table 6.9 The theme lack of ownership, its categories and sub-categories.

Theme	Category (sub-theme)	Sub-category
Lack of Ownership	Insufficient marketing of genuine cashmere products	Ineffective promotion of GI, Lack of foresightedness
	Lack of coordination between institutions and artisans	Communication gap, Insufficient traceability of loan amount

The first category i.e, insufficient marketing of genuine cashmere products evolved from two sub-categories such as ineffective promotion of GI and lack of foresightedness. This category uncovers the issues associated in marketing the cashmere products made from the traditional practices. The role of the government-controlled retail outlets such as the arts emporium is to promote and market genuine cashmere articles. However, according to artisans, the government-controlled retail outlets also sell the cashmere articles which are not made from the traditional practices using genuine raw material. Weavers mentioned that the arts emporium do not buy products from genuine cashmere producers as they are aware that the genuinely made traditional articles would be expensive and difficult to sell.

Other artisan communities also stated that for artisans who borrow a loan of INR 100,000 from the government initiated financial loan scheme to make genuine cashmere products, there is no salability of their articles since the authentic cashmere articles are expensive and the emporium do not purchase their articles. Similarly, manufacturers say that the emporium officials deliberately purchase less expensive products that are manufactured in Amritsar and elsewhere which the emporium sell to the consumers at exorbitant prices to get the best possible profit margin from the sale. According to the officials, to address this issue of not being able to buy authentic pashmina products by the Emporium, officials say that,

“hum le lete magar hamari majboori hai ke ye hame thoda mahenga pad jata hai”. (We could have bought genuine and properly labelled cashmere articles, but we are sorry since it is a bit expensive for us to only purchase such products).

Ironically, the existing government mechanisms fail to channelize their resources to place the genuine cashmere products back in the market. In this regard, the government officials

mentioned that, the government crafts emporium procures cashmere products from trusted manufacturers and traders. The officials acknowledged that to cater to a wider consumer base and to ensure profitability, the basic criteria is to purchase low-cost products. The government officials state that,

‘hum saste main iss liye lete hain kyonki hamin bhi survive karna hai’. (We buy less expensive articles since we have to survive as well).

According to the officials, there were suggestions made to the higher authorities to make the purchase of genuine pashmina products mandatory to all Govt. Emporium outlets i.e. to only purchase appropriately labelled products. The officials also mentioned that the concerned authorities in the government was requested to allocate some funds so that only authentic and properly labelled products are purchased in the government retail outlets, but the suggestion was discarded citing the lack of financial resources.

The second category is the lack of coordination between institutions and artisans. As stated by the officials, the primary role of various government institutions and administrative authorities dealing with cashmere is to support and help prosper the traditional cashmere craft. For this, many initiatives have been taken by appropriate government institutions. However, according to the artisans, majority of the craftsmen were not made aware of the government initiatives and policies as these policies and initiatives are not realized on the ground. Also, the artisans stated that they do not have sufficient confidence in the government initiatives as they are unsure of the impact these policies would have on the operations. To combat the insurgence of mechanised processes in the traditional cashmere industry, the issue of insufficient traceability mechanism to keep track of the utilisation of the loan amount borrowed by the artisans also surfaced during the interviews. As mentioned by a supplier (S1),

“There is no mechanism created by the government institutions to keep track of how the money was spent or whether genuine cashmere articles were made by the loan borrower.”

During interviews, it was observed that few artisans were aware of the initiatives taken by CDI in establishing the quality standards through GI. On the contrary, spinners and weavers suggested to have a similar mechanism to address the issues surrounding

mechanisation and the use of blended fibres. Furthermore, in another instance, as mentioned by a weaver (THL 1), advanced handloom (AHL) based products are not considered for GI labelling. However, according to the officials, cashmere products made on the traditional loom (THL) are preferred and encouraged for weaving but for the GI quality testing the products made on AHL are also included and are considered eligible for GI label upon conforming to the labelling requirements. This indicates the lack of communication and coordination between the policy makers, institutions and the artisan communities.

6.5.4 Geographical Indications

The theme Geographical Indications evolved from four categories or sub-themes i.e., registration process, global recognition, quality standards and stakeholders' apprehensions. The theme Geographical Indications, its categories and sub-categories are presented in Table 6.10.

Table 6.10 The theme Geographical Indications, its categories and sub-categories.

Theme	Category (sub-theme)	Sub-category
Geographical Indications	Registration Process	Long and hard-fought battle, Need of the hour, Resistance from competitors, Political dimension
	Global Recognition	Mark of credibility, Product traceability, Support for artisans
	Quality Standards	Encouraging traditional processes, Expert consultants, Process based testing, Stringent testing criteria, Sophisticated technology, Testing and labelling options, Craft Development Institute.
	Stakeholders' Apprehensions	Aesthetical aspects, Conflict of interests among stakeholders, Limited beneficiaries, Fear of losing brand identity, Fear of losing invested capital

The first category is the registration process. This category evolved from sub-categories such as long and hard-fought battle, need of the hour, resistance from competitors and political dimension. According to officials, based on the adverse effect of the industry changes in the traditional cashmere craft, appropriate initiatives were taken by the government and various stakeholders involved in the industry to secure the cashmere craft with GI label. According to the officials, the process to acquire the GI label was tedious and took almost 10 years from the initial stages of research and development through to filing the application before the final approval was made by the concerned authorities.

The officials involved with the GI registrations processes stated that during the registration process there was a stiff resistance shown from various stakeholders. For instance, Kashmir Handloom Pashmina Trust (KHPT), a government establishment, voiced their concern for not considering the machine spun yarn as a part of GI labelling criteria; according to them this exclusion would make the products made from the mechanised spinning processes as being not genuine. The officials further stated that due to the Kashmir conflict prevalent in the region, an opposition from Pakistan was raised for granting the 'Kashmir Pashmina' GI label to India. However, after a series of deliberations with the authorities and a long legal battle, the issue was resolved and the GI '*Kashmir Pashmina*' label was granted. According to officials, surprisingly, the resistance was also faced internally from the inhabitants of Ladakh region who claimed that since the source of cashmere fibre is from Ladakh, therefore the label needs to be known as 'Ladakh Pashmina' as opposed to 'Kashmir Pashmina'. The officials stated that their claim was refuted by the authorities citing that since the cashmere craft has evolved in Kashmir and it is renowned in the world as such, so it is justified to call the GI label as 'Kashmir Pashmina'. The officials elaborated that, *Tahafuz*, a society of Kashmiri artisans, registered under the J&K Societies Act and bearing Registration No. 5611S/ 2007, are the 'Registered Proprietors' of 'Kashmir Pashmina' GI label.

The second category global recognition includes three sub-categories such as the mark of credibility, product traceability and support for artisans. As stated by the officials, the Global Identification label ensures the authenticity associated with the product which is recognised globally. The officials further stated that for cashmere products, 'Kashmir Pashmina' GI label indicates that the product is a hand-spun and hand-woven article in the Kashmir valley. Since embroidery is also carried out manually, therefore, a GI label means that mechanical processes are not used in spinning, weaving (explicit assertion) and

embroidery (implicit assertion). Regarding GI, an official (G1) gave a simile with gold and stated that,

“Similar to Hallmark gold, the GI labelled products demand higher price from the consumers but also provides assurance on product quality. Moreover, the GI label is a mark of product authenticity and genuineness and hence such products enjoy high resale value in the market.”

During the interviews, it was found that artisans and government officials had a similar opinion that consumers have a right to know the product details prior to the purchase of cashmere articles such as the fibre composition and the manufacturing practices used during the manufacture. Retailers mentioned that consumers are generally inquisitive about whether the product is hand-spun and/or hand-woven. However, in the existing labels on the cashmere products such information is rarely provided and as a result, in many instances, consumers are duped and they feel cheated from the purchase of such articles. Therefore, as the officials stated, for consumers, traceability is significantly important to ensure the value they get from the purchase of the cashmere article. Traceability not only helps the end-users but also helps various actors involved in different production phases gain trust about the processes adopted and materials used during the manufacture. As stated by artisans and officials, the consumers seek value in the product based on the information they get from the sources such as the retailer and/or manufacturer. The officials also mentioned that due to the lack of appropriate mechanisms to seek trusted information about the product and its manufacturing processes, the consumers feel frustrated and unsure about the true value of the product since they do not assign much credibility to the existing information sources i.e., manufacturer and the retailer. According to retailers, not many consumers have awareness about GI products. A manufacturer also mentioned that he showed GI and non-GI labelled articles to a consumer and explained the difference between the two. The consumer trusted his word but to get further assurance on the GI labelled product she also checked the product details through the official website. The artisans and officials stated that there is a growing demand of cashmere products made from the traditional processes across the world which leads to work opportunities for the artisans involved in the craft. As stated by an official (G1),

“A consumer who purchases a GI labelled cashmere product will not only gets best product value but also supports the artisans who are involved through a chain of processes required to deliver the product to the consumer. Through this, craftsmen and women spinners not only get tangible benefits (monetary gains) but also it helps the chain stakeholders feel encouraged and realise that their concerted efforts are being recognised and appreciated in the competitive marketplace.”

The third category quality standards evolved from sub-categories such as encouraging traditional processes, expert consultants, process-based testing, stringent testing criteria, sophisticated technology, testing and labelling options and craft development institute. According to officials, ‘*Kashmir Pashmina*’ GI label is based on the products (shawls & stoles) and processes (spinning & weaving). As per the guidelines provided in the GI Act, the inspection body constituted by Craft Development Institute and *Tahafuz* is responsible for the overall monitoring of the use of the Kashmir pashmina GI label with respect to maintaining the quality, integrity and consistency (Quality Manual). The officials stated that, testing and labelling criteria are developed by the Craft Development Institute in consultation with the experts from the Sher-e-Kashmir University of Agricultural Sciences and Technology (SKAUST) Srinagar and the Bombay Textile Research Association (BTRA). The officials also mentioned that along with Kashmir Handmade Pashmina (KHP) Trust, which came into existence during the Shahtoosh ban imposed by the Wildlife Trust of India (WTI), two members each of Tahafuz and KHP are selected to ensure that prior to carrying out the testing on pashmina articles at the CDI facility they randomly select the articles based on their experience by looking at the physical appearance of the product. In this, the members randomly select a sample of 20% and after consultation decide whether to recommend lab testing or return it to the owner i.e., artisan, manufacturer or the trader. If the lot is considered genuine by the experts, then the sample is then sent to CDI for scientific testing of the products. According to an official (G3),

“The mandate of the CDI lab testing facility is to provide the GI label, however, most of the products received at the lab are for sample testing, not for GI labelling.”

The official also pointed out to the fact that they need to cover their operational expenses, so they also carry out material (fibre and yarn) testing, which over the period has become the core activity of the lab. For testing and GI labelling, there are four parameter requirements i.e., fibre origin, fibre fineness, spinning process, weaving approach used. The officials stated that product testing and labelling is being carried out through a team of well-qualified and trained workforce who possess the knowledge of the craft and expertise to conduct scientific testing on a range of products from obtained suppliers (fibre and yarn), weavers and manufacturers (shawls and stoles).

According to an official (G3), the '*Kashmir Pashmina*' GI label follows stringent testing criteria through a series of tests. For quality assurance, American Association for Textile Chemists (AATCC 20-A) standard for material testing are introduced for the testing parameters. Advanced technology is used through a variety of testing mechanisms such as Differential Scanning Calorimeter, Projection Microscope, Twist Tester and Pick Glass for different quality parameters. The officials mentioned that through stringent testing mechanism, it is almost impossible to replicate the label placed on the cashmere article. According to an official (G3), the GI users who are registered with the government testing facility are categorised in one of these three categories i.e., the traders, manufacturers and artisans. The official also mentioned that there are approximately 200 registered users who are availing the facilities and services of GI testing and labelling and, at this stage, around 2000 articles have been labelled as GI marked products. Furthermore, the official elaborated that, around 200 – 300 products are labelled/tested on the monthly basis. During the interviews the officials stated that, at present, the numbers of the registered users and the GI labelled products are low. However, a positive and encouraging aspect is that most of the stakeholders are willing to continue with the GI labelling by abiding to the quality parameters established by the industry experts and government authorities.

The fourth category stakeholders' apprehensions evolved from aesthetical aspects, conflict of interests among stakeholders, limited beneficiaries, fear of losing brand identity and fear of losing invested capital. The manufacturers have stated that a few years earlier not many stakeholders in the cashmere industry were aware of the GI. However, at present, at least a few people in the industry have taken initiatives at their end to comply with GI testing (if not labelling) and many others are considering having GI testing and labels in their products. As mentioned by an official (G3), labelling of the GI mark on cashmere articles has been challenging due to the aesthetical dimension associated with the product.

Considerable number of deliberations were involved into this aspect with the stakeholders regarding the use of Radio Frequency Identification (RFID) tags and using detachable stickers on the product so as not to compromise on the aesthetics of the product.

As mentioned by the officials, there is a degree of apprehension among the manufacturers and/or retailers to adopt to the GI labelling at the expense of their brand. An official (G3) stated that some retailers and manufacturers have established their brand identity in the market over the decades, which in their opinion may be diluted with the GI label on their product. The official also stated that, most of the large manufacturers and/or established brands prefer only to test and certify the fibre used in the product as opposed to label the product through GI to safeguard their brand identity. Another official (G1) stated that ‘Kashmir pashmina’ is already a unique brand in the marketplace and needs to be encouraged by the stakeholders.

Regarding the use of GI labels, the officials also say that manufacturers and/or retailers are unsure about the future government policies or the stance they would take regarding the GI labels. Another reason for the low response of the stakeholders regarding the use of GI is mentioned by a weaver (THL 1) who stated that, some manufacturers are considering complying with the GI parameters, however, they already have invested significant amounts in different cashmere processes. The weaver further stated that such manufacturers are apprehensive whether their investment across different cashmere processes is GI compliant or not. The weaver further elaborated and said,

“At the end of the day, manufacturers cannot say to their clients that we have 10 genuine products and the remaining 90 are not.”

6.5.5 Artisans’ Expectations

The theme artisans’ expectations evolved from two categories process based and stakeholder related. The theme artisans’ expectations, its categories and sub-categories are presented in Table 6.11.

Table 6.11 The theme artisans’ expectations, its categories and sub-categories.

Theme	Category (sub-theme)	Sub-category
Artisans’ Expectations	Process Based	Abolish mechanical processing, Encourage environmentally friendly operations, Channalise processes
	Stakeholder Related	Empower women spinners, Establish committees at the ground level, Provide pension to artisans, Provide tax rebate, Standardise remunerations, Strengthen the traditional brand

The first category process based include abolish mechanical processing, encourage environmentally friendly operations and channalise processes. The artisan communities stated in unison that mechanized processed needs to be completely abolished from the cashmere industry operations. During the interviews, there were many instances where artisans have shown their displeasure on the continual use of the mechanized processes. Based on artisan responses on this issue, the researcher gathered the views of the government officials which demonstrated sympathy towards the artisan communities. However, an official (G1) also mentioned that,

“At certain processes such as dehairing mechanised processes would not harm the final product as much, and to be pragmatic, mechanization is required to speed up the time consuming manual dehairing process.”

Another official (G3) concurred with the thoughts of the other official (G1) and said that,

“For testing, currently, fibre dehaired from mechanised processes is not considered at all in identifying genuine cashmere products.”

The officials stated that in the current scenario it is unlikely that the existing mechanised operations will cease to exist, and a pragmatic approach needs to be adopted to address the industry issues. Moreover, as stated by an official (G3),

“There are several people associated with the non-traditional cashmere processes. Even though these stakeholders are an immediate threat to the traditional cashmere craft but it is not as easy to discount the workforce employed in the parallel cashmere industry due to the influence these stakeholders have in the region.”

As stated by the artisans, there is a growing realization in the artisan communities that the way forward is to opt for the traditional ways. The industry stakeholders acknowledge that the market share of the environment friendly products is small, however, they anticipate that over the passage of time things are expected to improve in the cashmere industry. As stated by artisans and officials, the trend in the Western countries is to consume organic and eco-friendly products made from natural resources and similar thinking needs to be adopted in the cashmere industry. Also, the artisans stated that to make the cashmere operations sustainable, the government needs to take control of the fibre procured from Ladakh and distribute it under their control. Furthermore, the artisans mentioned that the government is required to develop a mechanism to keep track of the raw material usage and the outputs generated from it in the form of the number and type of the cashmere articles produced. Artisans further said that the government institutions need to take back these outputs, label them accordingly before distributing and promoting them through their retail outlets.

The second category stakeholder related evolved from the sub-categories i.e., empower women, establish committees at the ground level, provide pension to artisans, provide tax rebate, standardise remunerations, and strengthen the traditional brand. Based on the interview responses from different stakeholders of the chain, it was ascertained that the women spinners, who are most vulnerable among all artisan communities, need to be involved in the cashmere spinning operations. A manufacturer mentioned that through GI, it is highly likely that cashmere spinning on the *Charkha* will be revived and many women who are struggling to have a job would get their source of income back. During the interviews with different artisan communities, it was found that remunerations in the cashmere industry needs to be revised and standardised. The artisans mentioned that, the government intervention is imminent in ensuring the interests of the cashmere artisans by establishing ‘*process and skill-based*’ remunerations. Through this, both artisans and manufacturers would find the cashmere craft lucrative enough to pursue to earn their

livelihoods using the traditional manufacturing approaches. In another instance, some artisans mentioned that the government institutions need to support the artisan communities and the traditional cashmere craft by standardising the remunerations of the registered GI users i.e., the traders, weavers and manufacturers. For this, the government institutions need to ensure that registered artisans who are conforming to GI standards are given better remunerations than the prevalent market wages.

An embroider suggested that another way to address disparity in wages among the artisans is to establish committees related to different cashmere processes in the urban and rural areas and fix the wages accordingly. The artisans also stated that, for instance, different types of shawls such as *Jamwar*, *Sozni* and *Kani* require a specific skillset and expertise so the artisan remunerations need to be based accordingly. Furthermore, the weaving processes involved should also be considered whether the article is produced on a traditional handloom which is more time consuming and arduous to work on as compared to the advanced version of the traditional loom. The artisans also suggested that, for registered GI users, a provision of pension after a certain age needs to be devised to attract a large pool of artisans who are leaving their respective craft to find work opportunities elsewhere. The artisans mentioned that a mechanism based on artisan's skillset and experience gained in their craft needs to be created. Also, as stated by a weaver, to help the artisan communities, the government needs to give tax exemptions to encourage the artisan communities to continue with their traditional craft.

6.6 Conclusion

This Chapter presents the results of the third research question of the study i.e., the effects of cashmere industry changes on stakeholders.

The effect of the cashmere industry changes on the artisan communities is substantial. Especially, mechanisation of the processes is fast replacing the human element from many significant cashmere processes such as spinning and weaving. As a result, the artisan communities majorly affected by the cashmere industry changes include spinners and weavers. Tweezers and embroiders also bear the brunt of the present-day operations and industry anomalies such as lack of standards. Rising unemployment, downward pressure on wages and cashflow issues leads to financial challenges for the affected communities. Also, due to the industry changes such as the surge of blended fibres and the emergence of new entrants in the cashmere operations, the current scenario not only results in low

monetary returns for the artisan categories but also diluted the wage structure and leads to delayed payment from the manufactures. For vulnerable artisans, this opens a window of opportunity to take loans which leads to another vicious cycle for the artisan to get into – borrow loans at high interest rates. However, communities such as dyer, block printer and washer man are not affected as much since their operations were not impacted with mechanisation of processes or have any influence of fibre blending.

Among artisans, the social concerns highlight the aspects such as artisans leaving their cultural heritage by not carrying forward the craft they knew for generations, disempowerment of women spinners and limited work opportunities for affected communities elsewhere. As identified in the findings, in the present cashmere industry scenario, artisans who were involved with cashmere processes in different capacities have either left their professions or contemplating to opt for other revenue generation sources to sustain themselves. For this, many artisans have succumbed to unskilled menial jobs. Also, some artisan communities are prone to health issues for working significantly longer durations in uncondusive work conditions.

The findings indicate that the trend is changing as there are affordable options available catering to a wide range of changing consumer demand. Increasing number of consumers prefer to purchase cashmere for fashion purposes and not to keep it for longer durations. If the product does not last beyond a couple of years of use, the consumers tend to discard the article and replace it with another one as they are easily available at a reasonable price. As a result, few consumers are willing to spend heavy amounts on genuine cashmere articles. This indicates, in the cashmere industry, consumer preferences are changing, and their preference is on having product price and variety rather than durability. However, this consumption trend prompts to product imitations, promotes non-standard practices and results in non-compliance in the industry practices. Furthermore, as evident from the findings, for a niche clientele, trust is more critical to have confidence in the product as they view the cashmere article not only from its tangible aspects such as appearance and design but also through the perspective of intangible attributes associated with the product including artisans' skill, exceptional expertise and the time involved in making the product. However, trust in the product authenticity is subject to vary among the consumers.

Since the issue of cashmere production being carried out on the mechanized processes came into the public domain, the role and approach adopted by various government

organizations and institutions has been under scrutiny by the industry stakeholders. Officials at different levels in the government have taken cognizance of the issues such as mechanization, counterfeit products prevalent in the cashmere industry and addressed these issues by imposing restrictions. However, the measures taken by different government bodies to curb cashmere manufacturing on mechanical processes were mostly confined between various institutional communication channels and were rarely realized in practice. Based on the findings, few reasons responsible for the current state of the cashmere craft are; the lukewarm response from various government institutions primarily due to red tapism, the lack of ownership of the pashmina related affairs, foresightedness, inadequate traceability mechanisms in the industry and to say the least; insufficient coordination among various government bodies responsible to promote the traditional cashmere craft. The findings suggest that the Government outlets such as government run arts Emporiums do not take the products back from these artisans (whom they provide loan to). Instead, they purchase the products from other sources who either give commission to the officials to buy their articles or who have close knit contacts with the officials. The introduction of GI labelling in the industry is an important initiative and the need of the hour to protect the traditional cashmere craft. At present, there is resistance from various industry stakeholders, and the environment is not encouraging for GI based manufacturing. However, the significance of GI and the role it can play in reviving the traditional cashmere craft is critical. For instance, embedding GI in the cashmere chains using the state-of-the art technological advancements helps mitigate quality issues and leads to sustainable practices in an industry which is predominantly, and traditionally, based on manual processing. There are different market segments which exists in the cashmere industry. This aspect is to be recognized by the policy makers and needs to be dealt accordingly by creating appropriate policy mechanisms. The role and significance of the government-controlled retail outlets such as the arts emporium spread all over India becomes significant in establishing the trust between the producers and the consumer. For this, these facilities need to ensure that they promote and provide GI labelled products in their retail outlets so that consumers have an opportunity to seek best possible value from their purchase.

7 Discussion

7.1 Overview

This Chapter presents a discussion on the significance and relevance of the research findings presented in Chapters four, five and six. In this chapter, results are synthesized with the extant literature to assess the effect of the industry changes on the stakeholders regarding sustainability and quality aspects. In Section 7.2, the discussion is structured to capture the effect of the cashmere industry changes on the cashmere value chains. Section 7.3 discusses the quality issues attributed to the non-conformance of standards, sub-standard products and improper product labelling during the manufacture. In Section 7.4, processes such as procurement, spinning, weaving, ancillary activities and labelling are discussed. Section 7.5 presents the sustainability issues surrounding the artisan communities highlighting the effects of the industry changes on social dynamics, environment, and economic aspects. Whereas government institutions related facets are addressed in Section 7.6 and the conclusion is presented in Section 7.7.

7.2 Cashmere Value Chains

There are multiple cashmere value chains operating in the cashmere industry (Figure 4.25). These chains are classified in three broad categories: traditional chains, modern chains and Geographical Indication based chains. The three cashmere value chains have distinct features but also share some common aspects to meet variable consumer demand across a range of products. However, the prevalent operations in the cashmere chains are not sustainable and subject to discussion due to several factors presented in chapters five and six. As a result, there is a need to address existing financial, social and environmental considerations in the cashmere industry. Therefore, in this Chapter, the effect of the industry changes such as the advent of mechanisation, use of blended fibres, exposure to wider markets and lack of quality standards are discussed in light of the cashmere value chain processes and industry stakeholders surrounding sustainability and quality. Based on the research findings, in this section, an overview of the multiple cashmere value chains operating in India is provided.

7.2.1 Traditional Chain

The traditional cashmere value chains in India are unorganized and expensive in time (long process durations) and productivity (low outputs) as they are heavily dependent on the manual operations. The traditional operations reflect on the socio-cultural aspects and economic importance of the cashmere industry in the region representing traditional and historical dimensions of the operations (referred as *cashmerity*). These chains operate under a hierarchical structure which is primarily governed by the manufacturer and/or retailer who identify and select the artisans of their choice based on the product requirements. Therefore, the degree of coordination among the artisan categories in different stages of the operations is low. Furthermore, the traditional cashmere value chains operate under poor industry infrastructure which lacks adequate information sharing and logistical support for timely and adequate supply of the raw materials from the credible sourcing channels.

Recognised human know-how and skills are critical in the traditional hand-made products. Due to their stimulating properties, the products made from the traditional processes have acquired the prestige of being exclusive and are meant for the niche market predominately catering to the elite (Belletti *et al.*, 2017). To acquire a genuine cashmere product, the consumer may have to wait for months depending on the complexity of the product design, material requirements and other necessities associated with the production leading to increased expenses and long lead times. However, it can be argued that when resources are limited and the craftsmanship is at the focus of production (Jones & Jones, 2018), a niche consumer base would be willing to pay a premium for fewer, more durable products (Guercini & Ranfagni, 2013; Bocken & Short, 2016). Therefore, the market reach of the traditional chains is limited to a niche consumer base because of the relatively expensive products produced from the time consuming traditional manual operations.

7.2.2 Modern Chain

In comparison to the traditional cashmere value chains, the modern cashmere value chains have adopted a relatively new mechanism to reach out to a wider consumer base by providing less expensive and a wide range of affordable products. This approach is primarily attributed to the introduction of mechanised processes in the cashmere industry. The advent of mechanisation in various cashmere supply chain processes resulted in the modern chain operations which are cost effective, less time consuming and results in

increased productivity. At this stage, it is important to know that a portion of the modern supply chain is carried out covertly (fibre blending sources are unknown) and considered illegal (the use of mechanical equipment for spinning and weaving) by law. To meet the growing product demand, the manufacturers seldom get the genuine raw material in the desired quantities and, as a result, they are left with little choice but not to opt for the blended fibres for the manufacture. Blended fibres have also become a preferred option for the manufacturers because of its ease of availability and low cost. Fibre blending itself is not a bad option as it has been carried out on a large scale in the textile industry to improve functional properties of the products (Basu & Roy, 2008). Therefore, due to varied consumer preferences, different price-points and product categories (Khan, 2015), different fibre blending options opened a window of opportunity to tap into different markets through the modern cashmere chain operations. However, in this, spinning and weaving operations using mechanical mechanisms have led to the significant reduction in the production of the traditional handmade products. For instance, in comparison to the pre-mechanisation era i.e., prior to early 2000, the production of traditionally made cashmere articles have significantly declined (50,000 were produced annually; Ishrat et al, 2018) and has affected the livelihoods of more than 300,000 artisans and workers associated directly or indirectly with this industry (Sheikh, 2014).

For mass consumption and to meet the requirements of the wider markets, a range of product variants using mechanical processes has rapidly evolved in the cashmere industry. For mass-market consumers, the products are delivered readily at a significantly faster rate and at a lower cost. In this mechanism, the raw material (cashmere fibre) moves efficiently in the chain minimising the labour costs. Through this, mass-market consumers get numerable product options and have the choice to consider quantity over quality without realising the impact on social and environmental systems (Jones & Jones, 2018). Similar to the traditional chains, the modern chains function through a hierarchical structure dominated by the manufacturer and/or retailer. However, the level of information flow, availability of material and coordination among the stakeholders is high due to expenditure made on the infrastructure by the concerned chain actors.

7.2.3 Geographical Indication Based Chain

The third cashmere value chain is based on the requirements of Geographical Indication parameters. As per the cashmere GI requirements in India, the raw material must be procured from the *Changthangi* goat in Ladakh, yarn must be hand spun by Kashmiri women spinners and the traditional weaving using handlooms must be carried by the Kashmiri weavers. In the GI chain, remaining operations can be carried out based on the product requirements. However, due to the dominance of the modern chain, the GI value chain is severely limited in production and market reach. The GI based value chain encourages the use of advanced technology to determine the fibre composition in the finished product which is critical for product authenticity. In this regard, CDI facility at Srinagar has taken measures to introduce the state-of-the-art quality testing mechanisms to ensure the quality of cashmere products. It is important to understand how chain stakeholders respond to GI operations.

The findings captured the views of a range of cashmere chain stakeholders and highlights the difference of opinions expressed by the industry stakeholders (artisans and officials). Regarding non-GI chains (traditional and modern), artisans' views were diverse, multidimensional and primarily captured their economic and social conditions. However, for GI based chains, stakeholders share similar views regarding product quality and production practices to distinguish the identity of the product in the market. As observed during data collection, few artisans were aware of the initiatives taken by CDI in establishing the quality standards through GI to check fibre fineness and composition prior or after the manufacture. Regardless of their opinion or knowledge of the GI, the artisans conceptualise their traditional craft to create and sustain social relations embedded in temporal and spatial contexts (Bose, 2016). For artisans, skill acquisition is more than the physical embodiment and social connectedness (Marchand, 2010). Moreover, the artisans consider the protection of their craft through an assured mechanism as their right to have to earn a living from the specialised craft inherited from their forefathers (Bose, 2016) and approach it as a means of expression which attach them to their ancestral heritage, community and the region. Even though, GIs do not necessarily function as an environmental safeguard, but the GI chain encourages the use of natural resources. The GI products embodies a specific character of the traditional production approaches that are less permeable to modernisation (except for quality testing), promotes standardization of

processes and ensures a price premium which helps maintain environment friendly practices across the chain operations (Belletti *et al.*, 2017).

In the present scenario, among all three cashmere chains, modern chains are dominant in operations, have greater market reach and significantly affected the operations of the traditional and GI based chain operations in India. There are substantial differences between the value chains of GI and non-GI products (traditional and modern chain). The major distinction in the GI and non-GI chains lie in their structure, power balance and interdependence (Mena *et al.*, 2013). Another significant distinction in GI and non-GI (i.e., private trademarks) chains is regarding quality enforcement modes (Raynaud *et al.*, 2005). However, in some instances, manufacturers use their own trademarks along with the GI logo resulting in co-branding (Fernández-Barcala *et al.*, 2017). In the non-GI supply chains, private trademarks are used to identify products and engage in private level of governance to manage supply chain processes and the stakeholders decide and manage their own relationships and transactions. Whereas in GI chains, institutional involvement through governing and regulatory bodies for the regulation and control of supply chain activities is carried out at the public level of governance (Fernández-Barcala *et al.*, 2017). The governing entity is an important player in GI mechanism. Therefore, the challenge of GI chains is to preserve ‘territorial linkage and traditional production while assuring quality to consumers’ (Fernández-Barcala *et al.*, 2017).

Developments and changes in industries is a continuing process. As a result, value chains change over time and its effect on the chain processes and worker communities is inevitable. Findings indicate that cashmere value chains are diverse and have evolved considerably due to process innovations leading to new product designs. In cashmere industry operations, the changes in India have taken place over the last two decades, but due to lack of literature on this it is impractical to provide the specific dates for the changes that have taken place in the industry such as the mechanisation of the cashmere processes or to pinpoint the effect of globalisation in the traditional cashmere processes. Over the years, the cashmere chains impact and are impacted by the market trends, industrial developments and institutional policies.

To capture the effect of the industry changes on the traditional and modern cashmere value chains, a summary of the trade-off of the cashmere industry practices is presented in Table 7.1.

Table 7.1 A trade-off summary of the traditional and modern cashmere value chains.

Stage	Stakeholder/Process	Aspect	Cashmere value chains		Effect of the shift from the traditional to modern practices	
			<i>Traditional</i>	<i>Modern</i>	<i>Advantage</i>	<i>Disadvantage</i>
Fibre Procurement	Supplier (S)	No. of supply sources	Limited	Multiple	M and AHL	Sp, and THL
		Volume of raw material	Low	High	M, AHL	Sp. and THL
		Supply frequency	Once a year	All the year	M	-
		Type of raw material	Pure	Blended	M	AHL and THL
Fibre Processing	Dehairing	Processing Time	High	Low	M	-
		Volume	Low	High	M	-
		Quality	High	Low	M	Consumer
Transformation	Spinner (Sp)	Processing Time	High	Low	M	THL, AHL, M
		Volume	Low	High	THL, AHL, M	-
		Wages	Low	Low	M	Sp.
	Dyer (D)	Use of synthetic dyes	Low	High	M, Consumer	-
		Wages	Low	High	D	M
	Weaver: Traditional (THL) Advanced (AHL)	Processing Time	High	Low	M, Consumer	-
		Use of blended fibres	Low	High	M	Sp.
		Product volume	Low	High	M	AHL and THL
		Wages	High	Low	M	AHL and THL
	Washing (W)	Volume of work	Low	High	AHL, THL, E	Environment
Water disposal mechanism		Non-existent	Non-existent		Environment	
Embroider (E)	Wages	High	Low	M	E	
	Volume of work	High	Low	-	E	
Product Labelling	Manufacturer (M)	Major consideration	Time	Cost	Sp., AHL, THL	Consumer
		Profit margin	Low	High	M	AHL, THL, Consumer
	Retailer (R)	Types of consumers	Domestic	Global	R, M, AHL, THL	-
		Product differentiation	Less	More	M, R	AHL, THL, E
Consumers		Product availability	Less	More	Consumer	-
		Product awareness	Less	More	Consumer	M, R

In the context of cashmere industry in India, the changes that have taken place has far-reaching implications for the sustainability of the artisans, cashmere craft (processes and products) and ecology of the region. These aspects are discussed in the following sections in detail.

7.3 Product Quality

7.3.1 Procurement perspective

In the cashmere industry, fibre softness – determined by the fibre diameter – is one of the significant criteria to determine product fineness. Also, purity of the fibre i.e., not blending it with any other fibre(s) is an important factor in the luxury fashion industry to certify product authenticity. At times, the scarcity of the raw material leads to the adulteration of fibre and mislabelling of cashmere products (Kumar *et al.*, 2015). As observed from the findings, at the procurement stage, a vivid difference by the manual inspection cannot be observed between the pure and blended fibres. During manufacture, the artisans such as the spinners and weavers are unsure of the raw material used for processing the cashmere product. Even the experienced artisans working in the industry for decades would not be able to clearly distinguish between the genuine and blended cashmere fibres with the traditional (manual) testing approaches. The current inconsistent and insufficient fibre identification practices indicate that artisans' judgement and experience take precedence over the fibre testing mechanisms leading to the lack of confidence on product genuineness. The lack of quality testing mechanism upstream in the supply chain have significant ripple effects across various downstream value chain operations. This aspect can be expensive to the extent that it may lead to consumer dissatisfaction and tarnish the brand image. Therefore, quantitative mechanisms are essential to ensure the quality of cashmere products through a variety of methods such as DNA sequencing, chemical-staining approach and other techniques adopted at various stages of the manufacture (Ammayappan *et al.*, 2011). Figure 7.1 (Raja *et al.*, 2011; Bumla *et al.*, 2012; Raja *et al.*, 2013), highlights the significance to have a scientific mechanism to assess the quality of the product across different value chain processes. Scanning Electron Microscope (SEM) images presented in Figure 7.1 capture the difference in quality due to the industry changes (mechanization of the processes and use of blended fibres) across three cashmere value chain processes i.e, dehairing, spinning and weaving.

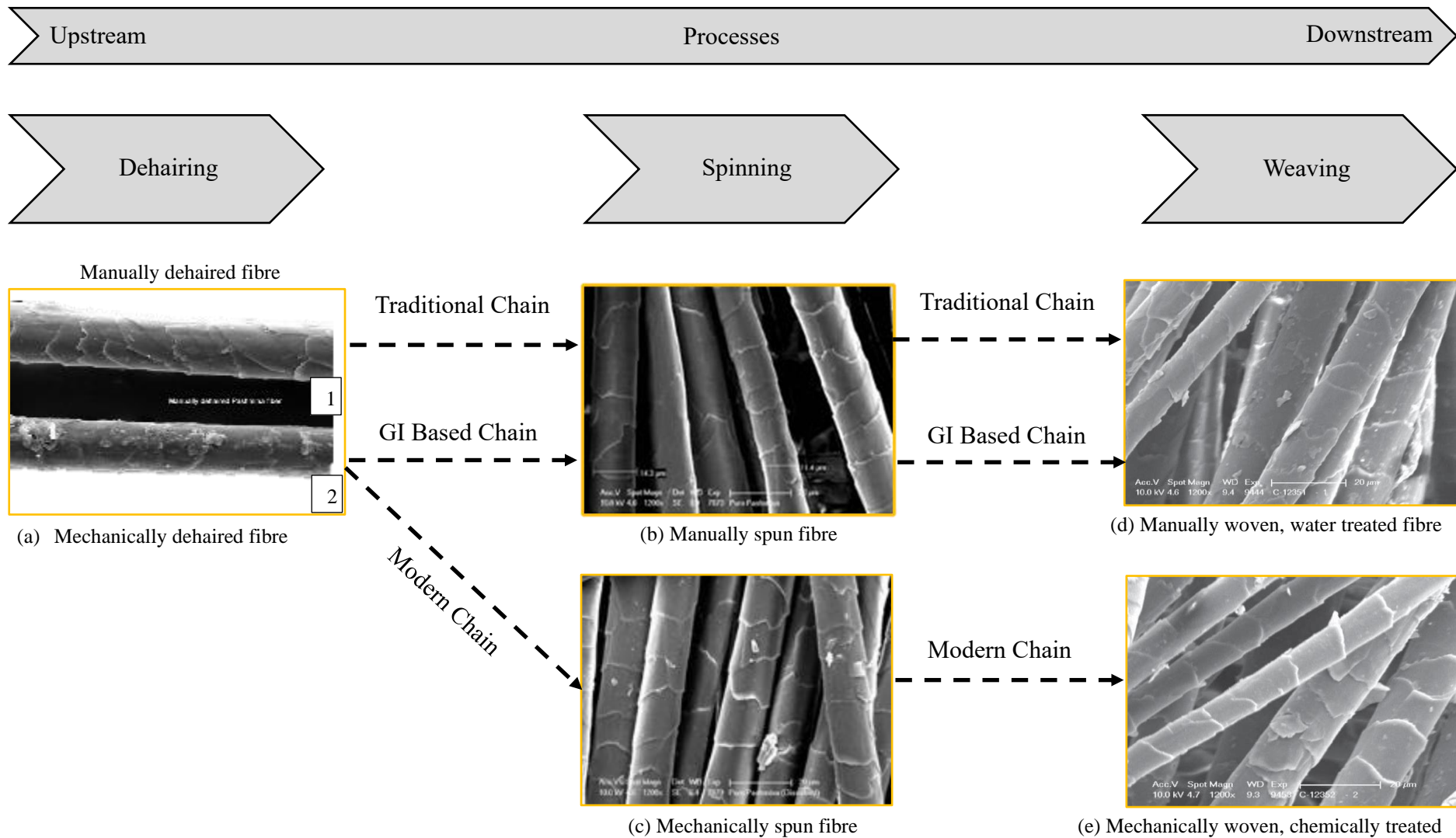


Figure 7.1 SEM (x1200) representation of the impact of industry practices on the cashmere supply chain processes

7.3.2 Spinning and Weaving perspective

The traditional and GI based chains are similar in many aspects such as dehairing, spinning and weaving which is carried out through manual processing. The major distinction between these two chains is regarding the labelling approach used in the products. Whereas the modern chains are primarily based on the mechanised processes especially in the dehairing, spinning and weaving stages of the product manufacture.

As evident from Figure 7.1 a2, mechanically dehaired fibre results in reduced fibre strength since it damages the structure of the fibre follicle. The damaged fibre affects the product longevity as compared to the products which are made from manual dehairing processes. Similarly, in the spinning process, mechanically processed fibre loses its tenacity and deteriorates the fibre strength (Figure 7.1 c). Also, the chemical treatment of the blended fibre using HCl/H₂SO₄ (Figure 7.1 e) adversely impacts the fibre which further downgrades its natural properties effecting the final product. For instance, cashmere products such as shawls and stoles which are made from manually: dehaired (Figure 7.1 a1), spun (Figure 7.1 b) and woven (Figure 7.1 d) processes last for decades. However, products made from the blended fibres are not as durable due to the mechanical processing and the chemical treatment the blended fibre goes through. Due to this, the quality (durability) of *Kashmiri* shawls severely gets affected as the shawls made through mechanical processes reach their end-of-life in fewer years of use. As evident from Figure 7.1, the lack of distinction, unless known scientifically, between genuine and adulterated fibre in the processes leads to the quality issues. Moreover, it is important to know that there is a knock-on effect of using the blended fibres and mechanised processes which escalates downstream the chain resulting in inferior product quality. Unknown fibre blends and their composition is a major issue in the industry which not only effects the product quality but also leads to trust issues in the chain (Ashraf *et al.*, 2016; Ishrat *et al.*, 2020).

The cashmere value chain processes are susceptible to procurement, quality and sustainability risks and influence the cashmere chains in many ways. For instance, the impact of blended raw material is not confined only to the product quality but stretches further beyond to affect the social, environmental, and financial aspects related with the cashmere value chain operations. The study findings highlight the expensiveness (time and cost), quality and sustainability issues in the chain processes indicating that improvements through standardisation are required at the process level. The expensiveness and

inefficiencies in different processes of the cashmere supply value such as procurement issues can be addressed by categorising the manual and mechanical dehairing practices. Similarly, concerns related with spinning and weaving processes can be tackled by acknowledging manual and mechanised processing styles across the industry. Therefore, for sustainable cashmere value chains, a holistic approach considering productivity, efficiency and financial viability for the involved stakeholders needs to be considered.

7.3.3 Consumers' perspective

Consumers from different economic strata use cashmere products depending on their preference on product quality (reliability, durability & aesthetics; Garvin's (1987) dimension of quality and price. Findings suggest that cashmere luxury markets can be broadly classified into accessible, aspirational and absolute luxury (Castelli & Sianesi, 2015; Brun & Moretto, 2014). Similarly, based on consumers' preference, cashmere consumers can be classified in different categories such as cashmere admirers, value seekers and those who are influenced with fashion trends (Faust, 2013). Cashmere admirers are concerned not only with the product but also assign importance to the practices adopted during the product manufacture. Value seekers focus on the price as opposed to any other aspect of the cashmere article as this category seeks best possible return from their purchase. Another category of cashmere consumers opts for cashmere products simply to follow the fashion trends. Consumers from these three categories purchase cashmere articles from select retailers since not many retail outlets sell due to the exclusivity associated with the cashmere products.

Based on the market survey (Table 4.8) conducted in this research, among all cashmere products; shawls, scarves, stoles and sweaters are the most sought-after commodity among the consumers in India and in other overseas markets (Figure 4.28). The findings indicate that, handmade cashmere shawls are recognized and appreciated globally and are considered as the most profitable proposition for the manufacturers and artisans alike. There are different types of handmade shawls made through various embroidery styles such as *Kani*, *Sozani*, *Kanizamar* (Shakyawar *et al.*, 2013). These handmade articles, if taken care of well, last more than two decades (Bumla *et al.*, 2012) and later used as antiques and souvenirs for future generations. To understand the effect of the industry changes in the cashmere value chain operations in detail, an illustration of the cashmere chain operations is presented in Figure 7.2 (Ishrat *et al.*, 2020) considering the two broad layers; cashmere processes (CP) and Institutional Support (IS).

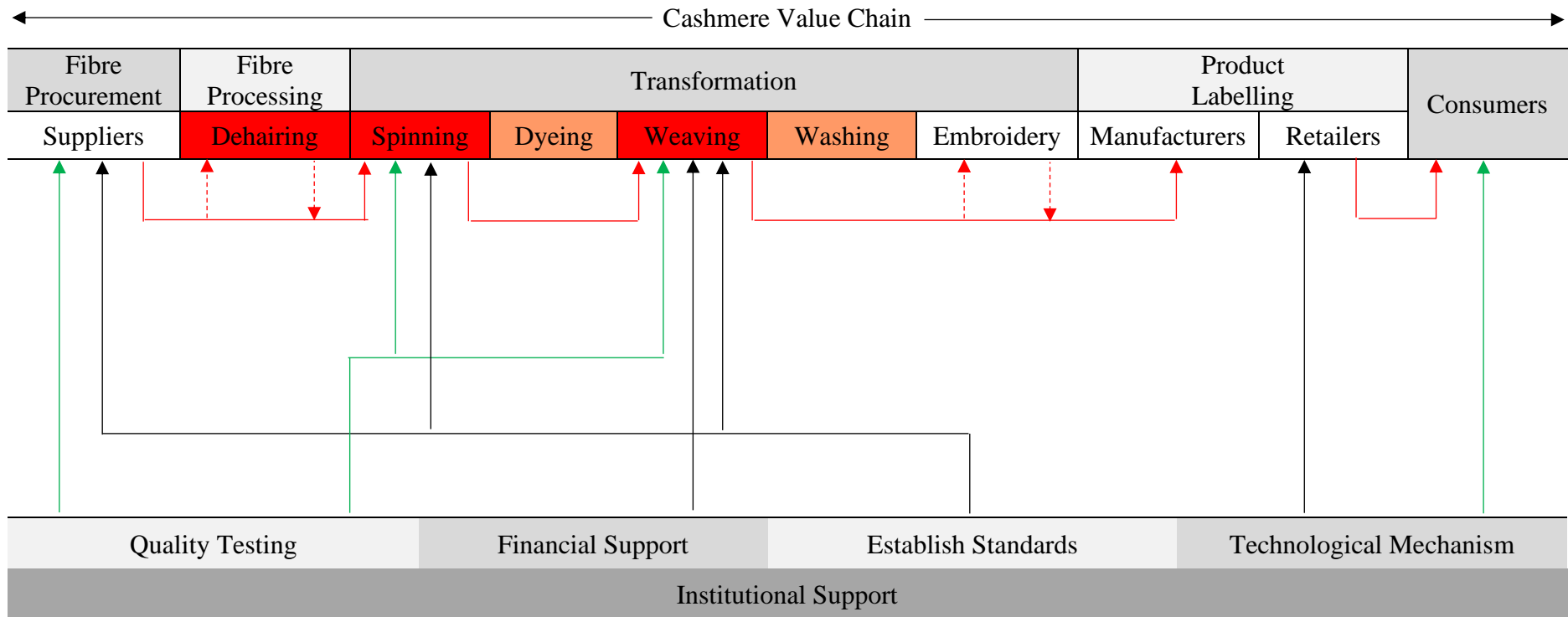


Figure 7.2 An overview of the cashmere value chain capturing the effect of industry changes

The first layer (CP) consists of majorly affected cashmere processes (shown in red) whereas the second layer (IS) captures the support provided by various government institutions across different cashmere value chain operations. The first layer captures the issues which propagate through sequential processes and influence; social, economic and environmental sustainability aspects in the chain. The second layer (IS) represents the initiatives taken and the support provided by various government institutions to different stakeholders in the chain. The two layers representing cashmere processes and institutional support are connected through color-coded arrows to represent their relationships and the effect they have on the cashmere chain operations. Through this, an in-depth scrutiny of the shift in the industry practices and its implications in the cashmere value chains is discussed.

7.4 Processes

In Figure 7.2, the red arcs indicate the adverse effect of the changes in the cashmere industry practices such as the advent of mechanisation, use of blended fibres, exposure to wider markets and lack of quality standards and their impact on the operations including fibre dehairing (Bumla *et al.*, 2012), yarn spinning (Raja *et al.*, 2013) and fabric weaving (Raja *et al.*, 2011, Bumla *et al.*, 2012).

7.4.1 Procurement and Processing

At this stage, it is important to re-iterate that cashmere fibre is harvested naturally from the goat and not produced through mechanical processes. At the procurement stage, in the continuum of fibre genuineness, there are two extreme aspects prevalent in the cashmere supply chain operations i.e., the use of blended fibres and pure cashmere fibre. In the upstream chain operations such as fibre procurement, the solid red arc represents fibre concerns. Due to the emergence of various raw material procurement channels and the lack of access and/or availability of the genuine raw material, the traditional supply chain processes are adversely affected. For instance, in the fibre procurement stage, unknown raw material or adulterated cashmere fibre does not indicate the composition of the raw material i.e, it is largely uncertain whether the cashmere fibre used in the subsequent manufacturing stages is pure or blended with other fibres. For authenticity, if the fibre is blended, then the composition of the blend is expected to be known at the time of fibre procurement, manufacture and product purchase since the blended fibres compromise on the physical properties of the yarn affecting the product quality (reliability and durability).

On the other side of the continuum, the pure cashmere fibres used in the processes are natural and environmentally friendly. The consumers are now conscious about eco-friendly and recyclable products; and for this reason, in the luxury fashion industry products made from the natural and biodegradable fibres are preferred (Debnath, 2016). To produce sustainable luxury apparel products, the fibre and the production process needs to be eco-friendly; and equally important, the final product needs to be free from the synthetic materials (Debnath, 2016). Therefore, for ecological considerations, it is required to advocate the usage of natural fibres and contribute towards establishing a sustainable mechanism at the procurement stages of the cashmere industry. However, from the perspective of achieving mass scale production for a wide range of products, it can be argued that the use of blended fibres is required to capture varied market requirements. This aspect is further strengthened with the unavailability of the genuine raw material in the desired quantities.

To address the issue of scarce availability of raw cashmere fibre and its high price, cashmere goat cloning attempts have been made to increase the availability of the genuine cashmere fibre. Regarding cloning of the goat, a groundbreaking effort was carried out by the Sher-e-Kashmir University of Agricultural Sciences and Technology (SKAUST) wherein a clone of the pashmina goat known as '*Noori*' was developed and raised in Srinagar. Later on, the cashmere fibre extracted from the cloned goat was tested in the labs and compared against the industry standards. Unfortunately, the fibre quality of *Noori* was found coarse and not appropriate enough to replace the fibre extracted from the cashmere goat of *Changthang* in Ladakh. Also, attempts were made to domesticate the cashmere goat in the Kashmir valley, which is located at lower altitude than the natural habitat (Ladakh) of this special goat (*Capra hircus*) breed. Due to heat and pollution, the results of cloning were not encouraging since the goat needs conducive environment to survive including higher altitude and the cold weather to provide best possible yield. Similarly, in the fibre processing stage, the solid red arc indicates the use of blended fibres in the value chain operations. Whereas, the dashed red arcs represent the effect on the dehairing process depending on whether the process is carried out manually (traditional chain and GI based chain operations) or through the mechanical process (modern chain operations). Nevertheless, use of the blended fibres and their impact on the cashmere supply chain operations are acknowledged and raises concerns among the industry practitioners.

7.4.2 Transformation

In the throughput stage, due to the mechanisation of processes and the use of blended fibres, one of the most affected cashmere processes is spinning. In Figure 7.2, this is indicated by red arcs. Manual spinning is a time-consuming process and, at times results in inconsistent outputs. To overcome these concerns, the widespread use of the mechanised processes for spinning the yarn is carried out. The use of synthetic cashmere yarn negatively affects the spinning community which is predominantly comprised of the women spinners. Also, the detrimental effect of the use of the blended fibres is evident on the quality of the finished product. On the contrary, the positive effect of using the mechanically spun yarn is experienced during the weaving process where the weaver finds it helpful to work with the less fragile blended yarn. Similar to spinning, mechanised processes are introduced in the traditional weaving operations by defying the legalities surrounding the production of cashmere articles. Due to this, illegal manufacturing hubs have evolved in and outside the Kashmir region. As represented by the red arcs, this led to the decrease in the number of handlooms and affected thousands of weavers who have protested the mechanisation of the traditional cashmere processes. Irrespective of the adverse impact of mechanised weaving, the use of mechanical processes has increased the productivity, made processing easy and led to efficient mass scale production. Also, due to mechanised weaving, new product designs have evolved catering to the needs of various luxury markets.

There is a section of cashmere industry stakeholders who consider that, for cashmere processing, the mechanized processes and handlooms can operate parallelly to cater to the needs of diverse market segments. They argue that with mechanization, processes such as fibre blending, spinning and weaving is considerably faster and leads to mass scale production of a range of products (Figure 4.28). However, this view encourages the legitimization of the use of mechanized processes to make the cashmere products and it contradicts with the Handlooms Act 1985 which prohibits the use of the mechanical intervention in lieu of the handlooms (Appendix K). Moreover, mechanization of processes will further marginalize the vulnerable artisan communities who do not have sufficient resources or financial means to combat with the strong lobby of the power loom operators. Therefore, the prevalent operations in the modern chains are subject to further deliberations from the cashmere industry stakeholders especially among the policy makers and the decision-making authorities to address the factors (results) presented in Chapters five and six.

7.4.3 Environmental Concerns

In supply chain operations, stakeholders such as customers and legislation bodies demand increasing environmental, social and financial sustainability considerations through responsible management of resources and processes (Bastas & Liyanage, 2018). In the cashmere industry, considerable environmental degradation takes place. Due to the surge in productivity (through mechanized processes) of cashmere products, the impact of the increased processing has detrimental effect on the environment. It is important to know that, on the contrary, not only has the handloom industry been one of the most significant contributors for employment and revenue generation in the region, but it also has no adverse impact on the environment and to a large extent, promote cleaner production. Handlooms consume significantly low energy than power looms and other mechanical processes (Ahmad & Nengroo, 2013). During the field trip, it was reported by the respondents, more specifically the weavers, that weaving carried out on the mechanised processes consume significant amount of non-renewable energy leading to serious environmental concerns. Power supply in the region is a recurrent issue, therefore, the mechanised processes are operated through diesel-operated generators which emit toxins in the environment and leaves a carbon footprint. Initiatives across a range of different industries have been taken to address the environmental concerns and to advocate for the sustainable operations (Zhu & Sarkis, 2004; Zhu *et al.*, 2007). Similar efforts are required in the cashmere industry operations.

Furthermore, the effect of mass scale production is also observed on dyeing and washing processes (Temani *et al.*, 2011). For dyeing the yarn, there is a range of dyeing options available. Natural dyes are expensive and moderate in fastness (Umbreen *et al.*, 2008). This aspect of natural dyes may make them less attractive for large scale operations. As a result, various chemical or synthetic dyes have replaced the natural dyes to lower the costs associated with this process (Sheikh, 2014). However, in recent years, environmental awareness, has attracted the attention of manufacturers (Geelani *et al.*, 2016). Still, rarely, natural dyes are preferred over the synthetic ones (Patchaiyappan & Yogamoorthi, 2014). Moreover, the persistent use of synthetic dyes results in carcinogenic effects (Kulkarni *et al.*, 2011), toxic discharge (Padmavathy *et al.*, 2003), water contamination (Prado *et al.*, 2004) and have detrimental effects on the ecology and human health. In developing countries, due to lack of appropriate mechanisms, such processes result in wastewater containing more than 70 toxic chemicals which flow in the nearby streams or rivers (Choi & Cai, 2018). Therefore, the policy makers and government institutions are required to react to these environmental

concerns and take appropriate measures for sustainable cashmere supply chains.

The surge of modern value chains results in environmental issues, however, due to the lack of stringent policies and implementation mechanisms, the industrial waste and carbon emissions are not captured across different modern value chain processes. For instance, for almost all blended fibres, an extensive chemical dissolution process is used to eliminate fibres from the cashmere fibre (Raja *et al.*, 2011; Raja *et al.*, 2013). Through this process, the blended fibres are made to look like the natural cashmere fibre. Therefore, to address these aspects, investment in environmental management systems and pollution control mechanism is required (Awaysheh & Klassen, 2010; Delmas & Montiel, 2009) to reduce wastewater (Kocabas *et al.*, 2009; Vajnhandl & Vahl, 2014) pollution and carbon emissions (Rao & Holt, 2005). To address environment sustainability concerns in the cashmere industry, recycling of cashmere products is an evolving concept and provides a new dimension to cashmere value chains. In extant literature, not much attention is given on this critical aspect of the luxury apparel chains. One of the reasons for the lack of recycling considerations is due to the likelihood of a compromised cashmere fibre quality in producing luxury products (Ashraf *et al.*, 2016). The significance of CSR in the textile industry have led to the emergence of recycling initiatives (Wiengarten *et al.*, 2017). In luxury apparel operations, few brands provide recycling opportunities through their product take-back mechanism. However, such efforts are limited. To explore recycling possibilities across different cashmere value chain operations, more attention from the researchers and industry practitioners is required (Isirat *et al.*, 2018). In summary, as evident from Figure 7.2, the current cashmere industry practices not only impacted the physical and mechanical properties of the cashmere yarn but also affected the product quality and resulted in environmental issues.

7.4.4 Product Labelling

In cashmere value chains, cashmere products cover a unique and long journey which is susceptible to industry changes. The findings indicate that the artisans in the cashmere supply chains are aware of the extensive use of the blended fibres in different processes and speak openly about it among themselves. However, when dealing with consumers, the artisans often deny or refuse to acknowledge that they deal with any aspect related with the mechanised processes. This breeds to mistrust between the consumers and artisans since consumers are aware of the imitations available in the marketplace. Trust is an integral part of the cashmere industry. Especially, for consumers this aspect is even more critical to have confidence in the

authenticity of the product. In this, cashmere retailers, especially the physical retail outlets play important role in establishing the *true value* of the product to the consumer since they are the direct source of delivering the product information to the end user. The *true value* can be ascertained by the consumer if the labels provide sufficient and correct information about the product journey through fibre; composition, texture and processing related aspects in the finished cashmere article. Ironically, majority of the labels in the cashmere industry do not provide such information in the cashmere article depriving the consumers from assessing the *true value* of their purchase. In the cashmere industry, the labels do not follow any standard approach or structure resulting in ambiguous labels across the industry. Also, the labelling aspects are not streamlined and susceptible to ethical risks including animal rights, trademark, branding and counterfeiting issues (Ishrat *et al.*, 2018). Among these risks, counterfeiting is one of the major concerns in the cashmere industry.

Globally more than three-fourths of the counterfeit luxury products (including non-apparel products) originate from China (Chaudhry & Zimmerman, 2009) since the anti-counterfeiting regulations in China are not enforced stringently (Chaudhry & Stumpf, 2011). Also, in the UK from 1995 to 2006, between 35% to approximately 70% of fashion garments were found with inappropriate labelling (Lakshmanan *et al.*, 2016). Similarly, in India, there is a lack of policy implementation in the context of implementing laws regarding cashmere to protect the craft from fake imitations and counterfeit products. In general, counterfeit products result in tangible losses, such as job loss, low sales volumes and lost custom duties whereas, the intangible and perhaps the more significant aspect is the brand dilution of the entity (Chaudhry & Zimmerman, 2009; Staake *et al.*, 2009; Phau *et al.*, 2009). However, purchasing counterfeit products not only result in lower quality products but also may deprive the consumers from product guarantees and warranties (Wilcock & Boys, 2014). Furthermore, Wilke and Zaichkowsky (1999) argues that purchasing counterfeit products can reduce the rarity and exclusivity of genuine products and thereby diminishes consumers' willingness to buy authentic articles effecting the chain operations of the genuine articles. In luxury apparel chains, among other strategies, counterfeiting issues can be addressed by using 'high tech' tags and labels as a part of their approach to achieve quality (Wilcock & Boys, 2014).

Equally importantly, due to the consumers' lack of ethical concerns, it can also be inferred that the purchase of counterfeit products also encourages the owners of the counterfeit companies, who mostly do not adhere to labour welfare laws and worker's rights, to exploit their workforce since employees working in such firms often are not paid fair wages and work

for long hours under unsafe environments (Wilcock & Boys, 2014). In the traditional cashmere industry, the human contribution (experience and expertise) is significant in generating value in the cashmere industry but is seldom considered or appreciated in their wages (Ishrat et al, 2020). To fully understand the phenomenon of cashmere, it is imperative for researchers to consider these aspects. Nevertheless, worker issues also need attention since there are numerous instances of exploitation reported over time (Dybicz, 2004). Due to the fast fashion behaviour from the consumers, exploitation of resources and people across the supply chain operations are rampant in the apparel industry (Ertekin & Atik, 2015; Ertekin & Atik, 2020). The Rana Plaza tragedy in Bangladesh highlights these concerns (Shah *et al.*, 2021).

To address the aspects covered in the earlier sections of the chapter, Geographical Indication label was introduced to ensure the authenticity of the cashmere products. GI labelling is an authentic globally recognised quality assured mechanism to differentiate among genuine cashmere products and its imitations. There is a significant scope in producing GI based articles since there is a considerable degree of trust associated throughout the GI labelling process. Therefore, to ensure the authenticity of the cashmere product, GI classification is based on fibre harvesting (origin and fineness), spinning and weaving aspects capturing the major cashmere value chain stages (Quality Manual). Variations in these stages significantly influence the value of the product and provides an opportunity for malpractice across different cashmere processes. Embedding GI and conforming to the standards in the cashmere supply chain processes is likely to positively affect the actors and the craft. A distinction in the labelling of genuine traditionally made cashmere products (through GI) and the ones made on the mechanised processes (other labels) can be a way forward to address the issues prevalent in the cashmere industry. Within these classifications, '*Kashmir Pashmina*' GI mark may be considered either as a stepping-stone to streamline the traditional cashmere processes or as a last-ditch effort to save the industry severely impacted by the dearth of labelling standards across a range of processes involved with cashmere manufacturing.

There are a few limitations surrounding the GI label. In the traditional cashmere industry, the manufacturer places their own label on the article, if any, and sells it in the local markets. However, for regional or international clients they are dependent on other retailers or brands who, in turn, place their own established labels to capture a wider consumer base. For these manufacturers and retailers, on one hand the institutional support through quality testing and GI labelling provides credibility to their products but at the same time these stakeholders are

apprehensive that the GI labels would lead to the dilution of their existing brands. As a result, the response to ‘*Kashmir Pashmina*’ GI labelling initiatives is limited. Based on the findings, it is observed that some manufacturers who are involved with the traditional cashmere craft are considering complying with GI labelling and are responding to the institutional efforts. Therefore, considering the industry changes and sustainability aspects covered in the earlier sections, through policy making, institutional support needs to be established through financial and logistical means for various stakeholders in the chain at different levels to encourage them to confine to the GI standards.

7.5 Artisan communities

In this section, socio-economic effects regarding the artisan communities in the changed industrial context is presented.

7.5.1 Economic Aspects

Prior to the changes in the cashmere industry, for artisans, the major source of income generation was from manually carrying out their respective tasks such as spinning the yarn and weaving cashmere articles on the handlooms. Due to the advent of mechanisation, the mass scale production has resulted in the lack of work opportunities for the artisan communities. Among all artisans, with the industry changes, the two most significantly affected artisan communities are women spinners and weavers. Cashmere industry artisans, especially the spinners and weavers are one of the most significant artisan categories in the cashmere value chains (Yaqoob *et al.*, 2012; Ishrat *et al.*, 2020).

First, under the present-day work environment in the cashmere industry, women spinners are hit hard. Based on the findings, it can be ascertained that to cater to the growing market needs of less expensive cashmere products (accessible luxury), the manufacturers who are dealing with large volumes of cashmere products, get the yarn made from the mechanized processes. The manufacturers directly get the yarn from these channels and provide it to the weavers leaving little role for the women spinners in the cashmere industry. For manufacturers, pure cashmere fiber is expensive to procure due to shortage of supply as opposed to the blended fiber which, unlike pure cashmere fibers, can be used on the mechanized processes and is available readily. As a result, in many instances, manufacturers deliberately opt for the blended fiber to cut down the operational costs and to achieve smooth flow of operations. This leaves women spinners out of work; ultimately affecting their livelihood. Also, by skipping

the manual spinning process, manufacturers save money and get large volumes of spun cashmere yarn (mostly blended though) in relatively shorter time frames. These operations correspond to the modern cashmere supply chains in which the growing involvement of mechanised processes has made the women spinners almost redundant from the operations. Due to the lack of spinning opportunities, women spinners are struggling to get spinning jobs and not able to contribute monetarily to achieve the financial goals for their family. Similarly, for weavers, due to mechanised weaving processes, work opportunities on the handlooms are diminishing leading to unemployment.

The second reason for the financial hardship among the artisan communities is ascribed to the industry wage structure which has been the same for the past few decades. Arguably, manual process to produce cashmere articles are time-consuming and expensive. The findings indicate that often artisans feel that their hard work is not reflected in their wages leading to dissatisfaction among the artisan communities. Due to the lack of mechanism to assess appropriate wages or the economic value of the efforts of the artisans, it is difficult to estimate basic wage or the range of monetary amounts acceptable to the artisans for their skill set, time and efforts required to produce a cashmere article. The advent of mechanisation in the cashmere industry further weakens the ground for the artisans as they are not able to negotiate terms and conditions with the manufacturers to revise their wage structure. It can be argued that, in an industry which is growing, includes a range of products and reaching out to the markets beyond its conventional territories, there is little reason not to redefine the wage structure to one of the most significant contributors of the value chain i.e, the artisans. In the cashmere industry, the lack of *skill-and-experience* based wage structure is an issue that requires attention from the industry operators and the policy makers. Ideally, the classification and significance of the artisans' roles may help establish the wage structure in the cashmere industry. However, there is not much evidence in the literature that suggests that any such practice conforming to the wage prescription exists in the luxury fashion industry in the developing economies.

Third reason for the financial problems of the artisans can be ascribed to the emergence of the new entrants in the cashmere industry. The new entrants, based on their skillset, carry out the tasks as their side business. The new entrants have limited experience or no expertise in the cashmere processes since their primary source of income is generated from other avenues. The new entrants in the cashmere industry have diluted the wage structure for the already struggling artisanal communities who are willing to take up any work opportunity that they come across

in the industry which is bearing the brunt from the industry changes such as the mechanisation of cashmere processes. Traditionally, the artisans rely on the word-of-mouth recommendations relying on their social capital to generate work opportunities for themselves. In this, often, the artisans have to carry out the tasks at lower wages or accomplish it at a short notice to oblige and maintain their social relationships. Even though, sometimes it results in the exploitation of the artisans, however, through this the artisans expect to get work in the future using the social channel they are part of which include cashmere artisans from similar and different processes. Another reason is the delayed payments from the manufactures which contributes to the financial issues of various artisan communities. Artisans are also dissatisfied with the current state of profit sharing in the industry as they believe that the strong actors in the chain, especially those who own retail outlets such as showrooms and export cashmere articles to different parts of India and overseas are the actual beneficiaries. The emergence of different luxury markets and the influence of consumers on the retail apparel industry is significant, and over the years, a considerable shift and emphasis towards retailing operations is observed globally. It can be argued that the manufactures and the retailers are the major beneficiaries since they have the means and access to the channels to market their products for a broader clientele by risking significant amount of capital in the luxury commodity business.

7.5.2 Social Issues

For the reasons discussed in Section 7.5.1, the artisans are abandoning the centuries old traditional craft and opting for the other sources of revenue generation as they find it challenging to continue with their professions to sustain themselves. However, artisans face severe limitations in switching to other jobs for few reasons. It is important to know that most of the artisans associated with the cashmere industry are not educated formally and many belong to the lower strata of the society. Despite the willingness of the artisans to search for the other means of revenue generation, it leaves them with little choice but to opt for unskilled or menial jobs, if they get any. Among the artisan categories, women artisans who are more vulnerable than the other affected class of the artisans such as weavers; in the event of not getting spinning opportunities, are left with barely any other option but to abandon their unique craft and stay at home.

Tradition plays a significant role in the *Kashmiri* society and is one of the key influencers in the cashmere industry in India. Tradition is formed from the beliefs and values instilled in an individual based on their religious orientation and social and cultural upbringing. Due to these reasons, majority of the women of the region prefer not to venture outside their homes to seek

job opportunities. Through spinning, women not only contribute financially but also carry forward the legacy of their craft and pass it on to the next generation of spinners. However, for the younger generation of women spinners, there are options to learn an alternate craft or pursue another profession. Arguably, the traditional cashmere industry could have been a potential source of revenue generation for these youth. On the contrary, the effect of the industry changes in different cashmere processes have largely deprived the youth of the region to consider the option their ancestors had practiced for centuries. As a result, the younger generation who are formally educated are not interested in pursuing the centuries old craft but rather seem interested getting into other jobs to secure their future elsewhere. Whereas, for the elderly women who have spent all their lives spinning the yarn it is almost non-negotiable to consider switching to other vocations to earn their livelihood.

Therefore, for a significant native artisan population of the region, the cashmere industry is a preferred and conducive option to earn sustenance. Also, despite the industry exposure and reach to wider markets, the artisanal communities struggle for their survival. Due to these reasons, the artisan communities have severely limited job opportunities elsewhere and feel marginalised in the society and hold the government institutions accountable for their plight for not acting accordingly to the industry changes.

On the contrary, the government officials stated that to overcome the issues and threats evolved from the industry changes, government institutions have taken steps and provided support to the affected artisanal communities. However, the views of the government officials on the support provided to the artisans differ from the experiences shared by the artisan communities. In the artisan community, there is a growing sense of mistrust towards the government institutions as these communities are being deprived of their traditional revenue generation due to the '*too-little-and-too-late*' intervention of the authorities. The findings suggest that the outcome of the governmental efforts has not resulted in sustainable livelihood opportunities for the artisans. A livelihood is sustainable if it can absorb the stresses of the change, be able to maintain the assets and the capabilities of the sources of livelihood generation. Maintaining and improving the standard of living is another determinant of a sustainable livelihood without compromising on natural resources (Allison & Horemans, 2006). With the increasing uncertainty in generating the livelihood, there are health issues observed among the artisan communities due to the stress they find themselves under.

Marginalisation of cashmere artisanal communities is not a mere difference of opinions expressed by the two major stakeholder categories (artisans and government institutions) of the chain. Their contrary viewpoints reflect on the complex functioning of the industry which, in one aspect, is expanding to newer and wider markets and on the other hand is struggling for its survival to continue the traditional approaches to cater to the needs of its traditional consumer base. It can be argued that, for market expansion, the increase in production using mechanised processes will provide more opportunities to certain artisan communities such as dyers, washermen, embroiders since these professions are not as much impacted by the mechanical intervention or with the use of blended fibres as spinning and weaving do. For short-term gains, catering to the needs of the wider market segments through the products made from the non-traditional approaches may appear to be a lucrative proposition for the industry. However, this approach in the cashmere industry, at the expense of risking the livelihoods of the two most significant artisanal communities (spinners and weavers) which employs thousands of artisans, would be detrimental. Therefore, in the absence of appropriate institutional intervention and support and the lack of policy to integrate traditional and emerging global markets will further lead to the exploitation and marginalisation of the affected artisan communities. In other words, spinners and weavers are the backbone of the traditional and GI based cashmere value chains and due to the adverse effect of the industry changes on these artisanal communities, the two significant cashmere value chains run the risk of being non-functional.

Among the artisan categories, there is a communal awareness of the issues prevalent in the industry, however there is a lack of collective action to counter the reasons that affects them. In the absence of an effective trade union or a strong association of cashmere artisans who can represent the issues of the artisans to the powerful stakeholders of the chain, the artisans have resigned to the fact that there can be improvements in their situation. Their assertion is strengthened by the lack of bureaucratic and institutional efforts in dealing with the existing illegal practices (operating covertly) such as mechanisation of spinning and weaving in the industry. Therefore, to deal with their concerns with manufacturers and/or retailers, artisans attempt to address it on one-to-one basis knowing that there is little chance to bargain on any significant aspect such as increase in wages or on time payments. In most cases, the concerns of the artisanal communities are not recognised which further escalates the marginalisation of these vulnerable communities due to the increasing set of challenges they face from a multitude of dimensions discussed earlier in this chapter.

Table 7.2 Overview of the effect of industry changes on the cashmere value chains.

Cashmere Chain		Effect				
Stage	Aspect	Reason	Product Quality	Social	Economic	Environmental
Fibre Procurement	Dehairing	Mechanisation	x		x	
Fibre Processing	Blending	Mechanisation	x		x	x
Transformation	Spinning	Mechanisation, Innovation	x	x	x	
	Dyeing	Chemicals				x
	Weaving	Mechanisation, Innovation	x	x	x	x
	Washing	Water Outlets				x
Product Labelling		Standards	x		x	

7.6 Government Institutions

There are several institutions responsible for the development of cashmere craft in India. It is important to discuss the collective role of the institutions to address the challenges cashmere industry is facing. Through this, the gaps in the institutional support mechanism will be identified to ascertain a pathway for the policy making aspects surrounding the sustainable development of the cashmere industry.

7.6.1 Initiatives and their impact on the cashmere industry

Based on the research findings as discussed in Ishrat *et al.*, (2020), the green arcs in Figure 7.2 indicate the influence of the institutional initiatives to help the artisan communities across various chain stages. To revive and streamline the traditional cashmere industry practices, at the Crafts and Development Institute, entrepreneurial initiatives and educational programs at different levels (Diploma and Masters) are introduced to encourage the younger generation to be a part of their cultural heritage. In consultation with the experts from premier educational institutes in India such as Indian Institute of Technology (IIT), Indian Institute of Management (IIM) and National Institute of Design (NID) curriculum has been developed to educate the present generation of learners about the intricacies of establishing and managing a successful

entrepreneurial entity. Through different qualifications, technical aspects, nuances of the craft industry and business insights associated across the cashmere processes are covered to address the challenges of the industry.

The black arcs in Figure 7.2 denote both adverse and beneficial impact of the institutional support on various value chain aspects. This includes quality testing parameters, financial support, industry standards and technological mechanisms across fibre procurement, fibre processing, transformation and labelling stages of the cashmere operations. Artisan communities associated with spinning and weaving processes, manufacturers and retailers have mixed opinions on the provisions provided by the government institutions. Artisans are constrained with resources and are dependent to work either for the manufacturer or the middlemen. Therefore, to mitigate the prevailing wage problems in the industry and to encourage the artisans to continue to pursue the traditional cashmere craft, the government provides a financial loan of up to INR100,000 to help establish and/or to revive their practice. With the financial support, the weavers are encouraged to get back on their feet and to function independently. Artisans are the beneficiaries from the efforts made by the government as it provides them work opportunities to carry on with the traditional practices and be able to sustain themselves financially. However, the financial support is not managed well enough to keep track of the outcome from the investment, and at times, leads to a stressful situation to the weaver who must repay the loan amount with considerable amount of interest (Ashraf *et al.*, 2016).

By introducing quality standards through the state-of-the art technology, government institutions have provided a mechanism to streamline quality in spinning and weaving processes. However, this comes with a cost for the manufacturer and/or the retailer. During quality checks, in case the randomly selected product sample is rejected, then the entire lot is considered unfit by the quality assurance department. It is beneficial for the industry to conform to the stringent quality checks but at the same time it is expensive for the manufacturer/retailer to run the risk of suffering a monetary loss (in case their lot is rejected). Therefore, for decision makers, it is critical to weigh in all the aspects surrounding economic, social and environmental dimension across the cashmere supply chain operations. Based on the research findings, a summary of the effect of the cashmere industry practices on various stakeholders and on the social, environmental and economic sustainability is presented in Table 7.3.

Table 7.3 Summary of the effect of the cashmere industry changes on the stakeholders and sustainability aspects.

Stakeholder	Effect of Cashmere Supply Chain Processes on Sustainability		
	Social	Environmental	Economic
Supplier	Changing the dynamics of the communities involved with spinning and weaving practices in the region.	Replacing manually processed yarn with mechanically processed options leading to environmental changes.	
Dehairer	Affecting the communities involved with manual dehairing in the region rendering them jobless.		
Spinner	Marginalizing the most vulnerable actor in the chain and discourage them to pass it on to the next generation.	Air pollution due to diesel operated spinning machines and post blending yarn chemical treatment.	Unemployment and no increase in the wages for decades leads to monetary loss.
Weaver	Lack of honor and respect to the community and diminishing trust between the consumer and craftsmen.	Air pollution due to diesel operated power looms results in significant carbon footprint.	Low wages and lack of work opportunities results in financial challenges.
Dyer		Water contamination due to chemical dyes and inappropriate waste outlets leads to water clogging.	
Embroider	Regressive life due to low returns leads to switching to other professions including menial jobs.		Delayed payments coupled with low wages aggravates economic concerns.
Tweezer	Abandoning the craft to pursue another profession such as laborer and other similar options.		Lack of work opportunities and extremely low wages are detrimental.
Washerman		Water contamination and inappropriate waste outlets leads to clogging in the water bodies.	
Block Printer		Chemical treatment for making the block impressions on shawls/stoles and	

		inappropriate waste disposal mechanism.
Retailer	Affecting the trust factor between artisans and consumers due to lack of transferability and transparency in the chain.	Low sales volume across various labelling scenarios results in less profit margins and higher inventory
Govt. Arts Emporiums	Not encouraging the artisans involved with traditional pashmina craft leading to dissatisfaction in the community.	Struggling to cater to the artisans who produce pashmina products using traditional practices.
CDI Testing Lab	Emphasizing on the significance of quality in traditional pashmina processing among different artisan communities.	Insufficient product labelling opportunities leads to unused resources and expensiveness.
CDI Institute	Attempting to revive the traditional craft by providing entrepreneurial options to the younger generation.	

The government institutions are expected to ensure fair wages and healthy working conditions for the workforce (Rajak & Vinodh, 2015) to alleviate poverty and for the welfare of the vulnerable workers. Study findings suggest that the vulnerability of artisans leads to their exploitation from the powerful chain stakeholders. Furthermore, in the current industry scenario, the motivation of many artisanal communities to continue with their profession is minimal as they are apprehensive about their financial security (*low wages and diminishing work opportunities*) and social degradation (*marginalization*) in the cashmere industry. The findings (Table 7.3) suggest that social, economic and environmental concerns need to be captured all along the supply chain operations (Waas *et al.*, 2011). Similarly, for the artisanal communities who represent the vulnerable section of the society, the social and economic status need to be improved by providing fair, favourable and equal work opportunities (Hall & Matos, 2010; Morais & Silvestre, 2018) and financial support (Dam & Petkova, 2014). Moreover, encouraging the purchase of handicraft products is coupled with a moral aspect to support the struggling artisan communities.

In Table 7.4, based on the research findings, a summary of the effect of industry changes such as advent of mechanization (Mech), use of blended fibres (BF), exposure to wider markets (Mkt) and lack of quality standards (QS) on the three cashmere supply chains, is presented by indicating their positive (+ve) or negative (-ve) effect on the different stages of the chain operations. The representation (-) indicates non-applicability of the industry change on the chain stage. From the perspective of operational aspects, at the fibre procurement stage, traditionally the raw material is collected manually (-ve effect on the chain) whereas using the mechanical equipment similar task can be carried out in significantly less time (+ve effect on the chain) resulting in cost minimisation. Similarly, operational expensiveness on the throughput processes such as; spinning, dyeing, weaving, washing, embroidery and labelling the product before it reaches downstream to the retailers and consumers are affected by mechanisation.

Table 7.4 Summary of the industry changes on the cashmere value chains in India.

Cashmere chain			Traditional					Modern					GI-based				
Stage	Activity	Aspect	Process	Mech	BF	Mkt	QS	Process	Mech	BF	Mkt	QS	Process	Mech	BF	Mkt	QS
Fibre Procurement	Collection	Combing	Manual	(-ve)	-	(-ve)	-	Mechanised	(+ve)	-	-	-	Manual	(-ve)	-	-	(+ve)
Fibre Processing	Cleaning	Dirt Removal	Manual	(-ve)	-	-	-	Mechanised	(+ve)	-	-	-	Manual	-	-	-	-
		Sorting	Colour	Manual	-	-	-	-	Manual	-	-	-	-	Manual	-	-	-
	Length		Manual	-	-	-	-	Manual	-	-	-	-	Manual	-	-	-	-
	Blending	Natural Fibre	-	-	-	-	-	Mechanised	(+ve)	(+ve)	(+ve)	-	-	-	-	-	-
Synthetic Fibre		-	-	-	-	-	Mechanised	(+ve)	(+ve)	(+ve)	-	-	-	-	-	-	-
Transformation	Spinning	Natural Fibre	Manual	(-ve)	-	(-ve)	-	Manual	-	-	-	-	Manual	-	-	(+ve)	(+ve)
		Blended Fibre	-	-	-	-	-	Mechanised	(+ve)	(+ve)	-	-	-	-	-	-	-
	Dyeing	Colour Mixing	Manual	-	-	(-ve)	-	Manual	-	(-ve)	-	(+ve)	Manual	-	-	-	(+ve)
		Rinsing	Manual	-	-	(-ve)	-	Manual	-	(-ve)	-	-	Manual	-	-	-	-
	Weaving	Yarn Rolling	Manual	-	-	-	-	Mechanised	(+ve)	(+ve)	(+ve)	-	Manual	-	-	-	(+ve)
		Warping	Manual	-	-	(+ve)	-	Mechanised	(+ve)	(+ve)	(+ve)	-	Manual	-	-	(+ve)	(+ve)
Product Labelling	Testing	Shawl	Manual	-	-	(-ve)	-	Manual	-	(-ve)	(-ve)	-	Mechanised	(+ve)	(-ve)	(+ve)	(+ve)
		Stole															
		Scarf															

7.7 Conclusion

In this Chapter, the effect of cashmere industry changes such as the advent of mechanisation, use of blended fibres, exposure to wider markets and lack of quality standards from the perspective of quality and sustainability in various cashmere value chain stages were discussed. In the last few decades, a significant increase in the demand of cashmere products has been observed globally. At the same time, technological advancements in the manufacturing practices led to the mechanisation of cashmere industry processes. Due to this, the innovations in the traditional spinning and weaving approaches have helped speed up these processes. As a result, modern practices have replaced the centuries old traditional processes. However, the shift in the operations, especially in the dehairing, spinning and weaving stages, have changed the traditional cashmere industry considerably. Some of the changes in the traditional processes are detrimental to the extent that it has not only diluted the ‘cashmere brand’ but also resulted in a scenario where the traditional cashmere craft prevalent in the Kashmir region for centuries is on the brink of extinction.

The findings indicate a significant effect on the cashmere processes, products and various industry stakeholders effecting the product quality and sustainability aspects. To address the issues pertaining to the artisan categories, institutional support has been provided by the initiatives and the support mechanism generated through government institutions. Similarly, to address quality and sustainability related concerns prevalent in the cashmere industry, institutional support at various levels is provided by establishing industry standards to ensure product quality. In the struggle to control the resources and to reach new markets, the approach adopted by the manufacturers and/or retailers have led to unsustainable industry practices and the degradation and marginalisation of the artisan communities. Furthermore, the transition from the environment friendly processes to the system that breeds exploitation of resources resulted in sustainability issues for the local populace and the ecology of the region and needs to be addressed through policy across the chain.

8 The Conceptual Model

8.1 Overview

This chapter presents the conceptual model for the development of the cashmere industry. This is addressed through research question four in Section 8.2. In Section 8.3, the theoretical framework presented earlier in the thesis is revisited. Section 8.4 presents the collated findings obtained from the primary data and Section 8.5 presents the effects of the research findings on the theoretical framework. In Section 8.6, the conceptual model is developed whereas Section 8.7 covers the implementation aspects related with the proposed model. Section 8.8 presents the application of the model to other similar industry settings and the conclusion is presented in Section 8.9.

8.2 Research Question Four

This Chapter addresses the fourth research question i.e., develop a conceptual model for the sustainable development of the cashmere industry in India. The model addresses the effect of the cashmere industry changes such as the advent of mechanisation, use of blended fibres, exposure to wider markets and lack of quality standards on the cashmere industry operations and provide guidelines to implement the model and monitor it through sustainability indicators (objective nine).

To achieve this, the theoretical framework developed from the literature review findings is revisited to compare the expected linkages of the themes with the observed patterns generated from the case study results presented in chapters four, five and six. The outcome of case study-based research results in building theory through a conceptual framework (Eisenhardt, 1989). Therefore, based on the research findings of the study, a conceptual model is developed to capture the cashmere industry aspects addressed in the inquiry.

8.3 Revisiting the theoretical framework

In this research, the theoretical framework (Figure 2.3) evolved from the literature review is a representation of the luxury fashion industry operations considered under the purview of two critical aspects – quality and sustainability. The model assumes that both quality and

sustainability are dynamic and complex constructs which needs to be manifested and implemented across the value chain operations. The rationale behind this thinking is that sustainability and quality are interlinked with the contextual influences of the chain operations. In this framework, the traditional processes influence the industry stakeholders such as suppliers, artisans, manufacturers, consumers and government institutions involved with the luxury apparel value chains. The effect of the traditional processes is observed on products in which labelling directly influences the product authenticity. Similarly, luxury markets influence the labelling considerations. As the framework indicate, value is created along the luxury fashion industry processes using different approaches which effects sustainability and quality in the chain operations.

For an in-depth understanding of the theoretical framework, it needs to be assessed based on the findings of the research. For this, the finding emerged from the data is presented in the next section.

8.4 Collated research findings

The themes, categories and sub-categories that emerged from the primary data are presented in Table 8.1. These themes are classified based on the theoretical framework established from the literature review.

Table 8.1 Classification of the research findings based on the theoretical framework.

Various Processes		
Theme	Categories (Sub-theme)	Sub-Categories
Fibre Concerns	Unavailability of genuine raw material	Raw material access issues, altered raw material procurement mechanism, high raw material cost, cashmere goat cloning
	Unknown raw material	Fibre blending, unknown blending source, limitations of artisans
	Blending issues	Abundance of blended fibre, lack of distinction between pure and adulterated fibre
	Overdependence on experience	Reliance on traditional approaches, Lack of testing mechanism, manual inspections
Spinning Issues	Covert spinning operations	Widespread menace, defying legalities
	Lack of buyers of hand spun yarn	Time taking spinning process, inconsistent outputs
Weaving Aspects	Government Legislations	Govt. of India Handlooms Act 1985, J&K State Govt. Handicraft Act 1978
	Illegal weaving facilities	Equipment misuse, decreasing handlooms, new manufacturing hubs, protests against mechanisation, artisans' union

	Increased productivity	Mass scale production, easy processing, Efficient production
	New product designs	Product variety, increasing competition, different markets
Environmental Concerns	Chemical treatment	Use of synthetic dyes, limited natural dyeing options, blended yarn processing
	Impact on ecology	Improper drainage system, chemical waste
	Carbon footprint	Mechanical processes, fossil fuel consumption
Industry Stakeholders		
Theme	Categories (Sub-theme)	Sub-Categories
Financial Challenges	Rising unemployment	Fewer jobs for spinners, Job loss for traditional weavers, Diminishing work opportunities for other artisans
	Downward pressure on wages	Stagnant wages, Low return for artisans, Drop in artisan remunerations, Cashmere as alternate business
	Cashflow issues	Delayed payments, Demonetization
	Corruption	Legitimising counterfeit products, Vested interests, Bribery, Influence of power
	Improper profit sharing	Financial dependency on manufacturer, Lack of consideration for artisans
	Limited artisan resources	Logistical constraints, Lack of funds
Social Concerns	Artisans leaving their cultural heritage	Disinterest among artisans, Not passing on the craft to the next generation, Craft on the verge of extinction
	Disempowering women spinners	Deprived of work, Vulnerable community
	Hard hit weaving community	Lack of artisan honour, Hierarchy driven, Losing the significance of traditional weaving
	Alternate options for artisans or the lack thereof	Other options for artisans, Apprehension of indulging in illegal activities, Options for younger generation
Health Hazards	Long Work Hours	Secluded from social interactions, Eyesight problems
	Blended Yarn Dust	Susceptible to infections, Breathing problems
Functional Constraints	Red-tapism	Lack of interdepartmental coordination, Bureaucratic functioning
	Policy implementation or the lack thereof	Not banning of mechanised cashmere processes, Ineffective government measures
Support Mechanism	Financial assistance	Loans for traditional cashmere development, Government aid for cashmere industry development
	Educational programs	Cashmere industry-based qualifications, Encouraging young cashmere entrepreneurs
Lack of Ownership	Insufficient marketing of genuine cashmere products	Ineffective promotion of GI, Lack of foresightedness
	Lack of coordination between institutions and artisans	Communication gap, Insufficient traceability of loan amount
Artisans' Expectations	Process Based	Abolish mechanical processing, Encourage environmentally friendly operations, Channalise processes
	Stakeholder Related	Empower women spinners, Establish committees at the ground level, Provide pension to artisans, Provide tax rebate, Standardise remunerations, Strengthen the traditional brand
Labels		
Theme	Categories (Sub-theme)	Sub-Categories
Geographical Indications	Registration Process	Long and hard-fought battle, Need of the hour, Resistance from competitors, Political dimension
	Global Recognition	Mark of credibility, Product traceability, Support for artisans

	Quality Standards	Encouraging traditional processes, Expert consultants, Process based testing, Stringent testing criteria, Sophisticated technology, Testing and labelling options, Craft Development Institute.
	Stakeholders' Apprehensions	Aesthetical aspects, Conflict of interests among stakeholders, Limited beneficiaries, Fear of losing brand identity, Fear of losing invested capital
Different Products		
Theme	Categories (Sub-theme)	Sub-Categories
Product Awareness	Innumerable options	Changing consumer preferences, Fashion statement
	Exclusivity	Unique craft, Status symbol, Niche clientele
Trust or the lack thereof	Consumer concerns	Counterfeit products, Over dependence on trust
	Ethical aspects	Stakeholders' responsibility, Lack of traceability mechanism
Sub-standard Products	Lack of product durability	Short product life span, intrusion of mechanisation, yarn fragility
	Product imitations	Lack of policy implementation, multiple production approaches, varied markets
	Improper Labelling	Unconcerned artisans, Insignificant emphasis on labelling
	Inconsistent practices	Visual inspection, dependence on sensory skills
Luxury Markets		
Theme	Categories (Sub-theme)	Sub-Categories
Varied Markets	Increasing Domestic Markets	Increased demand for different product types
	Lucrative Overseas Markets	Entering new markets, Global presence, Growing demand for hand made products

Before developing the conceptual model, it is useful to briefly discuss the effects of the research findings on the theoretical model.

8.5 The effects of research findings on the theoretical framework

For theory development, defining and evidence-based measuring of the themes or constructs is necessary (Eisenhardt, 1989). The themes evolved from the literature review are traditional processes, industry stakeholders, labels, products and markets. To measure themes and establish relationship between them, multiple sources of evidence are required which emerge from the data (Eisenhardt, 1989). In this framework, these themes are measured from the dimensions of sustainability (economic, social, environmental, institutional) and quality (standards, labelling) to explore the effects of the research findings on the theoretical framework.

In the context of the present study, it is critical to refine the constructs of the theoretical framework through constant comparison with the data obtained from the research findings to understand the significance and effects of quality and sustainability. To capture the cashmere chain operations, the criteria adopted to address sustainability surrounds social, economic and

environmental aspects. Also, consideration of multiple market needs regarding quality are assessed.

Based on the results, the effect of the industry changes on the traditional processes (dehairing, spinning and weaving) indicate diminishing involvement of the artisanal communities and impose challenges to the environmental aspects (dyeing). Among the industry stakeholders (suppliers, artisanal communities, retailers, consumers and government institutions) there is a commonality of not only being involved with the chain operations but also to bear with varying degrees, the effects of the shift observed in the cashmere industry practices. The major theme or the focal aspect of the framework represents the 'labels'. The question '*Who is affected by labels such as GI?*' is addressed by exploring the chain processes which effects the stakeholders such as spinners, weavers and consumers. As opposed to the unstructured approaches and plethora of alternative production options available in the cashmere industry, GI standards help streamline the processes and affects the stakeholders (socially and financially) associated with various processes of the craft. Also, in an industry which is predominantly and traditionally based on manual processing, using state-of-the art technological advancements brings challenges for the manufacturers/retailers who are not used to such mechanisms to assess the quality of their products.

On the other side of the GI spectrum, through GI labelling, the question arises '*What is affected by labels such as GI?*' This is addressed by the other major components of the framework i.e., 'different products' and 'luxury markets'. The arrows connecting the label with these themes indicates the influence GI has in achieving sustainable processes and outcomes in the cashmere chain operations. Government institutions, in consultation with industry experts, have taken initiatives to combat the threat cashmere industry is facing from the changes in the chain practices. The findings clearly indicate that the state-of-the-art technology helps mitigate quality issues and establishes a platform for labelling quality assured products. However, the adherence to GI based quality parameters leads to expensive products which caters to a niche market segment. Another component of the framework is luxury markets which is the reason for the emergence of the GI label. Cashmere products have a unique appeal to consumers. Irrespective of the price a consumer pays and the value they get after procuring a cashmere article, the consumer expects to enjoy the exquisiteness of their purchase. In the cashmere industry, the value of the final deliverable is likely to vary for consumers and markets. For instance, a genuine *Kashmiri* shawl may fetch different amounts in domestic and international markets depending on the monetized value a consumer is willing to pay for such an article. GI

label represents assurance and responsiveness towards market needs. However, the consumers need to be provided reasonable degree of GI awareness for such products to get better value from their purchase. In other words, the consumers need to be made aware of the distinction between genuine and imitations of the cashmere products at various levels through appropriate channels. The effect of these themes in the theoretical framework represents how the contextual influences emanating from different chain aspects effects the present-day cashmere value chain operations. Through this, the limitations and applicability of the theoretical framework regarding the cashmere industry operations instigate the reason to address these aspects through a conceptual model discussed in the next section.

8.6 Model Development

To acknowledge and understand the real-world phenomenon, models are developed from the concepts that emerge from the research inquiry. In this research, using the data collected from interviews and observations, a conceptual model was generated by categorising the codes into categories which were collapsed into the themes. An essential aspect of theory development is comparison i.e., similarities and contradictions of the data findings (Eisenhardt, 1989). Therefore, the research findings were compared surrounding the luxury apparel chains considering quality and sustainability aspects. The themes evolved from the research inquiry help establish the limitations and adaptability of the theoretical framework surrounding the luxury cashmere industry in India. Therefore, based on the effects of the industry changes on the theoretical framework and data gathered in this research, a conceptual model is proposed and labelled as Quality Assured, Sustainable and Holistic Mechanism using Institutional Resources (QASHMIR) as presented in Figure 8.1.

A conceptual model represents a specific scenario which outlines the real-world situations. It was challenging to deduce a conceptual model to capture industry wide issues which resulted due to the changes in the cashmere industry operations. Through this research, an initial attempt has been made in the body of literature surrounding SSCM by conceptualising the ‘sustainability-quality’ dyad through the proposed model. The conceptual model highlights the relationships and their influence on several contributing factors associated with the sustainable development of the cashmere industry. The model also captures how the relationships from different luxury chain processes impacts the sustainability and quality aspects associated with the present-day cashmere value chains.

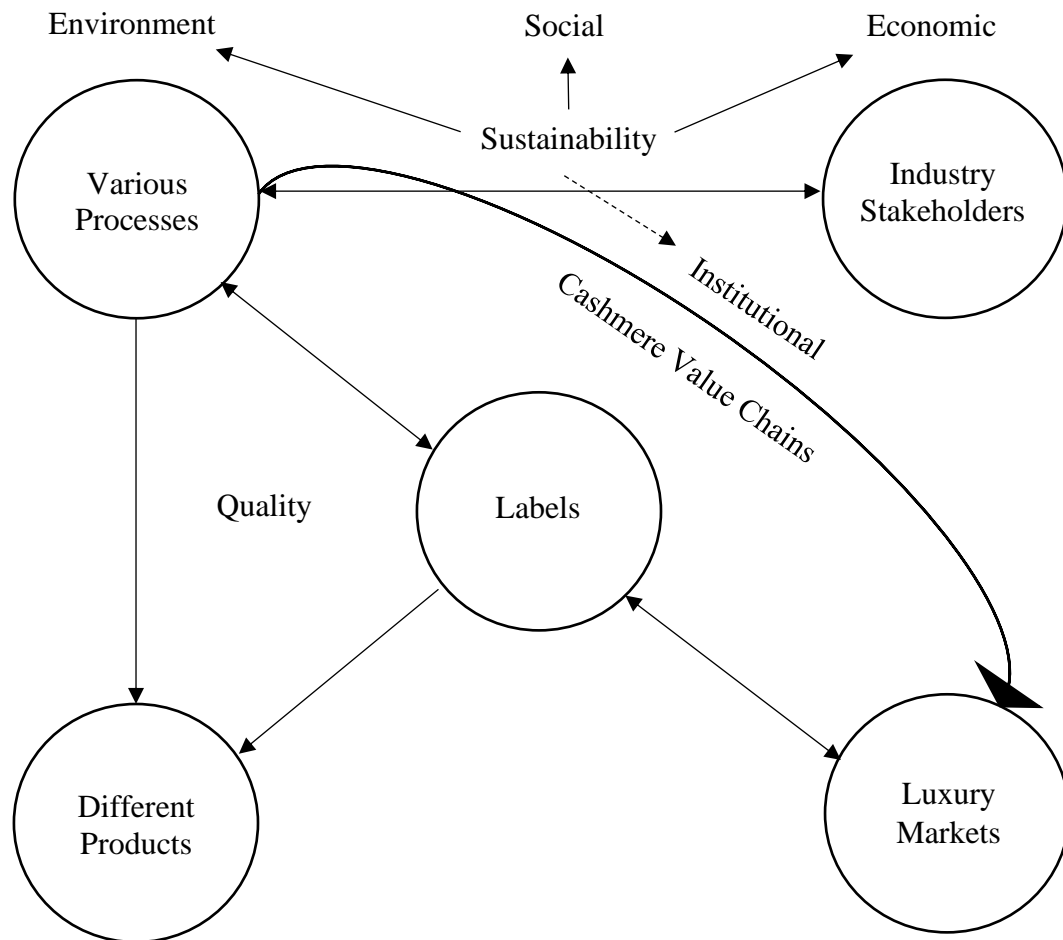


Figure 8.1 A conceptual model representing Quality Assured, Sustainable and Holistic Mechanism using Institutional Resources (QASHMIR) for the cashmere industry.

The cashmere industry issues are deeply imbedded in the centuries old traditional chain practices. Some of these practices such as manual quality assessment of the fibre and yarn are detrimental for the progression of the craft to move forward. As a result, in this model, multi-dimensional factors regarding economic, social, environmental, institutional and quality aspects in the cashmere chain processes are captured. To understand the model, the findings of the research inquiry are linked to address the functions, scope and their implications on the cashmere value chains. Firstly, in this novel representation, it is important to know the meaning of the constituents of the model and how the various categories in the proposed model influence each other. In Table 8.2, the meaning of the themes along with evidence from the data is presented.

Table 8.2 Themes presented in the QASHMIR model.

Theme	Meaning	Evidence from the data
Various Processes	Represents the processes adopted in traditional, modern and GI-based value chains	Distinct supply chains (Figure 4.25; Figure 7.1; Table 7.1; Table 7.4)
Industry Stakeholders	Represents suppliers, artisan communities, retailers, consumers manufacturers & Govt. Institutions	Effect on industry stakeholders (Table 7.3; Table 7.4)
Labels	Based on manufacturing practices, different categories of labels are required in the cashmere industry	Labelling structure (Figure 4.29; Table 4.9)
Different Products	Range of manually and mechanically made cashmere articles	Different product categories (Figure 4.26; Figure 4.27)
Luxury Markets	Changing consumer preferences catering to varied domestic and global markets	Different price points (Table 4.8)

To begin with, it is important to understand how the QASHMIR model is different to the theoretical framework. Based on the data findings, there are two major distinctions in the proposed model. First, the theme ‘various processes’ in the model also include GI-based and mechanical processes as opposed only to the traditional processes which was covered in the theoretical framework. Second, ‘labels’ captures different labelling options as opposed to a single labelling option as presented in the theoretical framework. Moreover, the QASHMIR model embeds ‘sustainability-quality’ dyad and emphasises that they are incorporated across all the stages through an integrated and interacting mechanism in the luxury apparel chains. Cashmere operations are carried out on small, medium and large scales predominantly using the traditional and modern practices. Recently, the GI based practices are also being used in the operations. In Kashmir, there are large number of cashmere manufacturing units; most of which produce shawls, scarves and stoles. For these products, cashmere manufacturers target three consumer segments: cashmere admirers, value seekers and casual buyers who follow the fashion trends. Therefore, there are different cashmere value chains in action which leads to

the complexity in the processes. Also, non-conformance of the standards and labelling issues are critical in the cashmere value chains. These chains use traditional or modern or a combination of both practices for domestic and international clientele. The cashmere industry in India lacks standards and controls in its operations leading to product quality risks all along the chain operations. This results in unethical practices which significantly affects the industry. Considering the quality and sustainability aspects covered in the thesis, institutional support needs to be established for various stakeholders in the chain at different levels. Government and non-government organisations are required to establish mechanisms to mitigate risks to ensure economic, social and environmental sustainability through the institutional support. The institutional support is expected to provide the missing elements i.e., ‘process credibility’ and ‘product quality’ to the industry stakeholders.

In the luxury fashion apparel industry, established brands are conscious of the significance of the fibre quality, manufacturing processes and labelling which generates value towards the final product. The GI label provides many benefits for the stakeholders. The GI label directly influences the stakeholders across various market segments in the chain such as suppliers, spinners, weavers and most importantly, the consumers. Traceability of the variety of cashmere products can lead to credibility in the upstream chain operations. For consumers, with appropriate mechanism, the label can help trace the product further up in the chain and increases the credibility of the manufacture. Through this, the consumers not only get the product authentication but in case of any issues can trace back directly to the manufacturer who produced the article. Similarly, manufacturers also get visibility in the marketplace and get a window of opportunity to directly interact with their consumers. Therefore, the traditional craft not only gets global recognition but also artisans get acknowledgement for their efforts; and are likely to get their well-deserved share with minimal intermediaries in the chain. The GI label is the mechanism through which the artisan communities involved with the processes are expected to get socio-economic benefits.

With cashmere products, the consumer is hardly provided with any after sales service or the provisions to ensure the legitimacy of the product. In this regard, the model indicates that appropriate labels can be a significant predictor of the overall satisfaction for the stakeholders of the cashmere industry. The labels directly influence the internal (artisans, institutions) and external stakeholders (consumers) of the chain. However, at present, due to few explicit (lack of funds, conflict of interest) and implicit (social dynamics of the region) reasons the use of distinct labelling options in the industry is limited. Despite the industry constraints,

conformance to appropriate labelling options positively affects the socio-economic and environmental sustainability aspects associated with cashmere processes. However, some retailers and manufacturers are averse to placing the label containing the fibre composition and/or manufacturing practices used in their products. Instead, they simply place the logo representing their brand. Also, to safeguard their brand identity and prestige, at most, they prefer only to certify the fibre used in their products to ensure its contents and purity. Furthermore, regarding GI labels, there is a degree of apprehension among the artisans on the acceptability of the GI label in the marketplace since it would charge a premium on the product. Therefore, it is critical to reflect on these distinctions and contradictions in the implementation of the model as discussed in the next section. Furthermore, in doing so, different dimensions of sustainability and quality need to be considered at the appropriate levels of the chain operations.

8.7 Model Implementation Guidelines

8.7.1 Industry constraints

In this research, a conceptual model is developed for the sustainable development of the cashmere industry in India. Through the QASHMIR model, an attempt is made to explain how the key constructs in the luxury value chains affect the cashmere industry operations. However, the QASHMIR model itself does not provide information for its implementation. Therefore, to complement the model, it is required to understand and establish guidelines or a framework that gathers and brings together the research findings to achieve the desired study objectives. For this, industry specific constraints need to be considered in the implementation of the model.

1. As findings suggest, there is a degree of resistance by some stakeholders to achieve economic, social and environmental sustainability by not conforming to the standardised practices since they have distinct connotations for quality and sustainability (Table 7.4).
2. Similarly, approaches and considerations regarding labelling options significantly vary in the operations (Figure 4.28) affecting the chain processes and impacting the industry stakeholders.
3. The implementation framework of the model needs to be process specific across different cashmere value chains to capture distinct operations.
4. It is also important to know that due to dominant political factors prevailing in the Kashmir region during the last few decades, there is limited infrastructural and industrial development as compared to other parts of India. For instance, telecommunication services

such as the Internet and mobile connectivity in the Kashmir region are government-controlled and are subject to scrutiny; leaving little room for the supply chain operators to rely on the modern age communication channels alone to overcome the obstacles presented by the traditional business practices.

Based on this, the entire gamut of cashmere value chain activities can be captured and creates an opportunity to establish a mechanism for the sustainable cashmere operations. Therefore, in this regard, this research provides deep insights into the cashmere industry functionalities and highlights the modalities required to implement the model. The guidelines for the model includes the implementation aspects by considering the shortcomings and practicalities surrounding the industry practices and proposes a plan that supports the sustainable development of the cashmere value chains.

8.7.2 Implementation considerations

The policy makers need to reflect on the industry changes by accepting, upgrading or abandoning the industry practices through legal instruments. The policy decisions need to be made considering the environment industry operates under to eliminate or mitigate the operational constraints at different levels. To achieve sustainability in the cashmere industry, conforming to the industry standards and government policies across the chain operations is expected to streamline the value chain processes. Also, this can be a catalyst for the affected artisan categories to help bring the improvements in the operations. For this, there is a need to create avenues by the government institutions for experimentation and innovation focusing on the affected value chain processes (predominantly spinning and weaving) by developing strategies and policies and address the requirements of the severely affected artisan communities. Therefore, for the sustainable development of the cashmere industry policy needs to be established surrounding the processes and artisan communities.

The role and significance of policy making is considerable in developing a strategy to protect the interests of artisan communities, traditional and GI producers and consumers (Vandecandelaere, 2021). Even though GI is currently functional in the cashmere industry in India, but its effectiveness on the ground operations is limited and subject to discussion. To respond to the varied market needs, the policy makers must reflect on the reasons of the shift the cashmere industry has been facing for the last couple of decades. Through the suggested implementation approach of the proposed model, human, material and technological aspects

are expected to generate value towards the final product and create sustainable processes in the cashmere industry. During policy development, practicalities, contingencies and understanding of the process specific issues needs to be considered across the chain operations. For this, the policy makers need to consider the following.

1. For procurement, few critical aspects need to be considered such as raw material availability from the *Changthang* region (habitat of the cashmere goat) and suppliers' capability across different cashmere chains. Given the scarce availability of the genuine cashmere fibre, procurement of raw material volumes acquired from different channels can be a critical indicator for product specific outcomes. However, it is important to know that suppliers, at times, face challenging issues in procuring and shipping the raw material from *Changthang* to Srinagar (place of manufacture) due to inclement weather or logistical constraints.
2. One of the ways to effectively implement and control the raw material distribution mechanism is to ration the raw material quantity to the registered suppliers. Similarly, for the producers an approximation of the expected number of products to be produced from the cashmere fibre they procure can be identified. For this, data can be generated and monitored using software systems to ensure traceability and accountability of the suppliers and producers.
3. The institutional support needs to be provided at the ground level to the artisans whereas the management of resources at all levels for the stakeholders (artisans and institutions) is required. In the cashmere industry, along with the government intervention, community govern distribution of resources and tasks i.e., democratisation may be effective than having a completely government controlled centralised mechanism. In this, incentives for the appropriate use of resources can be provided to GI producers and artisan communities.
4. To address resource allocation problems, a discourse on negotiating the use of resources across different cashmere supply chains is instrumental among the chain stakeholders of the cashmere industry. For this, a communication structure is required between the artisan communities and government institutions to build trust and confidence among themselves and with the consumers. With the passage of time, the concerted efforts of the chain stakeholders is expected to develop the identity and reputation of distinct labels in the cashmere industry.
5. To develop policy focusing on the upliftment of the affected artisanal communities working in the luxury fashion industry, artisans' participation or their representation is critical since

they are directly involved with the operations and their involvement is significant for their economic and social development. This can be achieved by establishing committees at the ground level, streamlining industry remuneration structure, providing tax rebates and/or by providing pensions to the registered artisans. Regardless, policy should be designed not only by considering the institutional aspects but also by involving the less represented artisanal communities in the consultation and/or policy making process.

6. Geographical Indication based parameters needs to be established across all the GI value chain processes which can be considered as a baseline for the non-GI cashmere value chains. This can play an instrumental role in establishing the distinction among the competing cashmere value chains and encourages the adoption of distinct labelling options in the industry.
7. A feedback mechanism to assess the implications of the policy implementation on different chain stakeholders is required. Through this, the applicability of the policies can be assessed and required improvements can be ascertained.

The policy framework is expected to help address and mitigate quality and sustainability risks susceptible to the cashmere value chains. Importantly, the framework addresses the socio-economic and environmental aspects associated with the cashmere industry. Through this, the subtleties surrounding the model can be understood by uncovering the relationships and the underlying meaning of the research findings.

8.8 Monitoring mechanism

Management and follow up is required to implement and assess the policies through a supervisory mechanism involving government institutions and artisan communities. For the sustainable development of the cashmere industry, sustainability indicators can be used as a measuring mechanism for the QASHMIR model. Sustainability indicators (SI) are expressions to capture the influence of processes that constitute the framework of sustainability efforts and help develop policy and to assess its implementation in the subjective contexts (Turcu, 2013). For this, risks, opportunities, stakeholder expectations and external pressures needs to be considered through a participatory process for the selection of the existing and/or creating new indicators as need be (Vandecandelaere, 2021).

8.8.1 Sustainability Indicators

In 2015, considering the Triple Bottom Line (TBL) approach, the SDGs were developed in 17 categories by the United Nations (UN) where these goals are “integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental” (UN Agenda 2030). To implement the 17 SDGs, the UN approved the 2030 Agenda for the betterment of the TBL globally. Among the 17 SDGs, SDG 1, SDG 5, SDG 8, SDG 9 and SDG 16 resonate with the scope of this research (Appendix M). Based on the Sustainability Assessment of Food and Agriculture (SAFA) structure, which is aligned with the SDGs, the indicators can be categorised in four areas i.e., environmental, social, economic and governance (FAO, 2014). In these categories, the indicators can be based on the processes, value chains or artisan communities and can be assessed qualitatively or quantitatively. For instance, the indicators can measure carbon footprint (FAO, 2020), social aspects (Janker & Mann, 2020), women empowerment (UNSDG) etc. Regardless of the scope and type of the indicator, the gap between the indicator measure and the actual operations needs to be minimised in the operational framework which often is a result of loss or lack of information (Vandecandelaere, 2021). After determining whether the indicator is meant to measure a process such as resource allocation or to measure the effectiveness of the value chain, the indicators need to be prioritized, assessed and improved through communication channels based on the significance, maturity level and impact of the aspect covered in the indicator (Vandecandelaere, 2021).

Sustainability indicators can be developed and measured through expert-led (top-down) directives involving government and experts' opinions or by adopting citizen-led (bottom-up) initiatives based on local expertise (Turcu, 2013). Traditionally, the top-down approach follows hierarchical structure and posits quantitative or scientific assessment of the indicator whereas, the bottom-up functions on the participatory philosophy to include qualitative aspects such as the behavior of local communities (Turcu, 2013). However, in this binary, the two approaches are skewed and do not consider the concerns from the other perspective. Therefore, integrating the two distinct approaches not only help mitigate their different views but also help understand the complex local context. Moreover, through this, it would be helpful to alleviate the differences between policy makers and end-users (Eckerberg & Mineur, 2003). To yield effective results from the implementation of the sustainability policy it is encouraged for the target audience to actively participate in the conceptualization and development of the sustainability indicators (Rydin *et al.*, 2003; Bell & Morse, 2001). Therefore, the involvement

of citizen-led approach early in establishing the sustainability indicators at the ground level is encouraged (Reed *et al.*, 2006). However, in doing so, the involvement of expert-led assessments and dissemination of the indicators is equally significant (Reed *et al.*, 2006). Through this, an interface can be attained between the community representatives and the policy makers to minimise the domination and control of any single participant.

8.9 Application of the model to other industry settings

The QASHMIR model developed in this research is expected to be applicable in other similar industrial settings which include substantial manual intervention in the processes where the place of product origin is significant and/or the application of the proposed model can be conducive in situations where the distinction between mechanical and manual processes is not reflected in product labelling. Based on these considerations, in the literature, among other contexts, value chains involving traditional practices and various labelling scenarios in the products such as *honey* (Latorre *et al.*, 2013), *cocoa* (Haynes *et al.*, 2012), *silk* (Patichol *et al.*, 2014), *Coffee* (Neilson *et al.*, 2018) and *Cheese* (Slade *et al.* 2019) can be the potential candidates for the application of the QASHMIR model. However, there are few limitations in the applicability and transferability of the proposed model since it is primarily focusing the industries in the developing economies which are supported by varied regulatory mechanisms. Furthermore, the context and implementation process may vary however the model characteristics should remain unchanged.

8.10 Conclusion

In this research, a conceptual model (QASHMIR) surrounding the cashmere luxury chains is presented. The model and guidelines to implement and monitor it through sustainability indicator mechanism paves a way forward to streamline and mitigate variations susceptible to the cashmere industry operations. The model indicates that GI can be a significant predictor of overall satisfaction for the stakeholders of the cashmere chain. However, at present, due to explicit and implicit industry constraints the awareness of sustainability and quality considerations among the stakeholders is limited. Despite the challenges, conformance to standards positively affects the socio-economic and environmental sustainability aspects associated with cashmere processes. Embedding GI and other labelling options in the cashmere chain processes is likely to positively impact the stakeholders and the traditional craft. Policy makers must also reflect on the shift traditional cashmere industry is facing for

the last couple of decades. Through this, human, material and technological aspects are considered to generate value towards the final product and create sustainable processes in the cashmere industry. The stakeholders are expected to benefit from the findings of the study, which is likely to impact existing cashmere industry practices in the region. Also, a contribution to the body of knowledge surrounding the luxury apparel industry is expected.

9 Conclusion, Contribution and Further Research

9.1 Overview

Section 9.2 presents the purpose of the research through the four research questions addressed in the study whereas Section 9.3 concludes the research findings. In Section 9.4, the contribution of the research is presented. Section 9.5 presents the research limitations. Further research considerations are presented in Section 9.6 and concluding remarks are presented in Section 9.7.

9.2 Research Purpose

This research aimed to determine and explain the effect of the changes in the cashmere industry in India through the antecedents of quality and sustainability. Based on this research aim, four research questions (RQ) were formulated to get deeper insights into the cashmere value chains operational in India.

- RQ1: What is the role and significance of artisanal communities and product labelling in the cashmere value chains in India?
- RQ2: What is the effect of the industry changes on the cashmere value chain processes and products?
- RQ3: What is the effect of the cashmere industry changes on stakeholders?
- RQ4: Develop a conceptual model for the sustainable development of the cashmere industry in India.

To investigate these questions, research methodology using qualitative approaches was adopted and an empirical case study was carried out for data collection through interviews, observations, cashmere retailer websites and documentary evidence. A summary of the research findings are presented in the following sections.

9.3 Research Conclusion

The thesis addresses and acknowledges a myriad of views of the cashmere industry stakeholders as they provide deep insights into multi-level complexities related with the cashmere operations in India. The cashmere industry not only provides livelihoods to the artisans but also represents the cultural identity of the region. The changes in the cashmere industry such as the advent of mechanisation, use of blended fibres, exposure to wider markets and lack of quality standards have affected the social, economic, environmental and quality constructs surrounding the industry. Among other implications of the industry changes, the two major aspects observed are the marginalization of cashmere artisanal communities and the lack of recognition of distinct product labelling options. The research findings suggest that in the cashmere industry, the issues surrounding the artisanal communities and product labelling are complex, multidimensional and surrounded with obscure boundaries of the chain operations. Due to the temporal and spatial dimensions associated with the cashmere supply chains, it was required to address their economic, social and environmental ramifications. The major findings of the research are presented in Table 9.1.

Table 9.1 Research questions and their key findings

Research Questions	Key Findings
RQ1: What is the role and significance of artisanal communities in the cashmere value chains in India?	There are three distinct cashmere supply chains i.e., traditional, modern and GI based are functioning concurrently in India which links various stakeholders such as suppliers, spinners, weavers, and other artisans associated with the ancillary activities. Artisans play critical role in creating value for the consumers in the traditional and GI based chains. Among artisans, spinners and weavers are the most important communities, however, their role in the dominant modern chains is diminishing.
RQ2: What is the effect of industry changes on the cashmere value chain processes and products?	The cashmere industry in India has changed considerably and the effect of industry changes have resulted in fibre concerns (procurement from multiple sourcing channels, unavailability of genuine raw material, unknown raw material, blending issues and overdependence on experience), spinning issues (covert spinning operations and lack of buyers of hand spun

	<p>yarn), weaving aspects (Legislations, illegal weaving facilities, increased productivity and new product designs) and environmental concerns (chemical treatment, impact on ecology and carbon footprint). Also, subjective quality assessments, mislabeling and counterfeiting of products were identified as an outcome of the change in processes.</p>
<p>RQ3: What is the effect of cashmere industry changes on stakeholders?</p>	<p>For artisans, financial challenges (rising unemployment, downward pressure on wages, cashflow issues, corruption, improper profit sharing and limited artisan resources), social concerns (leaving their cultural heritage, disempowering women spinners, hard hit weaving community and alternate options for artisans or the lack thereof) and health hazards (long work hours and exposure to blended yarn dust) were the major effects of the industry changes. Whereas from the perspective of consumers, increased product awareness and availability along with trust or the lack thereof (ethical aspects) are the major factors. Functional constraints (red-tapism and policy implementation), support mechanism (financial assistance and educational programs) and the lack of ownership were identified as the major findings for the government institutions. Regarding quality, Geographical Indications include the aspects of the registration process, global recognition, quality standards and stakeholders' apprehensions were the major effects of the industry changes.</p>
<p>RQ4: Develop a conceptual model for the sustainable development of the cashmere industry in India.</p>	<p>A Quality Assured Sustainable and Holistic Mechanism using Institutional Resources (QASHMIR) is presented for the sustainable development of the cashmere industry in India. Policies to implement and measure the model using sustainability indicator mechanism paves a way forward to streamline and mitigate variations susceptible to the cashmere industry operations. The model is expected to be applicable for other similar industrial settings where artisanal expertise and consideration for the place of product origin is significant.</p>

In conclusion, the sustainable development of the cashmere industry can be achieved by protecting the centuries old heritage of the region through the conservation of resources (pure cashmere fibre) and assigning product quality using appropriate labelling mechanism such as GI. The GI represent technical, social and quality attributes through the mobilisation of local resources in the chain operations (Belletti *et al.*, 2017). To protect the traditional cashmere industry operations and the artisans, the government institutions need to make legal arrangements by providing support at different levels of the cashmere supply operations.

9.4 Research Contribution

The research contributes in theoretical, practice based and policy making aspects as presented in this section.

9.4.1 Theoretical contribution

To capture the broad spectrum of complex issues surrounding the cashmere industry from a range of perspectives it was necessary to consider different theoretical domains to suit the fast changing and uncertain nature of the luxury fashion apparel chain operations. Therefore, this research explored literature across different study areas to address the research questions. In this work, using inductive reasoning, theory was developed from the ethnographic case study by observing the relationships and patterns from the emergent themes presented in the QASHMIR model. The model captures sustainability-quality dyad in the luxury apparel industry in the context of a developing economy. From a theoretical perspective, the changes and the complexities in the cashmere industry has been analyzed from the socio-economic, environmental and quality aspects. Through the theoretical constructs covered in the study and the conceptual lens adopted to address the research questions, the academic rigor carried out during the research demonstrate the examination of multidimensional domains of sustainability and quality in the luxury value chains. The key theoretical contributions of this research can be summarized as follows:

1. This research attempts to investigate the inherent complexity in the relationships between economic, social and environmental sustainability along with the quality dimensions from a novel perspective. Through this, to the luxury fashion literature, this research provides a refined and rich understanding of the cashmere industry and extends the boundaries of sustainable development by empirically investigating the ‘sustainability-quality’ dyad and their relationships in the luxury apparel chains. The interconnections and overlaps in sustainability and quality aspects are critical in the luxury apparel chains leading to the

socio-economic and environmental complexities. The study findings indicate that the conceptualization of Geographical Indications (GI) as a quality tool is conducive in the sustainable development of the traditional and GI based cashmere value chains in the industry where the modern cashmere value chain is gaining economic dominance and acceptability in the markets. Therefore, through this research, an important theoretical contribution involves the introduction of four-tier product labelling perspective to the literature of sustainable supply chain management.

2. In the luxury apparel industry, the ‘sustainability-quality’ dyad indicates that the luxury value chains affect the economic, social and environmental dimensions across a range of processes and stakeholders. The empirical investigation highlights the role of institutions, the less studied sustainability aspect, and its significance in the luxury apparel industry. Furthermore, due to democratization of luxury and subject to the shift in the authority in the power structure from manufacturers to consumers, the cashmere industry changes not only open a window of opportunity for the artisan communities for increased social cohesion and economic mobility through embedded institutional thinking in the luxury value chains but also signifies the role of institutional intervention at the appropriate levels of the chains. This indicates that for the sustainable development in the luxury fashion industry, sustainability aspects i.e., social, economic and environmental are interlinked at different levels of the chain operations.
3. Another contribution of the thesis is to address the effect of the industry changes on the socio-economic dimension of the marginalized artisanal communities. This is an initial attempt in the literature to investigate luxury apparel chain operations in the emerging economies indicating that resource ‘access and utilisation’ from the institutional and artisans’ perspective differs. The findings clearly indicate that the lack of ownership and bureaucratic approach of the government initiatives at the ground level further led to the marginalization of the artisan communities over time effecting their socio-economic conditions.

9.4.2 Practice based contribution

Luxury apparel value chains are dynamic and vary in time, space and scale. This research captured an in-depth description of the cashmere industry practices across multiple cashmere value chains operating in India. Through this, the role and significance of various artisan communities in the cashmere value chain operations is established. From this, industry

practitioners functioning in the luxury apparel industry, especially in the developing countries, and academics are expected to gain valuable insights on the processes and realities surrounding the cashmere industry operations in India.

In this research, a product classification structure for the identification of distinct labelling options is devised (Figure 4.29) for the industry practitioners depending on the approaches used during the manufacture. For this, a cashmere product labelling checklist is also developed (Appendix L). In the industry operating with multiple value chains concurrently to cater to a range of consumer preferences in different luxury markets, it is important to capture this diversity and advocate the appropriate use of distinct labelling options on the cashmere products. As long as the products made from the mechanised processes are labelled appropriately through the legal procedures then there is an opportunity to carry forward the distinct cashmere value chain operations which is expected to get acceptability from the industry stakeholders. Through this, varying consumer preferences can be captured, and their changing requirements will be addressed accordingly by the producers. This is expected to provide a window of opportunity for the artisan communities of the distinct value chains to explore possibilities for collaboration to generate revenue streams by sharing their resources for the overall development of the cashmere industry.

9.4.3 Policy related contribution

This research lays the foundation for the sustainable development of the cashmere industry in India by providing the building blocks for the policy makers and the NGOs involved with the cashmere industry operations. From the policy perspective, to assess the dynamics of sustainability-quality dyad, it is beneficial to conduct similar research in different industrial settings where artisanal expertise and the place of product origin is significant. Through this, the policy makers can also capture and understand the temporal and spatial trajectories of the dyadic relationship from the institutional context as presented below. In summary;

1. A conceptual model along with its implementation and assessment approach for the sustainable development of the cashmere industry is presented.
2. The policy makers and administrators need to create a holistic mechanism to get feedback from different channels to ensure product quality and identify any gaps between upstream and downstream chain operations to address variable market trends.
3. Institutional interventions involving standardization of processes across the chains needs to be ensured through proportionate incentives to the chain stakeholders.

4. Kashmir Government Arts Emporium outlets can play significant role in addressing and overcoming the existing hurdles encountered in ensuring traceability and credibility of the traditionally processed cashmere products.
5. Integrate institutions such as Craft and Development Institute (CDI) and a range of Kashmir Government Arts Emporium outlets to cooperate and develop strategies to recognize the efforts of the artisan communities by providing them necessary platforms.

These policy considerations may become an influential proponent for the sustainable development of the cashmere industry in India.

The research is summarised in Table 9.2 to provide an overarching view of this investigation. The terms used in the research summary are described below.

1. Problems – Changes in the cashmere industry operations.
2. Central Issue – Among a set of problems, the issue considered for investigation in the study by mapping it with the problems.
3. Environment – Captures the real world setting for the problem considered in the study.
4. Stakeholders – The industry stakeholders from whom data was gathered and they are the expected beneficiaries from the research findings.
5. Benefits – Presents potential benefits from the outcome of the research.
6. Approach – The perspective considered to address the problem to address the central issue.
7. Impact – The impact of research findings on theory, practice and policy making.
8. Solutions – The findings of the study under investigation. Also, captures the applicability of the study.
9. Significance – Provides the reason to conduct the study and highlights its importance.

Table 9.2 Research Summary

Approach (How?)	Problems (What?)	Environment (Where? When?)
<ul style="list-style-type: none"> Multi-site empirical case study Inductive (E), Constructive (O) Interviews, Observations, Documents Thematic analysis 	<ul style="list-style-type: none"> Advent of Mechanisation Use of blended fibres Exposure to wider markets Lack of quality standards 	<p>In three districts (Srinagar, Ganderbal and Badgam) of the Kashmir valley, India.</p> <p>The field trip was conducted from December 2017 to February 2018 to collect primary data.</p>
Significance (Why?)	Central Issue (Aim?)	Stakeholders (Who?)
Sustainability and quality aspects are major concerns in the luxury fashion apparel chains.	To determine and explain the effect of the changes in the cashmere industry in India through the antecedents of quality and sustainability.	Suppliers, Artisan communities, Manufacturers, Retailers, Consumers, Government Institutions, NGOs
Impact	Solutions	Benefits
The research findings provide deep insights into the cashmere industry. Highlights issues related with the sustainability and quality aspects surrounding the cashmere value chains.	A conceptual Model (QASHMIR) is proposed for the sustainable development of the cashmere industry. Also, model implementation policy and monitoring mechanism is suggested.	<ul style="list-style-type: none"> Contribution to theory Contribution to practice Contribution to policy making

9.5 Further Research

In this thesis, an attempt is made to determine and explain the effect of the changes in the cashmere industry in India from the antecedents of quality and sustainability. This research contributes to the body of knowledge in luxury fashion business and prompts new directions of investigation for industry practitioners, policy makers and research communities. For further research, a Value Chain Approach (VCA) and/or Value Stream Mapping (VSM) based study needs to be carried out to distinguish between the value adding and non-value adding activities across the cashmere value chain processes. Another important further research area could be to explore the upstream cashmere fibre harvesting process which is the key process to understand the intricacies involved not only with upstream fibre quality aspects but also with the existing distribution channels the operate in the region.

Even though sustainability aspects provide less quantifiable considerations, a quantitative study on capturing cashmere value chain risks and sustainability dimensions also leave scope for future research. In the small-scale industries and/or in the unorganised sector, exchange of funds through cash constitutes majority of the business transactions. Especially, in the context of the cashmere industry, cash transactions are the backbone between various chain stakeholders. However, to achieve transparency and accountability in the chain operations, conducting business transactions using digital or electronic mechanism can be considered. In this regard, research based on the block chain-technology is expected to open a range of new avenues and opportunities not only for the stakeholders but will also help in the sustainable development of the cashmere industry.

9.6 Concluding Remarks

The objective of this research was to determine and explain the effect of the changes in the cashmere industry such as the advent of mechanisation, use of blended fibres, exposure to wider markets and lack of quality standards on cashmere value chain processes, artisan communities, government institutions from the lens of sustainability and quality. For the sustainable development of the cashmere industry, a Geographical Indication based perspective was considered since such an approach provided a window of opportunity to capture sustainability and quality dimensions at each stage of the chain and provides deep insights on the issues which limits the sustainable development of the phenomenon under investigation. Cashmere industry in India has been a source of employment for hundreds of thousands of people and represents the cultural identity of the region. In this research, an attempt has been made to address the two most critical aspects associated with the present-day cashmere supply

chain operations – sustainability and quality. Based on the best understanding of the researcher, the approach adopted to address these aspects for the sustainable development of the cashmere industry is a first attempt in the literature to capture the ‘sustainability-quality’ dyad. The research concludes that the cashmere value chains are severely affected due to the changes in the cashmere industry, leading to quality and sustainability issues for the traditional craft and artisanal communities. The outcome of this research is relevant to the policy makers of the cashmere industry to address social, economic, environmental and quality concerns through relevant policy mechanisms and opens avenues for further research and application.

References

- Ahmed, M. (2004). The politics of pashmina: The Changpas of eastern Ladakh. *Nomadic Peoples*, 8, 89-106.
- Ahmad, F., & Nengroo, A.H. (2013). An analysis of handloom sector of Jammu & Kashmir: A case study of district Budgam. *International Journal of Management and Business Studies*, 3(1), 106-109.
- Ali, M.H. (2011). The protection of Geographical Indications in Pakistan: Implementation of the TRIPS agreement. *The Journal of World Intellectual Property*, 14(6), 467-476.
- Allison, E.H., & Horemans, B. (2006). Putting the principles of the sustainable livelihoods approach into fisheries development policy and practice. *Marine Policy*, 30(6), 757-766.
- Ammayappan, L., Shakyawar, D.B., Krofa, D., Pareek, P.K., & Basu. G. (2011). Value addition of pashmina products: Present status and future perspectives – a review. *Agricultural Review*, 32(2), 91–101.
- Ansari-Renani, H.R. (2014). A value chain and marketing of Iranian Cashmere. *Media Peternakan: Journal of Animal Science and Technology*, 37(1), 61-70.
- Ansari-Renani, H.R. (2015) Cashmere production, harvesting, marketing and processing by nomads of Iran-A review. *Pastoralism*, 18(5).
<https://pastoralismjournal.springeropen.com/articles/10.1186/s13570-015-0040-y>
- Arfini, F., Cozzi, E., Mancini, M.C., Ferrer-Perez, H., Gil, J.M. (2019). Are Geographical Indication Products Fostering Public Goods? Some Evidence from Europe. *Sustainability*, 11(1), 272. <https://doi.org/10.3390/su11010272>
- Arfini, F., & Bellassen, V. (2019). *Sustainability of European Food Quality Schemes*. Springer.
- Ashraf, S. I., Ashraf, S. N., & Hafiz, S. M. (2016). Obstacles faced by craftsmen and traders in pashmina sector: A study of J&K, *International Journal of Advanced Research*, 4(6), 1227-1239.
- Atwal, G., & Williams, A. (2009). Luxury brand marketing – The experience is everything! *Journal of Brand Management*, 16, 338-346.

- Awaysheh, A., Klassen, R.D. (2010). The impact of supply chain structure on the use of supplier socially responsible practices. *International Journal of Operations and Production Management*, 30, 1246–1268.
- Aydin, N.Y., Zeckzer, D., Hagen, H., & Schmitt, T. (2015). A decision support system for the technical sustainability assessment of water distribution system. *Environment Modelling & Software*, 67, 31–42.
- Baliga, R., Raut, R.D., Kamble, S.S. (2020). Sustainable supply chain management practices and performance: An integrated perspective from a developing economy. *Management of Environmental Quality*, 31, 1147-1182.
- Balachandran, K.R. & Radhakrishnan, S. (2005). Quality implications of warranties in a supply chain, *Management Science*, 51(8), 1266–1277.
- Basole, A. (2015). Authenticity, innovation, and the Geographical Indication in an artisanal industry: The case of the Banarasi sari, *The Journal of World Intellectual Property*, 18(3-4), 127-149.
- Bastas, A., & Liyanage, K. (2018). Sustainable supply chain quality management: A systematic review. *Journal of cleaner production*, 181, 726-744.
- Basu, G., & Roy, A.N. (2008). Blending of jute with different natural fibres. *Journal of Natural Fibres*, 4(4), 13-29.
- BBC (2020, March 16). *The cashmere crisis in the Himalayan ice desert*. <https://www.bbc.com/news/in-pictures-51708991>
- Bechtel, C., & Jayaram, J. (1997). Supply chain management: A strategic perspective. *International Journal of Logistics Management*, 8, 15-34.
- Becker, T.C. (2009). European food quality policy: The importance of Geographical Indications, organic certification and food quality assurance schemes in European countries. *Estey Centre Journal of International Law and Trade*, 10(1), 111-130.
- Bell, S., & Morse, S. (2001). Breaking through the glass ceiling: Who really cares about sustainability indicators? *Local Environment*, 6(3), 291-309.

- Belletti, G., Marescotti, A., & Touzard, J-M. (2017). Geographical Indications, public goods, and sustainable development: The role of actors' strategies and public policies. *World Development*, 98, 45-57.
- Berger, J., Buuveibbaatar, B., & Mishra, C. (2013). Globalization of the cashmere market and the decline of large mammals in Central Asia. *Conservation Biology*. 27(4). 679-689.
- Berry, C.J. (1994). *The idea of luxury: a conceptual and historical investigation*. Cambridge University Press.
- Bocken, N.M.P., & Short, S.W. (2016). Towards a sufficiency-driven business model: Experiences and opportunities. *Environmental Innovation and Societal Transitions*, 18, 41-61.
- Boffelli, A., Dotti, S., Gaiardelli, P., Carissimi, G., & Resta, B. (2019) Corporate environmental management for the textile industry: Toward an empirical typology. *Sustainability*, 11, 66–88.
- Bose, C. (2016). Geographical fixity or affective ties: How do artists respond to Geographical Indications? *The Journal of Modern Craft*, 9(2), 117-137.
- Brandao, M.S., Filho, M.G., & da Silva, A.L. (2021). Luxury supply chain management: a framework proposal based on a systematic literature review. *International Journal of Physical Distribution & Logistics Management*, 51(8), pp. 859-876.
- Brodhag, C., & Taliere, S. (2006). Sustainable development strategies: Tools for policy coherence. *Natural Resource Forum*, 30, 136–145.
- Brundtland Commission Report (1987). *Our Common Future*.
<https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>
- Brun, A., & Moretto, A. (2014). Organisation and supply chain for quality control in luxury companies. *Journal of Fashion Marketing and Management*, 18(2), 206-230.
- Brun, A., Caniato, F., & Moretto, A. (2017a), A new research agenda for luxury supply chain management? In Rinaldi, R. and Bandinelli, R. (Eds), *Workshop on Business Models and ICT Technologies for the Fashion Supply Chain*, 3-15, Springer.
- Brun, A., Castelli, C., & Karaosman, H. (2017b). A focused supply chain strategy for luxury fashion management, *Journal of Fashion Marketing and Management: An International Journal*, 21(4), 544-563.
- Bryman, A. (2012). *Social Research Methods* (4th ed.). Oxford University Press.

- Bumla, N.A., Wani, S.A., Shakyawar, D.B., Sofi, A.H., Yaqoob, I., & Sheikh, F.D. (2012). Effect of machine dehairing on quality of pashmina fibre. *Indian Journal of Small Ruminants*, 18, 118–120.
- Bumla, N. A., Wani, S. A., Shakyawar, D. B., Sofi, A. H., Yaqoob, I., & Sheikh, F. D. (2012). Comparative study on quality of shawls made from hand and machine spun pashmina yarns. *Indian Journal of Fibre and Textile Research*, 37, 224-230.
- Caniato, F., Caridi, M., Castelli, C., & Golini, R. (2009). A contingency approach for SC strategy in the Italian luxury industry: Do consolidated models fit? *International Journal of Production Economics*. 120(1), 176-189.
- Caniato, F., Caridi, M., Castelli, C., & Golini, R. (2011). Supply chain management in the luxury industry: A first classification of companies and their strategies. *International Journal of Production Economics*. 133(2), 622-633.
- Carter, C.R., & Rogers, D.S. (2008). A framework of sustainable supply chain management: Moving toward new theory. *International Journal of Physical Distribution of Logistics Management*, 38, 360–387.
- Carter, C.R., Rogers, D.S., & Choi, T.Y. (2015). Toward the theory of the supply chain. *Journal of supply chain management*, 51(2), 89-97.
- Castelli, C., & Sianesi, A. (2015). Supply chain strategy for companies in the luxury-fashion market: aligning the supply chain towards the critical success factors, *International Journal of Retail and Distribution Management*, 43, (10-11), 940-966.
- Cavender, R., & Kincade, D. H. (2015). A luxury brand management framework build from historical review and case study analysis. *International Journal of Retail and Distribution Management*, 43(10-11), 1083-1100.
- Chaudhry, P.E., & Zimmerman, A. (2009). *The Economics of Counterfeit Trade: Government, Consumers, Pirates and Intellectual Property*. Springer.
- Chaudhry, P.E., & Stumpf, S.A. (2011). Consumer complicity with counterfeit products. *Journal of Consumer Marketing*, 28(2), 139-151.
- Chopra, S., & Meindl, P. (2016). *Supply chain management: strategy, planning, and operation* (6th ed.). Pearson.

Cherny-Scanlon, X. (2016). Putting glam into green: A case for sustainable luxury fashion. In S. Dhiman & J. Marques (Eds.), *Spirituality and Sustainability* (pp.183-197). Springer. https://link.springer.com/chapter/10.1007%2F978-81-322-2241-5_16

Choi, T.M., & Cai, Y.J. (2018). Impacts of lead time reduction on fabric sourcing in apparel production with yield and environmental considerations. *Annals of Operations Research*, 290, 521–542.

Christopher, M. (2011). *Logistics and supply chain management* (4th ed.). Pearson.

Costanigro, M., McCluskey, J.J., & Goemans, C. (2010). The economics of nested names: name specificity, reputations, and price premia. *American Journal of Agricultural Economics*, 92(5), 1339-1350.

Covarrubia, P. (2019). Geographical Indications of traditional handicrafts: A cultural element in a predominantly economic activity. *Internatinal Review of Intellectual Property and Competition Law*, 50, 441-466.

Croom, S., Romano, P., & Giannakis, M. (2000). Supply chain management: an analytical framework for critical literature review. *European Journal of Purchasing & Supply Management*. 6(1), 67-83.

Dam, L., & Petkova, B.N. (2014). The impact of environmental supply chain sustainability programs on shareholder wealth. *International Journal of Operations & Production Management*, 34, 586–609.

Das, D. (2018). Sustainable supply chain management in Indian organisations: An empirical investigation. *International. Journal of Production Research*, 56, 5776–5794.

Das, K. (2010). Prospects and Challenges of Geographical Indications in India, *The Journal of World Intellectual Property*, 13(2), 148-201.

Danese, P., Romano, P., & Vinelli, A. (2006). Sequences of improvement in supply networks: case studies from the pharmaceutical industry, *International Journal of Operations & Production Management*, 26(11), 1199-1222.

Dean, J. W., & Bowen, D. E. (1994). Management theory and total quality: Improving research and practice through theory development. *The Academy of Management Review*, 19(3), 392–418.

- Debnath, S. (2016). Unexplored Vegetable Fibre in Green Fashion. In S.S. Muthu & M.A. Gardetti (Eds.), *Green Fashion* (pp. 1-19). Springer. <https://link.springer.com/book/10.1007/978-981-10-0245-8>
- De Brito, M.P., Carbone, V., & Blanquart, C.M. (2008). Towards a sustainable fashion retail supply chain in Europe: Organisation and performance. *International Journal of Production Economics*, 114(2), 534–553.
- Defee, C.C., Stank, T.P., Esper, T.L., & Mentzer, J.T. (2009). The role of followers in supply chains. *Journal of Business Logistics*, 30(2), 65–84.
- Delmas, M., & Montiel, I. (2009). Greening the supply chain: When is customer pressure effective? *Journal of Economics and Management Strategy*, 18(1), 171–201.
- Dentoni, D., Menozzi, D., & Capelli, M.G. (2012). Group heterogeneity and cooperation on the geographical indication regulation: the case of the ‘Prosciutto di Parma’ consortium, *Food Policy*, 37(3), 207-216.
- Diabat, A., Govindan, K., & Panicker, V.V. (2012). Supply chain risk management and its mitigation in a food industry, *International Journal of Production Research*, 50(11), 3039-3050.
- Diesendorf, M. (2000). Sustainability and sustainable development. In D., Dunphy, J., Benveniste, A., Griffiths, P., Sutton (Eds.), *Sustainability: The Corporate Challenge of the 21st Century* (pp. 19–37), Allen & Unwin.
- Dokuzlu, S. (2016). Geographical indications: Implementation and traceability: Gemlik table olives. *British Food Journal*, 118(9), 2074-2085.
- Dubois, B., Czellar, S., & Laurent, G. (2005). Consumer segments based on attitudes toward luxury, *Marketing Letters*, 16(2), 115-128.
- Dumond, E. (2000). Value management: an underlying framework, *International Journal of Operations and Production Management*, 20(9), 1062-1077.
- Dybicz, P. (2004). Ethical consumption within critical social policy, *Journal of Progressive Human Services*, 15(2), 25-43.
- Eckerberg, K., & Mineur, E. (2003). The use of Local Sustainability Indicators: case studies in two Swedish municipalities. *Local Environment*, 8(6), 591-614.

Economic Survey (2016) Directorate of Economics and Statistics., Government of Jammu & Kashmir. <http://www.ecostatjk.nic.in/ecosurvey/Economic%20Survey%202016%20PDF.pdf>

Eisenhardt, K.M. (1989). Building theories from the case study research. *The Academy of Management Review*, 14(4), 532-550.

Ellram, L.M., & Cooper, M.C. (2014). Supply chain management: It's all about the journey, not the destination, *Journal of Supply Chain Management*, 50(1), 8-20.

Ertekin, Z.O., & Atik, D. (2015). Sustainable markets: Motivating factors, barriers, and remedies for mobilization of slow fashion. *Journal of Macromarketing*. 35(1), 53-69.

Ertekin, Z.O., & Atik, D. (2020). Institutional constituents of change for a sustainable fashion system. *Journal of Macromarketing*. 40(3), 362-379.

Eng, T.Y., & Bogaert, J. (2010). Psychological and cultural insights into consumption of luxury western brands in India, *Journal of Customer Behaviour*, 9(1), 55-75.

FAO. (2009). Linking People, Places and Products. E., Vandecandelaere, F., Arfini, G., Belletti, A., Marescotti, In A guide for promoting quality linked to geographical origin and sustainable Geographical Indications. <http://www.fao.org/3/i1760e/i1760e.pdf>

Fahimnia, B. Tang, C.S, Davarzani, H., & Sarkis, J. (2015). Quantitative models for managing supply chain risks: a review, *European Journal of Operations Research*, 247(1), 1-15.

Fan, Y., & Stevenson, M. (2018). A review of supply chain risk management: definition, theory, and research agenda, *International Journal of Physical Distribution & Logistics Management*, 48(3), 205-230.

Faust, M.-E. (2013). Cashmere: A lux-story supply chain told by retailers to build a competitive sustainable advantage. *International Journal of Retail & Distribution Management*, 41(11-12), 973–985.

Freise, M., & Seuring, S. (2015). Social and environmental risk management in supply chains: A survey in the clothing industry, *Logistics Research*, 8(2), 1-12.

Fernandez-Ferrín, P., Bande, B., Galan-Ladero, M. M., Martín-Consuegra, D., Díaz, E., Castro-Gonzalez, S. (2017). Geographical indication food products and ethnocentric tendencies: The importance of proximity, tradition, and ethnicity, *Journal of Cleaner Production*, 241, 118210.

- Fernández-Barcala, M., Gonzalez-Diaz, M., & Raymond, E. (2017). Contrasting the governance of supply chains with and without geographical indications: complementarity between levels. *Supply Chain Management: An International Journal*, 22(4), 305-320.
- Fetters, M.D., & Rubinstein, E.B. (2019). The 3 Cs of content, context, and concepts: A practical approach to recording unstructured field observations. *Annals of Family Medicine*, 17(6), 554-560.
- Fionda, A.M., & Moore, C.M. (2009). The anatomy of the luxury fashion brand. *Journal of Brand Management*, 16(5-6), 347-363.
- Fontefrancesco, M.F. (2012). Crafting the local: GIs, Jewellery, and Transformations in Valenza, Italy. *Social Analysis*, 56(3), 89-107.
- Foster Jr., S.T., Wallin, C., & Ogden, J. (2011). Towards a better understanding of supply chain quality management practices. *International Journal of Production Research*, 49(8), 2285-2300.
- Franck, R.R. (2001). *Silk, Mohair, Cashmere and other Luxury Fibres* (1st ed.). Woodhead Publishing Ltd.
- Franco, J.C., Hussain, D., & McColl, R. (2020). Luxury fashion and sustainability: looking good together. *Journal of Business Strategy*, 41(4), 55-61.
- Fulton, K., & Lee, S. (2013). Assessing sustainable initiatives of apparel retailers on the internet. *Journal of Fashion Marketing and Management*, 17(3), 353-366.
- Ganai, T. A. S., Misra, S. S., & Sheikh, F. D. (2011). Characterization and evaluation of Pashmina producing Changthangi goat of Ladakh. *Indian Journal of Animal Sciences*, 81(6), 592-599.
- Gangjee, D.S. (2017). Proving Provenance? Geographical Indications Certification and Its Ambiguities. *World Development*, 98, 12-24.
- Gardetti, M.A. (2016). Loewe: Luxury and sustainable management. In M. A. Gardetti & S.S. Muthu (Eds.) *Handbook of Sustainable Luxury Textiles and Fashion* (pp.1-16), Springer.
- Garvin, D.A. (1987). *Competing in the eight dimensions of quality*, Harvard Business Review, Sept.-Oct., 87(6), 101-109.

- Geelani, S.M., Ara, S., Mir, N.A., Bhat, S.J.A., & Mishra, P.K. (2016). Dyeing and fastness properties of *Quercus robur* with natural mordants on natural fibre, *Textiles and Clothing Sustainability*. <https://textclothsustain.springeropen.com/articles/10.1186/s40689-016-0019-0>
- Ghosh, P. (2016). Geographical Indications: A corner stone in poverty alleviation and empowerment in the Indian himalayan region. *National Academy Science Letters*, 39(4).
- Gibson, R.B. (2006). Beyond the pillars: Sustainability assessment as a framework for effective integration of social, economic and ecological considerations in significant decision-making. *Journal of Environment Assessment & Policy Management*, 8, 259–280.
- Gimenez, C., & Tachizawa, E.M. (2012). Extending sustainability to suppliers: A systematic literature review. *Supply Chain Management*, 17, 531–543.
- Godey, B., Pederzoli, D., Aiello, G., Donvito, R., Chan, P., Oh, H., Singh, R., Skorobogatykh, I.I., Tsuchiya, J., & Weitz, B. (2012). Brand and Country-of-origin effect on consumers' decision to purchase luxury products. *Journal of Business Research*. 65(10), 1461-1410.
- Gold, S., Seuring, S., & Beske, P. (2010a). The constructs of sustainable supply chain management: A content analysis based on published case studies. *Progress in Industrial Ecology, an International Journal*, 7(2), 114–137.
- Gold, S., Seuring, S., & Beske, P. (2010b). Sustainable supply chain management organizational resources: A literature review. *Corporate Social Responsibility and Environment Management*. 17(4), 230–245.
- Gopalan, R., & Sivakumar, S. (2007). Keeping Cashmere in Kashmir – The Interface between GI and TK, *Journal of Intellectual Property Rights*, 12, 581-588.
- Govindan, K., Seuring, S., Zhu, Q., & Azevedo, S.G. (2016). Accelerating the transition towards sustainability dynamics into supply chain relationship management and governance structures. *Journal of Cleaner Production*, 112(3), 1813–1823.
- Grassi, A. (2020). Art to enhance consumer engagement in the luxury fashion domain, *Journal of Fashion Marketing and Management*, 24(3), 327-341.
- Talib, A.H. (2015, 14 March) *Pashmina politics*.
<https://www.greaterkashmir.com/more/pashmina-politics>

- Guercini, S., & Ranfagni, S. (2013). Sustainability and luxury: The Italian case of a supply chain based on native wools. *Journal of Corporate Citizenship*, 52, 76-89.
- Hall, J., & Matos, S. (2010). Incorporating impoverished communities in sustainable supply chains. *International Journal of Physical Distribution & Logistics Management*, 40, 124–147.
- Harland, C., Lamming, R., Walker, H., Caldwell, N., Johnsen, T.E., Knight, L., Phillips, W., & Zheng, J. (2006). Supply management: is it a discipline? *International Journal of Operations and Production Management*, 26(7), 730-753.
- Haynes, J., Cabbage, F., Mercer, E., & Sills, E. (2012). The search for value and meaning in the cocoa supply chain in Costa Rica. *Sustainability*, 4(7), 1466-1487.
- Heine, K., & Berghaus, B. (2014). Luxury goes digital: how to tackle the digital luxury brand-consumer touchpoints, *Journal of Global Fashion Marketing*, 5(3), 223-234.
- Hellsten, U., & Klefsjö, B. (2000). TQM as a management system consisting of values, techniques and tools, *The TQM Magazine*, 12(4), 238-244.
- Ho, W., Zheng, T., Yildiz, H., & Talluri, S. (2015). Supply chain risk management: a literature review, *International Journal of Production Research*, 53(16), 5031–5069.
- Hung, K.P., Chen, A.H., Peng, N., Hackley, C., Tiwaskul, R.A., & Chou, C.L, (2011). Antecedents of luxury brand purchase intention. *Journal of Product and Brand Management*, 20(6), 457-467.
- Hulm, P., & Domeisen, N. (2008). Organic Cotton. *International Trade Forum*, 1(2), 30-31.
- Imasheva, A., Otinshiev, M., Alikhanov, D., & Daskalov, P. (2014). Development of Technology and means of cashmere down processing. *Bulgarian Journal of Agricultural Science*, 20(4), 980–987.
- Ishrat, S.I., Grigg, N.P., Jayamaha, N.P., & Pulakanam, V. (2018). Cashmere Industry: Value chains and sustainability. In C.K.Y., Lo & J. Ha-Brookshire (Eds.), *Sustainability in Luxury Fashion Business* (pp. 113–132). Springer. <https://www.springerprofessional.de/en/cashmere-industry-value-chains-and-sustainability/15760000>
- Ishrat, S.I., Grigg, N., Pulakanam, V., & Jayamaha, N. (2019) The role and significance of Geographical Indication for sustainability of Cashmere Industry. In proceedings of the International Conference on Industrial Technology and Management (pp. 7–11). IEEE Press.

Ishrat, S.I., Grigg, N.P., Bezuidenhout, C.N., & Jayamaha, N.P. (2020). Sustainability issues in the traditional cashmere supply chain: Empirical evidence from Kashmir, India. *Sustainability*, 12(24). <https://doi.org/10.3390/su122410359>

Jammu and Kashmir Population Census (2011). <https://www.census2011.co.in/census/state/jammu+and+kashmir.html>

Janker, J., & Mann, S. (2020). Understanding the Social Dimension of Sustainability in Agriculture: A Critical Review of Sustainability Assessment Tools. *Environment, Development and Sustainability*, 22, 1671–1691.

Jammu and Kashmir State Handloom Development Department (JKHDD) (n.d.)

<http://jkindustriescommerce.nic.in/jkhdcl.html>

Jena, P.R., & Grote, U. (2010). Changing Institutions to Protect Regional Heritage: A Case for Geographical Indications in the Indian Agrifood Sector. *Development Policy Review*, 28(2), 217-236.

Johnson, M.E. (2001). Learning from toys: lessons in managing supply chain risk from the toy industry. *California Management Review*, 43(3), 106-124.

Johnson, R.B., Onwuegbuzie, A.J., & Turner, L.A. (2007). Toward a Definition of Mixed Methods Research. *Journal of Mixed Methods Research*, 1(2), 112-133.

Jones, K.B., & Jones, J.P. (2018). Sufficient Desire: The Discourse of Sustainable Luxury. In C.K.Y., Lo & J. Ha-Brookshire (Eds.), *Sustainability in Luxury Fashion Business* (pp. 9–27), Springer. https://link.springer.com/chapter/10.1007%2F978-981-10-8878-0_2

Joy, A., Sherry, Jr. J.F., Venkatesh, A., Wang, J., & Chan, R. (2012). Fast Fashion, Sustainability, and the Ethical Appeal of Luxury Brands, *Fashion Theory*, 16(3), 273-295.

Jüttner, U., Christopher, M., & Godsell, J. (2010). A Strategic Framework for Integrating Marketing and Supply Chain Strategies. *The International Journal of Logistics Management*, 21(1), 104-126.

Kapferer, J.N., & Bastien, V. (2009). The specificity of luxury management: turning marketing upside down, *Journal of Brand Management*, 16(5), 311-322.

Kapferer, J.N. (2010). All that glitters is not green: The challenge of sustainable luxury. *European Business Review*, 40-45.

- Kapferer, J.N., & Michaut, A. (2015). Luxury and Sustainability: A common future? The match depends on how consumers define luxury. *Luxury Research Journal*, 1(1), 3-17.
- Kapferer, J.N., & Valette-Florence, P. (2016). Beyond rarity: the paths of luxury desire. How luxury brands grow yet remain desirable. *Journal of Product & Brand Management*, 25(2), 120-133.
- Kaplinsky, R. (2000). Globalisation and unequalisation: what can be learned from value chain analysis? *Journal of development studies*, 37(2), 117-146.
- Kashmir University (n.d.) <https://www.kashmiruniversity.net/roasterdetails.aspx?linked=100>
- Kaynak, H., & Hartley, J. (2008). A replication and extension of quality management into the supply chain. *Journal of Operations Management*, 26(4), 468-489.
- Ketchen, D.J., Jr. & Hult, G.T.M. (2007). Bridging organisation theory and supply chain management: The case of best value supply chains. *Journal of Operations Management*, 25, 573-580.
- Khan, O. (2015). Luxury consumption moves East. *Journal of Fashion Marketing and Management*, 19(4), 347-359.
- Kocabas, A.M., Yukseler, H., Dilek, F.B., & Yetis, U. (2009). Adoption of European Union's IPPC Directive to a textile mill: Analysis of water and energy consumption. *Journal of Environmental Management*, 91, 102-113.
- Kolk, A. (2016). The social responsibility of international business: From ethics and the environment to CSR and sustainable development. *Journal of World Business*, 51, 23-34.
- Kozlowsky, A. Bardecki, M., & Searcy, C. (2012). Environmental impacts in the fashion industry: a life cycle and stakeholder framework. *Journal of Corporate Citizenship*, 45, 17-36.
- Kulkarni, S.S., Bodake, U.M., & Pathode, G.R. (2011). Extraction of natural dye from Chili (*Capsicum annum*) for textile coloration. *Universal Journal of Environmental Research and Technology*, 1, 58-63.
- Kumar, S., Raizada, A., & Biswas, H. (2014). Prioritising development planning in the Indian semi-arid Deccan using sustainable livelihood security index approach. *International Journal of Sustainable Development and World Ecology*, 21(4), 332-345.

- Kumar, R., Shakyawar, D.B., Pareek, P.K., Raja, A.S.M., Prince, L.L.L, Kumar, S., & Naqvi, S.M.K. (2015). Development of PCR-Based Technique for Detection of Purity of Pashmina Fiber from Textile Materials, *Applied Biochemistry and Biotechnology*, 175, 3856-3862.
- Lakshmanan, A., Jose, S., & Chakraborty, S. (2016). Luxury Hair fibres for fashion industry In S.S. Muthu & M.A. Gardetti (Eds.), *Environmental Footprints and Eco-design of Products and Processes Sustainable Fibres for Fashion Industry* (pp. 1-38), Springer. <https://www.springerprofessional.de/en/luxury-hair-fibers-for-fashion-industry/9497924>
- Lal, C., Raja, A. S. M., Pareek, P. K., Shakyawar, D. B., Sharma, K. K., & Sharma, M. C. (2011). Juglans nigra: Chemical constitution and its application on pashmina (cashmere) fabric as a dye, *Journal of Natural Product and Plant Resources*, 1(4), 13-19.
- Latorre, C.H., Crecente, R.M.P., Martín, S.G., & García, J.B. (2013). A fast chemometric procedure based on NIR data for authentication of honey with protected geographical indication, *Food Chemistry*, 141(4), 3559-3565.
- LeMay, S., Helms, M.M., Kimball, B. & McMahon, D. (2017). Supply Chain Management: the elusive concept and definition. *The International Journal of Logistics Management*, 28(4), 1425-1453.
- Li, L. Su, Q., & Chen, X. (2011). Ensuring Supply Chain Quality Performance through applying the SCOR model, *International Journal of Production Research*. 49(1), 33-57.
- Li, M.Z., Ma, W.Z., & Chen, X.Y. (2014). Study on shrinkage of cashmere sweater kintted with high-count worsted yarns. *Textile Research Journal*, 84(11), 1200-1210.
- Li, Y., Zhao, X., Shi, D., & Li, X. (2014). Governance of sustainable supply chains in the fast fashion industry. *European Management Journal*, 32(5), 823-836.
- Lin, C., Kuei, C., & Chai, K. (2013). Identifying critical enablers and pathways to high performance supply chain quality management, *International Journal of Operations & Production Management*, 33(3), 347-370.
- Linderman, K. (2008). Six Sigma: definition and underlying theory. *Journal of Operations Management*. 26(4), 536-554.
- Linton, J.D., Klassen, R., & Jayaraman, V. (2007). Sustainable supply chains: An introduction, *Journal of Operations Management*, 25, 1075-1082.

- Lo, C.K.Y., & Ha-Brookshire, J. (2018). Opening: Sustainability and Luxury Brands. In C.K.Y., Lo & J. Ha-Brookshire (Eds.), *Sustainability in Luxury Fashion Business* (pp. 1–7), Springer. https://link.springer.com/chapter/10.1007/978-981-10-8878-0_1
- Lofland, J., Snow, D., Anderson, L., & Lofland, L.H. (2006). *Analyzing Social Settings: A Guide to Qualitative Observation and Analysis*. Wadsworth/Thomson Learning.
- López-Bayón, S. & González-Díaz, M. & Solís-Rodríguez, V. & Fernández-Barcala, M. (2018). Governance decisions in the supply chain and quality performance: The synergistic effect of geographical indications and ownership structure, *International Journal of Production Economics*, 197, 1-12.
- Macchion, L., Danese, P., & Vinelli, A. (2015). Redefining supply network strategies to face changing environments. A study from the fashion and luxury industry. *Operations Management Research*, 8(1-2), 15-31.
- MacCarthy, B.L., & Jayarathne, P.G.S.A. (2013). Supply network structures in the international clothing industry: differences across retailer types. *International Journal of Operations & Production Management*, 33(7), 858-886.
- McGregor, B.A., & Postle, R. (2004). Processing and quality of cashmere tops for ultrafine wool worsted blend fabrics. *International Journal of Clothing Science and Technology*, 16(1/2), 119-131.
- McGregor, B.A., & Butler, K.L. (2009). Implications to fleece evaluation derived from sources of variation contributing to cashmere fibre curvature. *Small Ruminant Research*, 81, 1–7.
- McGregor, B., & Schlink, A. (2014). Feltability of cashmere and other rare animal fibres and the effects of nutrition and blending with wool on cashmere feltability. *Journal of the Textile Institute*, 105(9), 927-937.
- McGregor, B. A. (2016). Weathering, fibre strength and colour properties of processed white cashmere, *Journal of the Textile Institute*, 107(9), 1193-1202.
- McGregor, B., & Naebe, M. (2016). Fabric handle properties of superfine wool fabrics with different fibre curvature, cashmere content and knitting tightness. *Journal of the Textile Institute*, 107(5), 562-577.
- Mattia, G. (2004). Balsamic vinegar of Modena. From product to market value: competitive strategy of a typical Italian product, *British Food Journal*, 106(10-11), 722-745.

- Mena, C., Humphries, A. & Choi, T.Y. (2013). Toward a theory of multi-tier supply chain management, *Journal of Supply Chain Management*, 49(2), 58-77.
- Mengüç, G.S., Özdil, N., & Hes, L. (2015). Prickle and handle properties of fabrics produced from specialty animal fibers. *Textile Research Journal*, 85, 2155–2167.
- Menrad, M., Stier, C.-H., Geldermann, H., & Gall, C.F. (2002). A study on the Changthangi pashmina and the Bakerwali goat breeds in Kashmir, India. Analysis of blood proteins polymorphisms and genetic variability within and between the populations. *Small Ruminant Research*, 43, 3-14.
- Mentzer, J.T., DeWitt, W., Keebler, J.S., Min, S., Nix, N.W., Smith, C.D., & Zachariah, Z. G. (2001). Defining supply chain management. *Journal of Business Logistics*, 22(2), 1-25.
- Mir, Y. A. & Darzi, M.A. (2017). Kashmir pashmina – A journey of standardization through geographical indications, *International Journal of Applied Research*, 3(5), 1-4.
- Moon, K.K.L., Yi, C.Y., & Ngai, E. W. T. (2012). An instrument for measuring supply chain flexibility for the textile and clothing company, *European Journal of Operations Research*, 222 (2), 191-203.
- Morais, D.O.C., & Silvestre, B.S. (2018). Advancing social sustainability in supply chain management: Lessons from multiple case studies in an emerging economy. *Journal of Cleaner Production*, 199, 222–235.
- Mudgil, D., & Barak, S. (2013). Synthetic Milk: A threat to Indian dairy industry. *Carpathian Journal of Food Science & Technology*, 5(1/2), 64-68.
- Mukherjee, A., Mitchell, W. & Talbot, F.B. (2000). The impact of new manufacturing requirements on production line productivity and quality at a focused factory, *Journal of Operations Management*, 18, 139-168.
- Muratovski, G. (2015). Sustainable consumption: Luxury branding as a catalyst for social change. In M.A. Gardetti & A.L. Torres (Eds.). *Sustainable luxury: Managing Social and Environmental Performance in Iconic Brands (1st ed.)*. Routledge. <https://doi.org/10.4324/9781351287807>
- Naebe, M., & McGregor, B. A. (2013). Comfort properties of superfine wool and wool/cashmere blend yarns and fabrics. *Journal of the Textile Institute*, 104(6), 634-640.

- Namgail, T., Van Wieren, S. E., & Prins, H. H. (2010). Pashmina production and socio-economic changes in the Indian Changthang: Implications for natural resource management. *Natural Resources Forum*, 34, 222-230.
- Neilson, J., Wright, J., & Aklimawti, L. (2018). Geographical Indications and value capture in the Indonesia coffee sector, *Journal of Rural Studies*, 59, 35-48.
- Nia, A., & Zaichkowsky, J.L. (2000). Do counterfeits devalue the ownership of luxury brands? *Journal of Product & Brand Management*, 9(7), 485-497.
- Nueno, J.L., & Quelch, J.A. (1998). The mass marketing of luxury, *Business Horizons*, 41(6), 61-68.
- Oliver, R.K., & Weber, M.D. (1982). Supply chain management: logistics catches up with strategy. In M.L. Christopher (Ed.), *Logistics: The strategic issues* (pp. 63-75). Chapman & Hall.
- Padmavathy, S., Sandhya, S., Swaminathan, K., Subrahmanyam, Y.V., Chakrabarti, T., & Kaul, S.N. (2003). Aerobic decolourization of Reactive Azo dyes in presence of various co substrates. *Chemical Biochemical Engineering*. 17(2), 147-151.
- Patchaiyappan, A., & Yogamoorthi, A. (2014). Isolation, application and biochemical characterization of colour component from *Tecoma stans*: A new cost effective and eco-friendly source of natural dye, *International Journal of Natural Products Research*, 4, 9-13.
- Patichol, P., Wongsurawat, W., & Johri, L. M. (2014). Modernizing tradition–Thai silk industry. *Strategic Direction*, 30(2), 31-33.
- Perry, P., & Towers, N. (2013). Conceptual framework development: CSR implementation in fashion supply chains. *International Journal of Physical Distribution and Logistics Management*, 43, 478–501.
- Pfal, S. Institutional sustainability. *International Journal of sustainable development*, 8(1-2), 80-96.
- Phau, I., & Prendergast, G. (2000). Consuming luxury brands: the relevance of the ‘rarity principle’, *Journal of Brand Management*, 8(2), 122-138.

- Phau, I., Sequeira, M., & Dix, S. (2009). To buy or not to buy a “counterfeit” Ralph Lauren polo shirt: The role of lawfulness and legality toward purchasing counterfeits. *Asia-Pacific Journal of Business Administration*, 1(1), 68-80.
- Porter, M.E. (1985). *Competitive advantage: Creating and sustaining superior performance*. Free Press.
- Prado, A.G.S., Torres, J.D., Faria, E.A. & Dias, S.C.L. (2004). Comparative adsorption studies of indigo carmine dye on chitin and chitosan. *Journal of Colloid and Interface Science*. 1(1), 43-47.
- Qian, K., Li, H., Cao, H., Yu, K., & Shen, W. (2010). Measuring the Blend Ratio of Wool/Cashmere Yarns Based on Image Processing Technology. *Fibres & Textiles in Eastern Europe*, 18(4), 35-38.
- Quality Manual (n.d.), Quality Manual for Enforcement of Kashmir Pashmina GI, Craft Development Institute, India. <http://cdisgr.org/public/Quality%20Manual%20KP.pdf>
- Quinn, F.J. (1997). “What’s the buzz?”, *Logistics Management*, 36(2), 43-7.
- Raja, A.S.M., & Thilagavathi, G. (2008). Dyes from the leaves of deciduous plants with a high tannin content for wool. *Coloration Technology*, 124, 285-289.
- Raja, A. S. M., Shakyawar, D. B., Pareek, P. K., & Wani, S. A. (2011). Production and performance of pure cashmere shawl fabric using machine spun yarn by nylon dissolution process. *Indian Journal of Small Ruminants*, 17, 203-206.
- Raja, A.S.M., Pareek, P.K., Shakyawar, D.B., Wani, S.A., Nehvi, F.A., & Sofi, A.H. (2012). Extraction of natural dye from saffron flower waste and its application on pashmina fabric. *Advances in Applied Science Research*, 3(1), 156-161.
- Raja, A. S. M., Shakyawar, D. B., Pareek, P. K., Temani, P., & Sofi, A. H. (2013). A Novel Chemical Finishing Process for Cashmere/PVA-Blended Yarn-Made Cashmere Fabric. *Journal of Natural Fibers*, 10(4), 381-389.
- Rajak, S., & Vinodh, S. (2015). Application of fuzzy logic for social sustainability performance evaluation: A case study of an Indian automotive component manufacturing organization. *Journal of Cleaner Production*, 108, 1184–1192.

- Rao, P., & Holt, D. (2005). Do green supply chains lead to competitiveness and economic performance? *International Journal of Operations and Production Management*, 25, 898–916.
- Raynaud, E., Sauvee, L., & Valceschini, E. (2005). Alignment between quality enforcement devices and governance structures in the agro-food vertical chains, *Journal of Management & Governance*, 9(1), 47-77.
- Reed, M.S., Fraser, E.D.G., & Dougill, A.J. (2006). An adaptive learning process for developing and applying sustainability indicators with local communities. *Ecological Economics*, 59(4), 406-418.
- Reefke, H., & Sundaram, D. (2017). Key themes and research opportunities in sustainable supply chain management – identification and evaluation. *Omega*. 66, 195-211.
- Reeves, S., Kuper, A., & Hodges, D.B. (2008). Qualitative research: Qualitative research methodologies: Ethnography, *British Medical Journal*, 337, 512-514.
- Reserve Bank of India (2021) <https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=19417>
- Resta, B., Gaiardelli, P., Pinto, R., & Dotti, S. (2016). Enhancing environmental management in the textile sector: An Organizational-Life Cycle Assessment Approach. *Journal of Cleaner Production*. 135, 620-632.
- Ricciotti, F. (2020). From value chain to value network: a systematic literature review. *Management Review Quarterly*, 70, 191-212.
- Rinaldi, F.R., & Testa, S. (2015). Ethics and Fashion: towards a responsible value chain, In F.R., Rinaldi, & S. Testa, *The responsible fashion company: Integrating ethics and aesthetics in the value chain* (pp. 215-224). Routledge. <https://www.taylorfrancis.com/chapters/edit/10.4324/9781351285889-10/ethics-fashion-towards-responsible-value-chain-francesca-romana-rinaldi-salvo-testa>
- Robinson, C., & Malhotra, M. (2005). Defining the concept of supply chain quality management and its relevance to academic and industrial practice. *International Journal of Production Economics*, 96(3), 315-325.
- Ryder, M.L. (1984). Prospects for cashmere production in Scotland, *Wool Record*, 37-43.
- Rydin, Y., Holman, N., & Wolff, E. (2003). Local Sustainability Indicators. *Local Environment*, 8(6), 581-589.

- Saldana, J. (2009). *The Coding Manual for Qualitative Researchers*. Sage.
- Sarkis, J., Gonzalez-Torre, P., Adenso-Diaz, B. (2010). Stakeholder pressure and the adoption of environmental practices: The mediating effect of training. *Journal of Operations Management*, 28, 163–176.
- Scopelliti, M., Molinario, E., Bonaiuto, F., Bonnes, M., Cicero, L., De Dominicis, S., Bonaiuto, M. (2018). What makes you a “hero” for nature? Socio psychological profiling of leaders committed to nature and biodiversity protection across seven EU countries, *Journal of Environmental Planning and Management*, 61, 970–993.
- Scotland, J. (2012). Exploring the Philosophical Underpinnings of Research: Relating Ontology and Epistemology to the Methodology and Methods of the Scientific, Interpretive, and Critical Research Paradigms. *English Language Teaching*, 5(9), 9-16.
- Seuring, S., & Müller, M. (2008a). From literature review to a conceptual framework for sustainable supply chain management, *Journal of Cleaner Production*, 16(15), 1699-1710.
- Seuring, S., Sarkis, J., Müller, M., & Rao, P. (2008b). Sustainability and supply chain management – An introduction to the special issue, *Journal of Cleaner Production*, 16(15), 1545-1551.
- Shah, S.M., Lütjen, M., & Freitag, M. (2021). Text mining for supply chain risk management in the apparel industry. *Applied Sciences*, 11, 2323.
- Shakyawar, D.B., Raja, A.S.M., Kumar, A., Pareek, P.K., & Wani, S.A. (2013). Pashmina fibre – Production, characteristics and utilization. *Indian Journal of Fibre & Textile Research*, 38, 207-214.
- Shakyawar, D.B., Raja, A.S.M., Wani, S.A., Kadam, V.V., & Pareek, P.K. (2015). Low-stress mechanical properties of pashmina shawls prepared from pure hand spun, machine spun and pashmina-wool blend yarn. *The Journal of the Textile Institute*. 106(3), 327-333.
- Sharma, K.K., Pareek, P.K., Raja, A.S.M., Temani, P., Kumar, A., Shakyawar, D.B., & Sharma, M.C. (2013). Extraction of natural dye from kigelia pinnata and its application on pashmina (cashmere) fabric. *Research Journal of Textile and Apparel*, 17(2), 28-32.
- Sheikh, F. A. (2014). Exploring informal sector community innovations and knowledge appropriation: A study of Kashmiri pashmina shawls. *African Journal of Science, Technology, Innovation & Development*, 6(3), 203-212.

- Singh, S. (2015). Changthang to Srinagar: The Pashmina trade, *New Man International Journal of Multidisciplinary Studies*, 2(4), 41-50.
- Simchi-Levi, D., Kaminsky, P., & Simchi-Levy, E. (2003). *Designing and Managing the Supply Chain* (3rd Ed.). McGraw Hill.
- Slade, P., Michler, J.D., & Josephson, A. (2019). Foreign Geographical Indications, Consumer Preferences, and the Domestic Market for Cheese, *Applied Economic Perspectives and Policy*, 41(3), pp. 370-390.
- Smith, A. (1776) in Cannan, E. (Ed.), *The Wealth of Nations* (1937), Modern Library, New York.
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333-339.
- Soini, K., & Birkeland, I. (2014). Exploring the scientific discourse on cultural sustainability. *Geoforum*, 51, 213–223.
- Soltani, E., Azadegan, A., Liao, Y-Y., & Philips, P. (2011). Quality performance in a global supply chain: finding out the weak link, *International Journal of Production Research*, 49, 269-293.
- Spangenberg, J.H., Pfahl, S., & Deller, K. (2002). Towards indicators for institutional sustainability: Lessons from an analysis of Agenda 21. *Ecological Indicators*, 2, 61–77.
- Srivastava, S.C. (2003). Geographical Indications and Legal Framework in India, *Economic and Political Weekly*, 38(38): 4022-4033.
- Staake, T. Thiesse, F., & Fleish, E. (2009). The emergence of counterfeit trade: a literature review, *European Journal of Marketing*, 43(3-4), 320-349.
- Stock, J.R., & Boyer, S. L. (2009). Developing a consensus definition of supply chain management: A qualitative study. *International Journal of Physical Distribution & Logistics Management*, 39(8), 690-711.
- Talib, F., Rahman, Z., & Qureshi, M.N. (2011). A study of total quality management and supply chain management practices. *International Journal of Productivity and Performance Management*, 60(3), 268-288.

Tang, C.S., & Zhou, S. (2012). Research advances in environmentally and socially sustainable operations, *European Journal of Operations Research*, 223, 585–594.

Tang, C.S. (2006). Perspectives in supply chain risk management. *International Journal of Production Economics*, 103(2), 451-488.

Tate, W.L., Ellram, L.M., & Kirchoff, J.F. (2010). Corporate social responsibility reports: A thematic analysis related to supply chain management. *Journal of Supply Chain Management*, 46, 19–44.

Temani, P., Shakyawar, D.B., Ammayappan, L., Goyal, V., & Wani, S.A. (2011). Standardization of dyeing condition of cochineal extract on pashmina yarn, *Journal of Textile Association*, 72, 96–98.

The Handlooms Act, 1985 (n.d.) Ministry of Textiles, Government of India. <http://texmin.nic.in/acts>

Towers, N., Perry, P., & Chen, R. (2013). Corporate social responsibility in luxury manufacturer supply chains: An exploratory investigation of a Scottish cashmere garment manufacturer. *International Journal of Retail and Distribution Management*, 41, 961–972.

Tummala, R., & Schoenherr, T. (2011). Assessing and managing risks using the Supply Chain Risk Management Process (SCRMP), *Supply Chain Management: An International Journal*, 16(6), 474-483.

Turcu, C. (2013). Re-thinking sustainability indicators: local perspectives of urban sustainability, *Journal of Environmental Planning and Management*, 56(5), 695-719.

Umbreen, S., Ali, S., Hussain, T. & Nawaz, R. (2008). Dyeing properties of natural dyes extracted from turmeric and their comparison with reactive dyeing. *Research Journal of Textile and Apparel*, 12(5), 1-11.

UN Agenda 2030 (n.d.).

https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf

UN SDG. Sustainable Development Goals (n.d.)

<https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

United Nations Sustainability Indicators (n.d.) <https://unstats.un.org/sdgs/metadata/>

- Vajnhandl, S., & Vahl, J.V. (2014). The status of water reuse in European textile sector. *Journal of Environment Management*, 141, 29–35.
- Vaismoradi, M., Jones, J., Turunen, H., & Snelgrove, S. (2016). Theme development in qualitative content analysis and thematic analysis. *Journal of Nursing Education and Practice*, 6, 100–110.
- Vandecandelaere, E., Samper, L.F., Rey, A., Daza, A., Mejía, P., Tartanac, F., & Vittori, M. (2021). The Geographical Indication Pathway to Sustainability: A Framework to Assess and Monitor the Contributions of Geographical Indications to Sustainability through a Participatory Process. *Sustainability*, 13, 7535.
- Veblen, T. (2004). Conspicuous consumption. In D. L. Purdy (Ed.), *The rise of fashion: A reader*. Minneapolis: University of Minnesota Press.
- Vickers, S. J., & Renand, F. (2003). The Marketing of Luxury Goods: An exploratory study – three conceptual dimensions, *The Marketing Review*, 3(4), 459-478.
- Vittori, M. (2010). The International Debate on Geographical Indications (GIs): The Point of View of the Global Coalition of GI Producers, *The Journal of World Intellectual Property*, 13, 304-314.
- Voss, C., Tsikriktsis, N., & Frohlich, M. (2002). Case research in operations management. *International Journal of Operations and Production Management*, 22(2), 195-219.
- Waas, T., Hugé, J., Verbruggen, A., & Wright, T. (2011). Sustainable development: A bird's eye view. *Sustainability*, 3, 1637–1661.
- Waldron, S., Brown, C., & Komarek, A. M. (2014). The Chinese cashmere industry: A global value chain analysis. *Development Policy Review*, 32(5), 589-610.
- Wagner, S.M., Mizgier, K.J., & Arnez, P. (2014). Disruptions in tightly coupled supply chain networks: The case of the US offshore oil industry. *Production Planning & Control*, 25(6), 494-508.
- Wang, Y., Lin, J., & Choi, T-M. (2020). Gray market and counterfeiting in supply chains: A review of the operations literature and implications to luxury industries, *Transportation Research Part E: Logistics and Transportation Review*, 133.

- Wani, S.A., Wani, M.H., Wani, G.M., Gall, C., & Geldermann, H. (2004). Population Dynamics and Production Traits of *Changthangi Goats* in Ladakh, *Indian Journal of Small Ruminants*, *10*(1), 80-83.
- Wani, S.A., Wani, M.H., & Yusuf, S. (2009). Economics of Pashmina based trans-humane production system in cold arid region of Jammu and Kashmir, *Indian Journal of Agricultural economics*, *64*(2), 229-245.
- Wani, S.A., Sofi, A.H., Shakyawar, D.B., Yaqoob, I. Matto, F.A., & Malik, A.H. (2013). Fabrication of innovative charkha for pashmina spinning and its impact assessment. *The Journal of the Textile Institute*, *104*, 1141-1144.
- Wani, S.A., Shaheen, F.A., Baba, S.H., Naqash, F., & Manzoor, M. (2014). Value chains for livestock products in Himalayan Mountains: Studies from Jammu and Kashmi, *Industrial Journal of Agricultural Economics*, *69*(3), 280-289.
- Wani, S.A., Sheheen, F.A., Baba, S.H., Naqash, F., & Manzoor, M. (2014). Value chains for livestock products in Himalayan Mountains: Studies from Jammu and Kashmir, *Indian Journal of Agricultural Economics*, *69*(3), 280-289.
- Whetten, D.A. (1989). What constitutes a theoretical contribution? *Academy of Management Review*, *14*(4), 490-495.
- Wiengarten, F., Lo, C.K.Y., & Lam, J.Y.K. (2017). How does sustainability leadership affect firm performance? The choices associated with appointing a chief officer of corporate social responsibility, *Journal of Business Ethics*, *140*(3), 477-493.
- Wilcock, A.E., & Boys, K.A. (2014). Reduce product counterfeiting: An integrated approach. *Business Horizons*, *57*, 279-288.
- Wilke, R., & Zaichkowsky, J.L. (1999). Brand imitation and its effects on innovation, competition, and brand equity, *Business Horizons*, *42*(6), 9-18.
- Wong, C-Y., & Elbegsaikhan, M. (2020). Geographical Indications in Development Contexts: Function, supply chain and pursuit of rural industrial development. *The journal of World Intellectual Property*, *23*, 712-735.
- Yang, Y., Han, H., & Lee, P.K.C. (2017). An exploratory study of the mechanism of sustainable value creation in the luxury fashion industry. *Sustainability*, *9*(4), 483

- Yaqoob, I., Sofi, A. H., Wani, S. A., Sheikh, F. D., & Bumla, N. A. (2012). Pashmina shawl—A traditional way of making in Kashmir. *Indian Journal of Traditional Knowledge*, *11*(2), 329-333.
- Yawar, S.A., & Seuring, S. (2017). Management of social issues in supply chains: A literature review exploring social issues, actions and performance outcomes, *Journal of Business Ethics*, *141*, 621–643.
- Yeoman, I. (2011). The changing behaviours of luxury consumption. *Journal of Revenue and Pricing Management*. *10*, 47-50.
- Yin, R. K. (2011). *Qualitative research from start to finish*. The Guilford Press.
- Zhai, T.T., & Chang, Y.C. (2019). Standing of environmental public-interest litigants in China: Evolution, obstacles and solutions. *Journal of Environmental Law*, *30*, 369–397.
- Zhu, Q., & Sarkis, J. (2004). Relationships between operational practices and performance among early adopters of green supply chain management practices in Chinese manufacturing enterprises, *Journal of Operations Management*, *22*(3), 265- 289.
- Zhu, Q., Sarkis, J., & Lai, K-H. (2007). Initiatives and outcomes of green supply chain management implementation by Chinese manufacturers, *Journal of Environmental Management*, *85*, 179-189.
- Zhu, K., Zhang, R.Q., & Tsung, F. (2007). Pushing quality improvement along supply chains, *Management Science*, *53*(3), 421-436.
- Zutshi, C. (2009). "Designed for Eternity": Kashmiri Shawls, Empire, and Cultures of Production and Consumption in Mid-Victorian Britain. *Journal of British Studies*, *48*(2), 420-440.

APPENDIX A Cashmere Retail Websites

https://www.cashmere.com/
https://cashmerecompany.co.nz/
https://www.elleandriley.com/
https://tolagabay.nz/
https://cashmere4u.com/
https://www.thepashminastore.com/
https://pashminacrafts.com/
https://chyangrapashmina.com/
https://www.kashmirbox.com/collections/craft-pashmina
https://kashmirhandmade.com/
https://www.purekashmir.com/
https://kashmirpashminagi.com/
https://kashmirloom.com/
https://www.kashmirseasons.com/collections/pashmina-shawls
https://www.pashminawear.com
https://www.pashminanz.co.nz/
https://pashminaatelier.com/
https://soulweaves.com/
https://naadam.co/
https://carolchugani.com/
https://azezana.net/material/cashmere/
https://www.warm-me.com/
https://www.cashmere-culture.com/
https://mirrorintheskyshop.com/
http://www.cashmereessentials.com/
http://www.bridgerandwilliams.com/
https://knuefermann.co.nz/collections/all/cashmere
https://www.woolovers.com.au/cashmere
https://lainghome.com/collections/cashmere
https://authenticcashmere.com
https://www.pashmina.de

1. Process related

- 1.1 How significant is this process for the final product?
- 1.2 How long does it take for the process to complete?
- 1.3 What is the skill level required?
- 1.4 Are there any specific requirements associated with the process?
- 1.5 Which factors play critical role in the successful outcome for the process? How much experience do you have dealing with the process?
- 1.6 Are there any standards followed? If yes, which ones?
- 1.7 What difficulties do you face in the process? Are they addressed/communicated with others?
- 1.8 Where is the process held? How far (time/location) from the previous or subsequent processes? Can the process run in parallel with other processes?
- 1.9 Do you have expertise in a specific process or multiple processes?

2. Product specific

- 2.1 What types of products do you deal with?
- 2.2 How long does it take to accomplish the tasks you are involved with for each product?
- 2.3 Explain different considerations you have for each product type? Any unique aspects?
- 2.4 What measures/steps do you take to achieve consistency in the product?

3. Approach based

- 3.1 Do you follow a specific routine or pattern in your work?
- 3.2 Do you have knowledge about the approach used other than your own expertise? If yes, would you switch to the other approach? If yes, why?
- 3.3 What are the challenges you face? How do you minimise them?
- 3.4 What is the level of authority you have in decision making towards the approach/process you are involved in?
- 3.5 Are you satisfied with the present way of functioning?

4. Concern oriented

- 4.1 Do you have any concerns with the existing procedures involved with the process?
- 4.2 Are you aware of any environmental issues associated with the process? If yes, can you propose/suggest a mechanism to address it?
- 4.3 Are you concerned about any other process (other than yours) which may impact your way of working?
- 4.4 In your opinion, what are three major issues/challenges impacting the cashmere industry?

5. Perception based

- 5.1 What is your perception about the significance of the process you are involved in?
- 5.2 In your opinion, what are the important processes (other than yours) for different cashmere products?

1. Product specific

- 1.1 What types of products do you manufacture?
- 1.2 What is the market share for such products in industry locally or globally?
- 1.3 What is the target market for the products?
- 1.4 Do you cater to a niche market?
- 1.5 Have you diversified your product range?
- 1.6 Do you manufacture blended products? If yes, what are the blending ratios? Do you deal with natural or synthetic fibres?
- 1.7 What resources do you need to manufacture products?
- 1.8 Are there any product specific logistics requirement? If yes, what are they?
- 1.9 Do you follow industry standards? If yes, what are they else why not?
- 1.10 What is your distribution channel?
- 1.11 Do you share information with your partners? If yes, to what extent?

2. Approach based

- 2.1 Which manufacturing approach (traditional/modern/GI) do you use and why?
- 2.2 What is the scale of your operations?
- 2.3 How long have you been using this approach?
- 2.4 What are the major benefits of using the preferred approach?
- 2.5 Any downside with the existing approach? If yes, what is it?
- 2.6 Do you follow a production plan?
- 2.7 Do you consult with artisans in the production process? If yes, how does it impact in your decision making?

3. Consumer related

- 3.1 How do you know consumer preferences? How significant is it in your work?
- 3.2 How do you get market information for your products? How reliable is the information source?
- 3.3 How do you reflect on changing consumer trends? What challenges do you face with it?
- 3.4 How quality is assured in the products from consumers and manufacturing perspective?

4. Sustainability aspects

- 4.1 Are you aware of sustainability aspects in your operations?
- 4.2 Are existing operations sustainable? Why or why not?
- 4.3 What do you do with the scrap material? How recycling is carried out, if any?
- 4.4 What is the most important factor for your operations among; well-being of artisans, environmental considerations and financial gains?

5. Concern oriented

- 5.1 Do you have any concerns with existing manual and mechanical procedures involved in various cashmere processing stages?
- 5.2 In your opinion, among all the processes, what are the most important aspects that require immediate attention to achieve sustainable cashmere operations.
- 5.3 Are you aware of any environmental issues associated with the processes? If yes, can you propose/suggest a mechanism to address it?
- 5.4 In your opinion, what are the three major issues/challenges impacting the present-day cashmere industry?

Interview Questions: Suppliers

1. How do you procure cashmere fibre? Please explain the process?
2. How has mechanisation affected the cashmere fibre upstream in the chain?
3. What is the difference between cashmere fibre requirements of traditional and modern manufacturers?
4. How is cashmere fibre quality assessed?
5. How can cashmere fibre supply be made sustainable*?

Interview Questions: Spinners

1. What is the significance of spinners in present day spinning practice?
2. What is the economic impact of the shift in manufacturing practices on the spinners?
3. How has mechanisation changed the social dynamics of the spinning community?
4. How has shift in yarn blending affected the spinning practice?
5. What are the issues and challenges in fibre processing?
6. What is the impact of fibre blending on product quality?
7. How can traditional spinning practices be integrated with modern spinning approaches for sustainable operations?

Interview Questions: Weavers

1. What is the significance of weavers in present day weaving practice?
2. What is the economic impact of the shift in the manufacturing practices on weavers?
3. How has mechanisation changed the social dynamics of the weaving community?
4. How has shift in yarn spinning affected the weaving practice?
5. How is quality assessed in weaving practice?
6. How can traditional weaving practices be integrated with modern production approaches for sustainable operations?
7. What is the impact of globalisation on weaving practice in cashmere industry?

Interview Questions: Other Artisans

1. How has mechanisation affected the process you are involved with?
2. What is the economic impact of the shift in cashmere practices on the artisans?
3. How has social dynamics changed in the artisan community?
4. How has shift in the process affected the environment?
5. How is quality assessed in the process?
6. What is the impact of the process on product quality?
7. How can traditional practices be integrated with modern approaches for sustainable operations?

Interview Questions: Manufacturer

1. How has mechanisation affected manufacturing practices in cashmere industry?
2. What is the impact of present-day manufacturing practices on the environment?
3. To what extent artisans are affected with the shift in manufacturing practices?
4. How has mechanisation affected the weaving practices?
5. What is the impact on yarn spinning?
6. How is quality assessed at various production stages?
7. How can traditional practices be integrated with modern production approaches?

Interview Questions: Retailers/Exporters

1. What is your target consumer market?
2. What are the most saleable cashmere products in various markets?
3. Explain how market trends are established in the industry?
4. How varied consumer preferences affect the cashmere industry?
5. Place the actors in the order of their significance in cashmere chains?
[Choices: Supplier, Manufacturer, Artisan (any specific category) and Retailer]
6. Please provide your perspective on the selection.

Interview Questions: Govt. Officials

1. What is the significance of the traditional cashmere industry in the region?
2. What is the impact of mechanisation on the traditional cashmere industry?
3. To combat the threat from mechanisation, what initiatives are taken to support the traditional cashmere industry?
4. How compliance with industry standards is ensured?
5. What support is provided to the traditional cashmere manufacturers to augment their market presence?
6. In regard to globalisation, what government policies are in place to ensure sustainability in the cashmere industry?

APPENDIX E Classification of Codes in NVivo

Codes and Categories	Files	References
Cashmere Industry	25	718
Historial Significance in the Region	6	12
Major source of income	2	7
Effect of Industry Developments on Processes and Products	20	234
Processes	20	163
Environmental	6	16
Carbon footprint	1	3
Fossil fuel consumption	1	2
Process specific	1	1
Chemical treatment	3	11
Blended yarn processing	1	1
Limited natural dyeing options	1	4
Use of synthetic dyes	2	6
Impact on ecology	4	5
Chemical waste	2	2
Improper drainage system	1	1
Fibre concerns	13	68
Blending issues	4	8
Abundance of blended fibre	2	3
Lack of distinction between pure and adulterated fibre	3	5
Over dependence on Experience	8	22
Lack of testing mechanism	4	5
Manual inspections	3	8
Reliance on traditional approaches	6	6
Unavailability of genuine raw material	5	17
Altered raw material procurement mechanism	3	8
Cashmere goat cloning	2	3
High raw material cost	2	2
Paradigm shift in practices	2	2

Raw material access issues	2	2
Unknown raw material	7	21
Fibre Blending	4	4
Limitations of artisans	1	4
Unknown blending source	4	13
Spinning Issues	6	16
Covert spinning operations	3	5
Defying legalities	1	2
Widespread menace	2	3
Lack of buyers of hand spun yarn	3	7
Inconsistent outputs	2	2
Time consuming manual spinning process	3	5
Unaffected processes	5	8
Weaving Aspects	13	55
Government Legislations	3	6
Handicraft Act 1978	1	1
Handlooms Act 1985	2	5
Illegal Weaving Activities	12	24
Artisans Union	3	7
Decreasing handlooms	2	2
Equipment misuse	5	5
New cashmere hubs	2	3
Protests against mechanisation	4	6
Increased Productivity	5	17
Easy processing	3	4
Efficient production	3	5
Mass scale production	4	8
New product designs	2	8
Different markets	1	1
Increasing competition	1	1
Product variety	2	6
Products	12	77

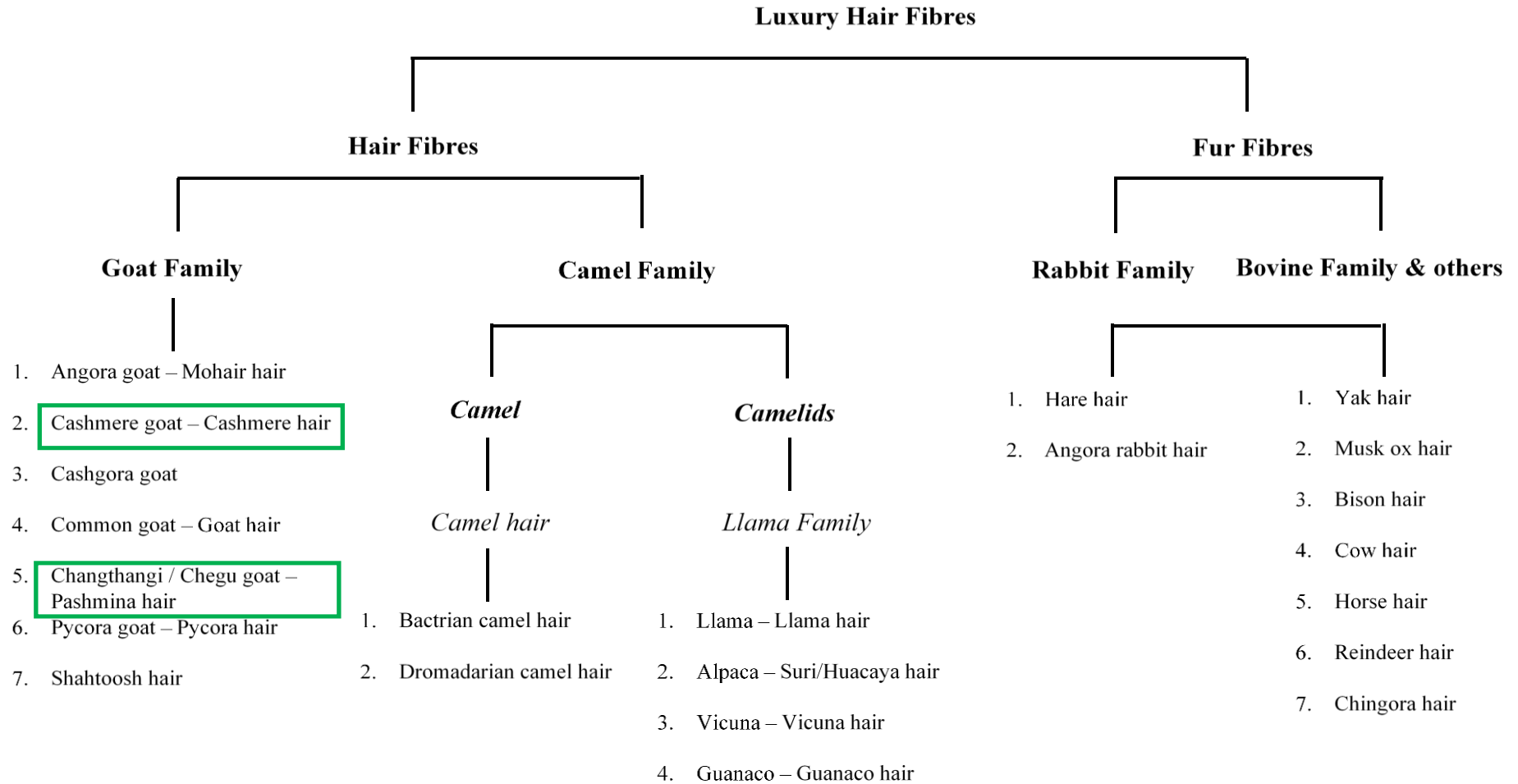
Sub-standard products	11	60
Improper labelling	2	2
Insignificant emphasis on labelling	2	2
Unconcerned artisans	1	1
Inconsistent practices	3	9
Sensory skills	1	2
Significance of Experience	3	9
Visual inspection	2	4
Lack of product durability	6	29
Intrusion of mechanisation	4	9
Short product life span	6	13
Yarn fragility	2	7
Product Imitations	6	14
Coarse output	3	7
Lack of policy implementation	1	1
multiple production approaches	2	2
Varied Markets	5	17
Increasing domestic markets	4	7
Increased demand for different product types	2	2
Lucretive overseas markets	4	10
Entering new markets	1	2
Global Presence	3	4
Growing demand for hand made products	1	1
Effect of Industry Developments on Stakeholders	23	472
Artisans	15	190
Financial Challenges	13	91
Cashflow Issues	3	6
Delayed Payments	1	1
Demonitization	1	2
Corruption	8	22
Bribery	2	2
Influence of power	4	6

Legitimising counterfeit products	3	6
Vested interests	5	5
Downward Pressure on Wages	8	38
Cashmere as alternate business	1	5
Drop in artisan remunerations	5	9
Low returns for artisans	5	15
Stagnant wages	3	9
Improper profit sharing	1	2
Financial dependency on manufacturer	1	1
Lack of consideration for artisans	1	1
Limited Artisan Resources	3	6
Lack of funds	1	1
Logistical Constraints	3	5
Rising Unemployment	8	17
Diminishing work opportunities for other artisans	4	6
Fewer jobs for spinners	5	6
Job loss for traditional weavers	2	5
Health hazard	2	10
Blended yarn dust	1	6
Breathing problems	1	5
Susceptible to infections	1	1
Long work hours	2	4
Eyesight problems	1	3
Secluded from social interactions	1	1
Social Concerns	11	89
Alternate options for artisans or the lack thereof	8	25
Apprehension of indulging in illegal activities	1	4
Options for younger generation	2	4
Other options for artisans	7	17
Artisans leaving their cultural heritage	6	18
Craft on the verge of extinction	5	6
Disinterest among artisans	4	8

Not passing on the craft to the next generation	4	4
Disempowering women spinners	6	15
Deprived of work	4	7
Vulnerable community	5	8
Hard hit weaving community	8	31
Exploitation	3	4
Hierarchy driven	3	4
Lack of artisan honour	5	12
Losing the significance of traditional weaving	4	7
Consumers	10	45
Product Awareness	7	21
Exclusivity	4	11
Niche clientele	2	2
Status symbol	1	1
Unique craft	3	6
Innumerable options	4	10
Changing consumer preferences	3	6
Fashion statement	2	4
Trust or the lack thereof	7	24
Consumer concerns	4	10
Counterfeit products	2	4
Over dependence on trust	2	6
Ethical aspects	6	14
Stakeholders' responsibility	4	5
Traceability mechanism	2	2
Government Institutions	22	237
Artisans' Expectations	10	27
Process Based	8	15
Abolish mechanised processing	5	9
Chanelise processes	2	3
Ensure accountability	1	1
Strengthen the traditional brand	1	2

Stakeholder Related	3	9
Empower women spinners	1	1
Establish committees at the ground level	1	2
Provide pension to artisans	1	1
Provide tax rebate	1	1
Standardise remunerations	1	4
Functional Constraints	12	31
Policy implementation or the lack thereof	7	23
Ineffective government measures	5	12
Not banning mechanised cashmere processes	4	5
Red tapism	4	7
Bureaucratic functioning	1	2
Lack of interdepartmental coordination	2	3
Geographical Indications	11	134
Apprehension among stakeholders	4	22
Asthetical aspects	1	2
Conflict of interest among stakeholders	2	3
Fear of losing brand identity	2	4
Fear of losing capital on cashmere investment	1	1
Limited beneficiaries	2	4
Low but positive response	2	6
MoU	1	2
Global recognition	6	19
Mark of credibility	4	4
Product Traceability	3	4
Support for Artisans	2	6
Quality Standards	7	62
Crafts Development Institute	2	3
Encouraging traditional processes	2	3
Expert consultants	3	5
Process based testing	4	7
Sophisticated Technology	4	16

Stringent testing crieteria	5	20
Various labelling options	3	8
Registration Process	4	20
Channelling through NGO	2	4
Landmark decision	1	1
Long and hard fought battle	1	3
Need of the hour	3	6
Political dimension	2	4
Resistance from competitors	2	2
Lack of Owership	8	30
Insufficient marketing of genuine cashmere products	5	20
Ineffective promotion of GI	4	10
Lack of foresightedness	4	4
Lack of coordination between institutions and artisans	5	9
Communication gap	2	3
Ineffective traceability of loan amount	1	2
Insufficient measures by Govt.	2	3
Support Mechanism	6	15
Educational Programms	3	8
Cashmere industry-based qualifications	1	5
Encouraging young cashmere entrepreneurs	3	3
Financial Assistance	4	7
Govt aid for cashmere development	2	2
Loans for traditional cashmere development	3	5





Faculty of Veterinary Sciences and Animal Husbandry
Shuhama, Alusteng Srinagar- 190006
Tele fax: 0194-2262207

To Whom it may Concern

Given to understand that there has been some doubts raised that wool and pashmina are alike fibres and can be processed in a similar manner, Accordingly, it is clarified as:

Wool may be defined as the **fibers from sheep body** which is soft, warm and can be conveniently spun into cloth. It has been defined differently in different dictionaries as:

Encyclopedia Britannica defines wool as a thick covering or **coat of the domestic sheep**, consists of a mass of specialized fibres. *Illustrated World Encyclopedia* has defined wool as the **soft curly hair of sheep** which is used to make cloth. *Webster Universal dictionary* defines wool as soft elastic hair with scaly fibres forming the **fleece of sheep**, used in the manufacture of many textile fibres.

From all these definitions, it is clear that wool is fibre from sheep's body which is soft, warm, crimpy, wavy, scaly and can be easily spun into many kinds of yarn to produce different types of clothes.

In contrast to that, pashmina, a specialty hair fibres is one of the finest natural fibre among animal origin. Because of its special characteristics, it is called as a "prince of specialty hair fibres". Speciality hair fibres may be defined as the textile fibres obtained from certain animals of goat, rabbit and camel families; rarer than more commonly used fibres and are valued for some desirables properties as fine diameter, lusture and ability to impart pleasing hand (characteristics perceived by handling). *Encyclopedia of textiles (1980)* defines speciality hair fibres as the rare animal fibres which possess special qualities of fineness and lusture. Pashmina is the down fibres or undercoat derived from domestic goat known as *Capra hircus*, which is native to India to Asia. As per American Society for Testing and Material (ASTM), pashmina is a down (undercoat) fibre **derived from cashmere goats** with a diameter of 30 microns or less. As per **US Standards**, pashmina is a fine undercoat **produced by cashmere goat** whose average fiber diameter should not exceed 19 microns. Whereas **European Union Directives** defines pashmina as a **hair from cashmere goat**.

The only similarities between wool and pashmina is that both are of animal origin and are chemically similar (made of keratinous protein). However they are completely different fibres altogether, in terms of genetic nature, appearance, morphology, handle, processing etc. The differences between the two fibres are given in the table below.

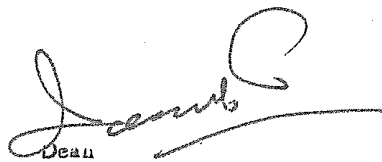


Dean
Faculty of Vety. Sc. & A. H
Shuhama, Alusteng, Srinagar,

Table: Difference between wool and pashmina

S. No	Parameter	Wool	Pashmina
1	Origin	Sheep Family (Ovis aries)	Goat Family (Capra hircus)
2	Coat	Single Coat	Double coat
3	Crimpyness	Crimpy	Without crimps
4	Surface Structure	Rough handle	Smooth handle
5	Fibre Diameter	>20 μ	Generally less than 15 μ but as per US standards not more than 19 μ
6	Scales	Pronounced Imbricate* Rough edges	Faint --- Smooth edges
7	Scalar Pattern	Simple coronal*	Coronal, Distinct
8	No. Of Scales	5.5/ 100 μ	6-7/100 μ
9	Medulla	Absent in fine wool but present in coarse wool	Non-medullated
10	Cross- section	Circular to elliptical	Circular to oval
11	Cortical cell type	Ortho and para cortical cell	Ortho and meso cortical cells
12	Moulting	No	Yes
13	Methods of Harvesting	Shearing	Combing
14	Time	Generally twice a year	Only one in a year
15	Strength	---	10% below the finest wool

***Note:**
Coronal: Means crown like and refers to scales in which the visible scale edge completely encircle the fibre
Imbricate: Means overlapping and refers to the scales in which the visible edge overlap like shingles on roof and cover only a part of the fibre circumference.

Regarding the processing, wool is generally processed on machines in woolen and worsted sector while as pashmina being highly fragile is processed on handlooms as they cannot withstand the force of machine/power looms. However, at some places pashmina is now days being processed on machine after incorporation of nylon/synthetic fibres which acts as a carrier fibre. It is pertinent to mention it that the machine processing deteriorates the quality of pashmina products as it involves harsh mechanical and chemical treatments (dipping of final product in HCl for dissolving carrier fibre)


Prof. (Dr. Sarfaraz A Wani)
 Faculty of Vety. Sc. Dean, P
 Shubham, Al. V. Sc. & AH, 202,
 SKUAST-K

Government of Jammu and Kashmir
OFFICE OF THE DISTRICT MAGISTRATE SRINAGAR

Subject - Imposition of restrictions under section 144 Cr.P.C.

ORDER

Whereas, Special Secretary to Govt. Industries and Commerce Department, J&K vide letter No. Ind/DOH/146/2009-III dated: 09-6-2015 has informed that on the representation of the Handicraft and Handloom Artisans and after considering various issues pertaining to use of Pashmina in Handicraft and Handloom Sectors, it was decided in a meeting held on 9th July, 2014 under the Chairmanship of the Financial Commissioner, I&C Department that till an appropriate legislation is enacted, Govt. may either issue an ordinance banning Pashmina on Power Looms or Deputy Commissioner may issue an order u/s 144 Cr.P.C to ban on use of Pashmina on Power Looms in their respective jurisdictions.

Whereas, Director, Handloom Development Department, Srinagar vide No. DHD/P&S/POL/2014/503-504 dated: 23-6-2015 has requested that till necessary legislation is enacted or an ordinance is issued, an order under section 144 of the Cr.P.C may be issued banning the manufacture of Pashmina and Kani products on Power Looms.

Whereas, a meeting was convened in which Director, Handicrafts, Kashmir and Director, Handlooms Development Department, Srinagar participated. Both the Directors are of the opinion that it will be desirable to put a restriction on weaving and production of Pashmina on power looms to maintain the purity of this heritage product and for the benefit of artisans who are associated with this traditional handicraft. It was also informed in the meeting that Draft legislation for reservation of Pashmina Weaving activity for exclusive production by Handlooms has already been forwarded to Director, Handloom Development Department by Director, Handicrafts Department vide No. DH/Plg/312/1116-17 dated: 17-12-2015 for suggestion / opinion and Director Handloom Development Department has submitted the proposed legislation to the Govt. vide No. DHDP/4346-47 dated: 20-2-2015. It was unanimously decided to go with section 144 Cr.p.c till the legislation in this regard is passed and the law comes into force.

Whereas, Director, Handicrafts / Handloom have opined in the meeting that for manufacturing of Pashmina on power looms, nylon is used with pashmina otherwise it can not be weaved on power looms;

Whereas, the General Manager, DIC, Srinagar vide No.DMS/Jud/Misc/912/2015 dated: 04-8-2015 was asked to provide the list of registered power looms with full particulars and information regarding the activity for which permission has been given.



Whereas, the General Manager, DIC, Srinagar vide No. DICS/Sgr/2015/1730 dated: 13-8-2015 has reported that no unit is registered either provisionally or formally for weaving of Pashmina or Kani Products on power looms.

Whereas, the matter has been carefully examined;

Now therefore, I, District Magistrate, Srinagar in exercise of powers vested in me by virtue of section 144 of Cr.P.C hereby impose restrictions on manufacture of Pashmina and Kani products on Power Looms within the jurisdiction of District Srinagar for a period of two months.

This order shall come into force with immediate effect.

Given under my hand and seal of this office on this day the 28th of August, 2015.

**Sd/-
District Magistrate,
Srinagar.**

No: DMS/Jud/144-10-Pe/1007-109215
Dt: 28-8-2015
Copy to the:-

1. Financial Commissioner, I&C Department J&K Govt. Srinagar.
2. Divisional Commissioner, Kashmir.
3. Director, Handloom Development Department, Srinagar for information and necessary action.
4. Director, Handicrafts, Kashmir, Srinagar for information and necessary action.
5. Senior Superintendent of Police Srinagar for information and necessary action.
6. General Manager, DIC, Srinagar for information.
7. Joint Director, Information, Srinagar for information and wide publicity through Electronic / print media.


**Addl. District Magistrate,
Srinagar.**

R 6014
17/8/15

Jammu and Kashmir Government
District Industries Centre, Srinagar

To

The Additional District Magistrate,
Srinagar.

NO:- DICS/Sgr/2015/1730

Dated:- 13-08-2015


Sub:- Use of Pashmina on power looms.

Sir,

Kindly refer to your letter No. DMS/Jud/Misc/912/2015 dated 4-8-2015 regarding the subject cited above. In this connection it is to inform you that as per the report of Economic and Investigation section of this office no unit is registered either provisionally or formally for weaving of Pashmina or Kani Products on power looms. However, this office is registering the units for weaving of raffal, Dusooti and silk fabric on power looms only after completion of all required formalities.

J.C.
17/8

Yours faithfully,


General Manager
DIC, Srinagar.

Receipt No:	4034
Date:	
Serial No:	25-6-2015



GOVERNMENT OF JAMMU AND KASHMIR
HANDLOOM DEVELOPMENT DEPARTMENT

Phone: 0191-2477665 (Jammu)
Fax: 0191-2477122 (Jammu)
E-mail: director@jkhandloomdepartment.org

Off. Address: 3rd Floor J.L.N Udyog Bhawan
Rail Head Complex - Jammu/
SICOP Building, Boulevard,
Srinagar.

Deputy Commissioner,
Srinagar.

No: DHD/P&S/DoL/2014/503-504

Dated: 22/06/2015

Sub: - Use of Pashmina on Power looms

Sir,

Kindly refer to Special Secretary to Government, Industries & Commerce Department's letter No. Ind/DoH/144/2009-III dated 09-06-2015 addressed to you and a copy among others endorsed to *this office* regarding the subject cited above.

In this context, it is submitted that this Department strongly recommends a ban on the manufacture of traditional products of the State like Pashmina and Kani on Power looms and encourages Handloom items. This can be achieved if use of power looms for such products are discouraged.

It is as such requested that if found feasible, and till necessary legislation is enacted or an ordinance is issued, an order under section 144 of the CrPC may be issued banning the manufacture of *Pashmina and kani* products on Power looms in respect of your jurisdiction.

Yours faithfully,

Director,

Handloom Dev. Dept.,
Srinagar.

Copy to the:-

1. Financial Commissioner, Industries and Commerce Department J& K for information. This has reference to his office letter captioned above.

Annexure 'B'

11

Government of Jammu & Kashmir
Office of The Deputy Director Handicrafts, Quality Control Division
Solina, Srinagar

The Director Handicrafts,
J&K Government,
Srinagar.

No:- HD/TTA/R/2606

Dated:- 04/ 06/2014

Sub:- Inspection of M/s Apex Fine Shawls at Baghi ali Mardan Khan

Sir,

In compliance to the instructions by your goodself, undersigned deputed a team of officers of Quality Control Division to Baghi Ali Mardan Khan industrial area on 02.06.2014 to conduct surprise inspection of **M/s Apex Fine Shawls** in order to ascertain the factual position with regard to the functioning of the mentioned unit.

In this connection the Inspection team found that the above mentioned unit is a registered SSI unit with District Industries Centre, Srinagar under **Regd No. 21/I&C/K-72**, dated **20.12.1974** (**Copy Enclosed at Annexure "A"**). As per the registration issued, the line of activity of the said unit is as under:

1. Weaving of Woolen, Silken and Blended Cloth on Powerlooms.
2. The plant and machinery installed has been upgraded to Shuttle less Rapier Weaving Looms with Cam and Dobby and other standard accessories. (Vide No. DICS/dev/2012/2350-51 dated 08.09.2012)

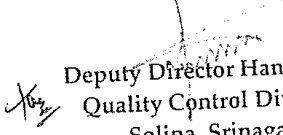
However during the Inspection it was found that one more unit is functioning under the same roof in the name & style of **M/s Weave Well Shawl Industry**, under the proprietorship of Mr. Tariq Ahmad Misgar S/o Khwaja Ghulam Ahmad Misgar. R/o Ranga Masjid Hawal Srinagar. It came to the notice of inspection team that the above two units are functioning as a composite unit for carrying out all the activities necessary for industrial textile (**Fibre to Fabric**) production. The processes include Carding of Wool Tops, Combing, Blending, Spinning, and Weaving etc. The above unit is also registered with DIC Srinagar vide no. **GM/DIC/Sgr/Reg/217** dated **13.04.2011** (**Copy Enclosed at Annexure "B"**) under the micro, small and medium enterprises Scheme.

The authorized line of activities for M/s Weave Well Shawl Industry is **Carding and spinning of Raw Wool and Wool tops, Weaving of Woolen, Silken and Blended Cloth on 12 No. of Powerlooms.**

The Inspection team observed that both the units are functioning under the proper permissions of I&C Department. In fact their activities are being promoted by the concerned departments, the evidence for the same is that the units are functioning in the Industrial Estate of Baghi Ali Mardan Khan, Srinagar. It was also found that raw material is being procured by the Mills outside the state in the form of raw wool tops and Nylon for blending etc. Copy of one such procurement from M/s Jay Shree Textiles (a Unit of Aditya Birla group) West Bengal is enclosed here with at **Annexure "C"**. The consignment consists of Wool Tops in the range of 16.5 Microns. (**Referred as Cashmere Wool Tops**).

The inspection team observed that the above mentioned units are producing fine quality of wool yarn which in turn they convert into fabrics with different design on shuttle less automatic looms. Hence the designs thus obtained on such fabrics are woven design and not embroidered.

In light of the above, It is proposed that a meeting be called with the office bearers of DIC Srinagar, where issuance of registrations to such units be discussed threadbare and norms be established to ensure that such fine quality woolen cloth may not be passed on to the gullible tourists in the name of **Pashmina**. Since the products manufactured by these units resemble somewhat in fineness with pashmina, the Concerned unit holders should be enforced by the DIC official to tag their products depicting 100 % Machine made in addition to other Quality specifications.


Deputy Director Handicrafts
Quality Control Division
Solina, Srinagar.

Annexure 2

2)

Government of Jammu & Kashmir
Office of The Deputy Director Handicrafts, Quality Control Division
Solina, Srinagar

The Director Handicrafts,
J&K Government,
Srinagar.

No:- HD/TTA/R/2671

Dated:- 8/7/2014 .

Sub:- Inspection of woolen Spinning and Weaving units operating in
various industrial areas of the state.

Sir,

Kindly refer letter No. Ind/DOH-54/2013 dated 20.06.2014 issued by
Under Secretary to Government, Industries and Commerce Department
received by this office on 26.06.2014, regarding the representation submitted
by Kashmir Pashmina Karigar Union. In this connection the detailed report is
enclosed hereby for your kind perusal .

JMS
Deputy Director Handicrafts
Quality Control Division
Solina, Srinagar.

0/
c

APPENDIX L **Cashmere Product Labelling Checklist**

1. Fibre Origin
 - Changthang* Goat
 - Pure
 - Blended
 - Unknown

2. Dehairing Approach
 - Manual
 - Mechanised

3. Cashmere Fibre Fineness
 - Acceptable (10 – 16 microns)
 - Not acceptable (> 16 microns)

4. Spinning Practice
 - Manual
 - Mechanised

5. Weaving Practice
 - Traditional handloom
 - Advanced handloom
 - Mechanised

6. Label Type
 - GI Label
 - Label A
 - Label B
 - Label C

7. Certified / Tested Product
 - Shawl
 - Scarf
 - Stole
 - Other

APPENDIX M **Sustainable Development Goals**

Goal Description	Target Description	SDG Indicator
SDG 1: End poverty in all its forms everywhere.	Target 1.1: By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day.	Indicator 1.1.1: Proportion of the population living below the international poverty line by sex, age, employment status and geographic location (urban/rural).
	Target 1.2: By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions.	Indicator 1.2.1: Proportion of population living below the national poverty line, by sex and age.
SDG 5: Achieve gender equality and empower all women and girls.	Target 5.c: Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels	Indicator 5.c.1: Proportion of countries with systems to track and make public allocations for gender equality and women’s empowerment.
SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.	Target 8.2: Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors.	Indicator 8.2.1: Annual growth rate of real GDP per employed person.
	Target 8.3: Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and	Indicator 8.3.1: Proportion of informal employment in total employment, by sector and sex.

	growth of micro-, small- and medium-sized enterprises, including through access to financial services.	
	Target 8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.	Indicator 8.5.2: Unemployment rate, by sex, age and persons with disabilities.
SDG 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.	Target 9.3: Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets.	Indicator 9.3.1: Proportion of small-scale industries in total industry value added.
	Target 9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.	Indicator 9.4.1: CO2 emission per unit of value added
SDG 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective,	Target 16.5: Substantially reduce corruption and bribery in all their forms.	Indicator 16.5.1: Proportion of persons who had at least one contact with a public official and who paid a bribe to a public official or were asked for a bribe by those public officials, during the previous 12 months.

accountable and inclusive institutions at all levels.		Indicator 16.5.2: Proportion of businesses that had at least one contact with a public official and that paid a bribe to a public official, or were asked for a bribe by those public officials during the previous 12 months.
---	--	--