

**Understanding Resilience: Bangladeshi Micro-Tanneries (McTs)
in a Changing Global-Local Environment**

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Table of Contents

Acknowledgements.....	I
List of Abbreviations	III
List of Figures	VI
List of Tables	VII
Abstract.....	VIII
Zusammenfassung.....	X
Chapter One: Introduction	1
1.1 Background	1
1.2 Research Problem, Questions, and Objectives.....	2
1.3 Significance of the Study	4
1.4 Structure of the Thesis	5
Chapter Two: Research Context	8
2.1 Definitional Dilemma of McTs in Bangladesh	9
2.1.1 What should be an ideal Approach to categorize McTs in Bangladesh?.....	10
2.1.2 Macro vs. Micro Debate.....	12
2.2 Evolution of McTs in Bangladesh – A Historical Account	12
2.2.1 Location of the Industry	15
2.2.2 Impacts of Government Policy Changes.....	16
2.3 A Typical Operational Process of a McT in Hazaribagh	17
2.4 An Appraisal of socio-political-economic Contexts	17
2.5 An Overview of the Labour Sector of the McTs including the Supply and Demand Condition	19
2.6 An Overview of the Capital Management of the McTs	21
2.7 Current State of Transition of the McTs	22
Chapter Three: Theoretical and Conceptual Approach of the Research.....	23
3.1 Resilience: Theoretical Understanding	23
3.1.1 Key Perspectives of Resilience	24
3.1.2 Organizational Routines and their Impact on Resilience.....	29
3.1.3 The Organizational Theory and Change	30
3.1.4 Capital Management of the MCTs and Resilience	31
3.2 McTs’ Knowledge Management (KM) – Environment, Tools, and Challenges	32
3.2.1 Various KM Models.....	34
3.2.2 The Role of Knowledge Dynamics and its Link to Innovation for Sustainable Growth	37
3.2.3 The Roles of KIBS in helping McTs to achieve Resilience through Sustainable Growth	39
3.3 Challenges of McTs due to changing Global and Local Conditions	40
3.3.1 Drivers and Barriers in achieving Resilience.....	42
3.3.2 Standard Typology, Sustainability, and Governance	43

Chapter Four: Methodology	44
4.1 Detailed Description of the Research Approach, Strategy, and Method	44
4.2 Research Procedures	45
4.2.1 Sampling Procedure	46
4.2.2 Selection of Participants.....	46
4.2.3 Data Analysis Procedures	48
4.2.4 Validation and Reliability	49
4.3 Researcher’s Position and Role.....	50
4.4 Ethical Aspects of the Study	50
Chapter Five: Towards Understanding Resilience of McTs and its Contributing Factors	52
5.1 Approaches to Understanding McTs’ Resilience.....	52
5.1.1 Socio-ecological Model and McTs’ Resilience	55
5.1.2 Limits of Resilience	56
5.2 Socio-Ecological Model and Contributing Factors for McTs’ Resilience.....	60
5.2.1 Internal Factors.....	61
5.2.1.1 People are the Keys	62
5.2.1.2 Necessity drives Innovation – an adaptive Business Model.....	65
5.2.1.3 Impact of Values, Faith, and Association with Resilience	72
5.2.1.4 Workers’ Education and its Impact on Resilience.....	74
5.2.1.5 Organizational Routine and its Impact on Resilience	76
5.2.2 External Factors	79
5.2.2.1 Supply and Demand Management and its Impact on Resilience	79
5.2.2.2 Impact of Technology on Resilience	81
5.2.2.3 Capital Management.....	81
5.2.2.4 McTs as adaptive Organizations.....	84
5.3 Social Capital and its Impact on Resilience	85
Chapter Six: The Knowledge Keepers of the McTs – Ways and Means of Managing Knowledge for Resilience	87
6.1 The Topography of the Knowledge Network	88
6.1.1 The Interface of Knowledge Developers (KDe), Knowledge Keepers (KK), and Knowledge Disseminators (KDi)	92
6.1.2 Knowledge Impediments – Justification and Belief Cycle	96
6.1.3 Interaction of explicit and tacit Knowledge – an Analysis	97
6.2 Roles of Organizational Routine in Knowledge Management (KM)	101
6.3 Knowledge Management (KM) and Resilience	102
Chapter Seven: McTs’ Challenges in Managing Resilience – Navigating the Troubled Waters	105
7.1 Challenges at the Macro- and Meso-Level	105
7.1.1 Resilience-Adaptation.....	106
7.1.2 Compliance-related Challenges	107
7.1.2.1 Environment-related Challenges	108

7.1.2.2 Quality-control-related Challenges.....	110
7.1.3 Challenges related to Government Policy Inconsistency.....	111
7.1.4 Foreign direct Investment, unstable Growth, and changing Local Circumstances	117
7.1.5 Challenges related to Training, Research, and Development	118
7.2 Challenges at the Micro-Level	121
7.2.1 Challenges related to Human Resource Management (HRM).....	123
7.2.2 Challenges related to Financial Capacity Management	127
7.2.3 Challenges related to Technology Management	128
7.3 Value Chain Aspects and the Future of McTs	129
Chapter Eight: Conclusions and Recommendations	132
8.1 Summary of Key Research Findings.....	133
8.2 Linking Theories with Empirical Findings	139
8.3 Contribution of the Research	141
8.4 Reflection About the overall Research Process	142
8.5 Recommendations	144
8.5.1 For Policymakers	144
8.5.2 For the McT Owners	145
8.5.3 Recommendations for Future Research	146
References.....	147
Appendices.....	157
Appendix 1: Interview questions	157
Appendix 2: Human ethics assurance (Informed Consent Form).....	159
Appendix 3: List of verbatim data used in the dissertation.....	161

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List of Abbreviations

BBA	Bachelor of business administration
BCLT	Bangladesh College of Leather Technology
BCP	Business Continuity Plan
BDT	Bangladesh Taka
BELA	Bangladesh Environmental Lawyers Association
BFLLEA	Bangladesh Finished Leather, Leather Goods and Footwear Exporters Association
BHSMA	Bangladesh Hide and Skin Merchants Association
BPC	Business Promotion Council
BSCIC	Bangladesh Small and Cottage Industries Corporation
BTA	Bangladesh Tanners Association
BTC	Bangladesh Tannery Corporation
CAQDAS	Computer-Assisted Qualitative Data Analysis Software
CCRU	Common Chrome Recovery Unit
CETP	Centralized Effluent Treatment Plant
CEO	Chief Executive Officer
CFC	Common Facility Center
COEL	Center of Excellence for Leather Skills Bangladesh
CSR	Corporate Social Responsibilities
DCMS	Dynamic Capability Management Spectrum
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
ESEP	Employment and Small Enterprise Policy
ESSP	Earth System Science Partnership
ETP	Effluent Treatment Plant
EU	European Union
FDI	Foreign Direct Investment
GoB	Government of Bangladesh
GDP	Gross Domestic Product
GVC	Global value chain
HRM	Human resource management
ILET	Institute of Leather Engineering and Technology, Dhaka University

ILO	International Labour Organization
ITC	International Trade Centre
KD	Knowledge Developers
KDs	Knowledge Disseminators
KIBS	Knowledge-intensive businesses
KK	Knowledge Keepers
KM	Knowledge Management
KUET	Khulna University of Engineering Technology
LDC	Least Developed Country
LEED	Leadership in Energy and Environmental Design
LSBPC	Leather Sector Business Promotion Council
LTI	Leather Technology Institute
MBA	Masters of business administration
McT	Micro-tannery
MSMEs	Micro, small, and medium-sized enterprises
NBR	National Board of Revenue
NGO	Non-governmental organization
OHS	Occupational Health and Safety
PPP	Public Private Partnership
R&D	Research and Development
RMG	Readymade garments
RT	Resilience threshold
SECI	Socialization, Externalization, Combination, Internalization Model
SES	The socio-ecological system
SME	Small and medium entrepreneurs
SMLI	Small and medium leather industries
SPGS	Sludge Power Generation System
STP	Sewage Treatment Plant
TED	Tannery Estate of Dhaka
TIP	Trade and Industrial Policy
UNIDO	United Nations Industrial Development Organization
USAID	United States Aid
USGBC	US Green Building Council

List of Figures

Figure 2.1	Supply Chain of McTs in Bangladesh.	9
Figure 2.2	Leather tanning linkage industries in Bangladesh.	10
Figure 2.3	Map of Bangladesh and location of Hazaribagh and other tanneries.	14
Figure 2.4	Tannery distribution at Hazaribagh.	15
Figure 2.5	Relocation of tanneries.	16
Figure 2.6	Process flow chart of an McT operation.	17
Figure 2.7	A complete process of producing leather.	18
Figure 3.1	Managerial and ownership control of small firm business.	25
Figure 3.2	SECI theoretical model.	35
Figure 3.3	Knowledge capital (Skandia scheme).	37
Figure 5.1	A generic model of a social-ecological system.	55
Figure 5.2	McT resilience model.	59
Figure 5.3	Interplay of internal and external factors within the SES environment.	61
Figure 5.4	'Job work' model.	68
Figure 5.5	Defining family business.	70
Figure 5.6	A typical McT layout.	77
Figure 5.7	Location layout of a typical McT.	78
Figure 6.1	Modified SECI model.	89
Figure 6.2	Knowledge network topography.	90
Figure 6.3	Component interactions, knowledge generation, and diffusion.	92

List of Tables

Table 2.1	Small enterprise criteria.	11
Table 4.1	Demography, gender distribution of research participants.	47
Table 4.2	Types of McTs participating in this research.	48
Table 5.1	The V ² E ² C ² model of organizational resilience.	56
Table 5.2	Chemical mixing chart.	71
Table 6.1	Knowledge conversion modes and actors' interactions.	100

Abstract

Since Micro-tanneries' (McT) appearance in 1948 in East Pakistan (now Bangladesh), it has adapted to changes and continued its businesses. McTs displayed remarkable growth in the late 1990s and supported the booming Bangladesh leather industry, facilitating the export of diversified products to the world market and contributing to the national Gross Domestic Product (GDP). Thus, understanding the causes of its resilience is not only important from the academic perspective but also crucial from stakeholders' point of view as it is currently undergoing a rapid transformation. In Bangladesh, 206 tanneries are currently operating of which 187 were located in Hazaribagh, Dhaka during the research period.

Ever since its inception, McTs have faced numerous challenges regarding adhering to standards (both local and global), changes in the supply chain, government pressure to relocate from Hazaribagh to Savar, and growing environmental as well as workers health protection activities. National and international media and NGOs widely focused on the negative impacts of McTs to the extent that their contribution to the national GDP as well as to local socio-political sectors was understudied.

At the center of this thesis stand two aims: 1) to identify the major factors influencing the resilience of McTs and 2) to explore how indigenous knowledge (i.e. informal skills and understanding developed by workers and owners with long experience of interaction with their local surroundings) is mobilized to adapt to highly dynamic environments and changes. This qualitative research is based on semi-structured interviews and participant observation. The fieldwork was carried out in a crucial period at the beginning of 2017 when McTs were faced with another great challenge in having to relocate.

The primary motivation of this research comes from the intention to explore the core reasons for these McTs' sustainability and subsequent growth (i.e. resilience) despite numerous obstacles. Two historical periods (1990–1995 and 2010–2017) are taken into consideration to evaluate the aspects described above since the McTs faced significant changes that directly impacted their survival. Consequently, this research examines the resilience of the McTs with particular reference to two major theoretical approaches, such as the socio-ecological system perspective and the organizational change management in the continuing of their business operations.

The major empirical findings are: 1) In Bangladesh's context, categorizing McTs into micro and macro is problematic based on the available EU criteria. 2) The interplay of several internal and external factors within the socio-ecological system contribute to achieving resilience. 3)

McTs manage indigenous knowledge creatively and employ such knowledge in effectively managing their day-to-day operations. 4) 'Family dynamics' (understood as the patterns of relating or interactions between family members towards achieving a common business goal) are an important consideration that impact the resilience of McTs. 5) McTs do not receive institutional support either from the government or from NGOs for waste management, as would be expected. 6) In the above-mentioned two historical periods, when they faced major challenges, McTs showed remarkable resilience in continuing their operations by remaining flexible, adaptive, and competitive. 7) The employers largely ignored the need for professional training (as the employees mostly learnt by doing) and health risk matters of their workforce, even though their day-to-day work allows the leather industry to earn millions each year.

This research demonstrates that among McTs, while a number of them could not succeed and went out of business, many of them were added as new entrepreneurs in this sector. They are the silent profit generators, employers, entrepreneurs, charitable agencies, and social activists who are often forgotten and are seldom quoted in development reports, both locally and globally.

Zusammenfassung

Seit 1948 entstanden in Ostpakistan (heute Bangladesch) Kleinbetriebe des Gerberei-Handwerks (hier Mikro-Gerbereien genannt), die sich allen Veränderungen anpassten und ihre Geschäfte seither fortführten. In den 1990er Jahren verzeichneten Mikro-Gerbereien ein beachtliches Wachstum und stärkten die florierende Lederindustrie Bangladeschs, wobei sie den Export von diversifizierten Produkten am Weltmarkt erleichterten und zum nationalen Bruttoinlandsprodukt beitrugen. Daher ist ein Verständnis der Ursachen der Resilienz von Mikro-Gerbereien nicht nur aus einer akademischen Perspektive, sondern auch aus der Sichtweise der Stakeholder von großer Bedeutung, da sich die aktuelle Situation rasant verändert hat. In Bangladesch sind aktuell 206 Gerbereien in Betrieb. Während des Forschungszeitraums befanden sich 187 von diesen in Hazaribagh, Dhaka.

Von Beginn an hatten Mikro-Gerbereien eine Vielzahl an Herausforderungen zu bewältigen. Hierzu zählen die Einhaltung von Standards (lokal wie global), Veränderungen in der Lieferkette, dem Druck der Regierung standzuhalten, die die Verlagerung von Hazaribagh nach Savar intendierte, sowie den zunehmenden Schutz der Umwelt und Arbeitnehmer einzuhalten. Während sich nationale und internationale Medien sowie NGOs weitestgehend auf die negativen Auswirkungen der Mikro-Gerbereien konzentrierten, wurde weder deren Beitrag zum nationalen Bruttoinlandsprodukt noch zu lokalen sozio-politischen Sektoren berücksichtigt.

Diese Arbeit verfolgt zwei Ziele: zunächst sollen diejenigen Faktoren identifiziert werden, die den größten Einfluss auf die Resilienz der Mikro-Gerbereien ausüben. Des Weiteren soll untersucht werden, wie autochthones Wissen (d.h. informelle Fähigkeiten und Einsichten, welche Arbeiter und Besitzer im Zuge langfristiger Erfahrungen bezüglich der Interaktion mit ihrem lokalen Umfeld gewonnen haben) aktiviert wird, um es unterschiedlichen Umgebungen und hochgradig dynamischen Veränderungen anzupassen.

Diese qualitative Forschungsarbeit basiert auf halbstrukturierten Interviews und teilnehmenden Beobachtungen. Die Feldarbeit wurde zu Beginn des Jahres 2017 während einer entscheidenden Phase durchgeführt, in der die Mikro-Gerbereien mit der großen Herausforderung einer Standortverlagerung konfrontiert wurden.

Die grundlegende Motivation für diese Untersuchung war es, die Kernelemente zu erforschen, die die Zukunftsfähigkeit und das darauffolgende Wachstum (d.h. die Resilienz) der Mikro-Gerbereien entgegen aller Hemmnisse gewährleisten. Zur Auswertung der Untersuchung, wurden zwei historische Zeiträume herangezogen (1990–1995 und 2010–2017), in denen die

Mikro-Gerbereien bedeutsame Veränderungen erfuhren, die einen direkten Einfluss auf ihren Fortbestand hatten. Die vorliegende Arbeit untersucht die Resilienz der Mikro-Gerbereien mit besonderem Augenmerk auf zwei große theoretische Ansätze: die sozio-ökologische Systemperspektive und das organisationale Veränderungsmanagement im Fortlauf der Geschäftsvorgänge.

Die empirische Arbeit hat die folgenden Erkenntnisse erbracht: 1) Im bangladeschischen Kontext ist es problematisch, Mikro-Gerbereien entsprechend der bestehenden EU-Kriterien in Mikro- und Makro-Kategorien einzuteilen. 2) Das Zusammenspiel verschiedener interner und externer Faktoren innerhalb des sozio-ökologischen Systems fördert die Resilienz. 3) Mikro-Gerbereien pflegen einen kreativen Umgang mit autochthonem Wissen und nutzen dieses zur effektiven Durchführung ihrer täglichen Geschäfte. 4) „Familiendynamiken“ (Beziehungsmuster oder Interaktion zwischen Familienmitgliedern, die auf das Erreichen eines gemeinsamen Geschäftsziels ausgerichtet sind) haben einen großen Einfluss auf die Resilienz von Mikro-Gerbereien. 5) Anders als anzunehmen wäre, erhalten Mikro-Gerbereien im Umgang mit Müll keinerlei Unterstützung durch die Regierung oder durch NGOs. 6) Als die Mikro-Gerbereien in den zwei oben aufgeführten Zeiträumen die größten Herausforderungen zu bewältigen hatten, bewiesen sie bemerkenswerte Resilienz. Sie führten ihre Geschäftstätigkeit fort, indem sie flexibel, anpassungsfähig und wettbewerbsfähig blieben. 7) Weitestgehend übergangen die Arbeitgeber das Bedürfnis nach professionellem Training (da die Beschäftigten durch *Learning-by-Doing* lernten) und ignorierten die gesundheitlichen Risiken, denen ihre Arbeitskräfte ausgesetzt waren, obwohl ihre tägliche Arbeit der Lederindustrie jährlich Millionen erwirtschaftete.

Trotz der Insolvenz einiger Mikro-Gerbereien zeigt die vorliegende Arbeit, dass viele dieser Betriebe in diesem Sektor Fuß fassen konnten. Sie sind die stillen Profiterzeuger, Arbeitgeber, Unternehmer, gemeinnützigen Behörden und sozialen Aktivisten, die nur selten Beachtung in lokalen und globalen Entwicklungsberichten finden.

Chapter One: Introduction

1.1 Background

Bangladesh accounts for 0.5% of the world's leather trade and domestically its leather industry is ranked fifth in the export earning sectors (Paul et al., 2013). This burgeoning leather industry is supported by tanneries, which have supplied the requisite raw materials for over five decades. These tanneries are mostly located in the Hazaribagh (can be transliterated as *Place of Thousand Gardens*) area in Dhaka, Bangladesh. A cursory glance shows that these tanneries are often small in size and operation, and are hence termed “micro-tanneries” (McTs), which have not only weathered global economic turmoil as well as fragile political and economic governance locally, but consistently supported the leather industry so that it has been able to grow consistently, surpassing the \$1 billion mark in annual exports in 2014 (A-Muti & Ahmad, 2015). Data compiled from the Export Processing Bureau (EPB) of Bangladesh clearly support this trend and the bureau forecast that “...the country's leather product export earnings were forging ahead due to growing international demand for Bangladeshi leather products, mainly for quality and cheaper prices” (Export Promotion Bureau, 2014, cited in Khan et al., 2015).

Nevertheless, having a proven record of accomplishment of sustainable growth, this industry and its affiliated McTs are subjected to global pressures in terms of complying with standards (mostly environment-, health-, and labour-related) as consumers in the Global North have become more aware of the local conditions in which goods are produced. Consequently, importing firms at the Global North insist on implementing Corporate Social Responsibilities (CSR) by setting standards to improve labour-, environmental-, and governance-related issues at the supplier end. As a result, supply chain dynamics in Bangladesh also have undergone substantial changes over the years in the areas where these McTs are primarily located. Among the primary factors that influence the local McTs' business operation-related dynamics are ongoing global-local demands for ethically-produced goods, globalization, and knowledge management to remain competitive in the market.

Importantly, analysis of the past five decades of these McTs' operations in Bangladesh reveals that these tanneries have undergone at least two major changes brought about by local regulations. One occurred in the early 1990s when the Government of Bangladesh (GoB) ordered a stoppage of the export of blue crust to foreign buyers directly and the other occurred when their relocation was ordered from Hazaribagh to Savar in 2003 (a map showing the places

is at Chapter Two, Figure 2.6). As these are small firms, the impacts of government's decision on the tannery business was significant because these relied heavily on direct export of crust leathers and these did not have adequate capital for relocation. However, these McTs continued their business and registered remarkable sustainability.

According to the Leather Sector Business Promotion Council (LSBPC) of Bangladesh, McTs employ around 100,000 people directly or indirectly and this sector has all the basic elements needed to provide a sustainable business (Nun, 2006). However, amidst all the above-mentioned global-local pressures, the McTs showed remarkable resilience and continued their business by contributing not only nationally but also to the local leather economies. Additionally, researchers in this field observed that there has been no "negative growth" in this sector in recent years since its inception (Nun, 2006). This phenomenon raises several intriguing questions, which are subsequently appended in the form of research questions.

1.2 Research Problem, Questions, and Objectives

Since the 1990s, these McTs have steadily supplied raw materials for the leather industry and despite global economic meltdowns as well as fragile political and economic governance these businesses have survived and helped the leather industry grow. Given the fact that McTs showed remarkable resilience in weathering local changes in the past, it can be safely assumed that they must have certain methods and means of managing and adapting to changes. Although officially 220 tanneries are operating in Bangladesh, some 48 units are considered small (Moore & Manring, 2009).¹

Little research has been done to explore Bangladeshi McTs and how they are organized and conduct their businesses. In this regard, one scholar noted that "... [Global North has] the large supply base in low-cost countries, however, [the supply base] is constituted by micro, small and medium-sized enterprises (MSME), and the conditions under which they achieve exports often remain unnoticed..." (Strasser, 2015, p. 3). Therefore, studying the micro segment (i.e. McTs) within a developing country context is particularly worthwhile.

Similarly, no systematic research has been carried out to determine how these McTs have successfully achieved resilience over the last three decades. The survival of these McTs has been surprising because of the sheer fact that they are "...extremely vulnerable due to their limited access to educational, legal, technological and financial opportunities..." (Gallopín,

¹ For details on the structure of tanneries in Bangladesh, see Paul et al. (2013).

2006, p. 5386). Moreover, "...large firms can offer an important asset base, as well as access to diverse global markets whereas small firms offer flexibility, innovation and adaptation capacity to rapidly changing environments. However, micro-enterprises may not be able to make use of these opportunities and remain an important challenge for researchers and practitioners..." (Sanz et al., 2016, p. 964).

This research further explores if McTs are able to build their capacities through organizational routine, which eventually contributes to their survival. Additionally, this research explores factors contributing to resilience. Here, American Psychological Association's (APA) definition of resilience is considered as a point of departure which is a process, "...of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress..." (American Psychological Association, 2014). However, different disciplines use the term 'resilience' in a myriad of ways drawing from its intellectual platforms and traditions. For example, Bodin & Wiman (2004) described resilience in terms of "physical systems" whereby "...a system returns to equilibrium after displacement, irrespective of oscillations indicates the elasticity..." (Bhamra et al., 2011, p. 5379). The scholars, like Holling (1973), Walker et al. (2004), Gunderson (2000), and Tilman & Downing (1994), explained resilience from ecological perspectives by highlighting the key aspects of it, such as: "measure of the persistence of systems", "...the capacity of a system to absorb a disturbance and reorganize while undergoing change...", "...the magnitude of disturbance that a system can absorb...". In line with these authors, others also mentioned "...the speed at which a system returns to a single equilibrium..." as a feature of resilience (Bhamra et al., 2011, p. 5379). Walker et al. (2002) and Carpenter et al. (2001) put forward a "social-ecological" model for resilience underpinning "the ability to maintain the functionality of a system" and "...the magnitude of disturbance that a system can tolerate...". Hamel & Valikangas (2003) and Home & Orr (1997) put forward their arguments from organizational perspectives mentioning the capacity of an organization "to continuous reconstruction" and having the "...fundamental quality to respond productively to significant change that disrupts the expected pattern of event..." (Bhamra et al., 2011, p. 5379). Nonetheless, no research has been done on the role of knowledge networks behind resilience of micro-firms with special emphasis on tacit knowledge.

The main research question is: How do Bangladeshi McTs develop their capabilities to adapt to changing global and local environments and thereby strengthen their resilience? Subsidiary research questions are:

1. What are the characteristics of Bangladeshi McTs?

2. What do they understand about resilience and what are the factors that contribute to achieving it?
3. What kind of changes take place in McTs' business practices while they adapt to global and local changes?
4. What sorts of knowledge networks are found in McTs' raw material acquisition, processing, distribution, and human resource management?
5. What are the problems these McTs encounter when adapting to changes?
6. How do they overcome such problems?

1.3 Significance of the Study

This research is significant on several counts as elaborated on subsequently:

- a) Little research has been done focusing exclusively on McTs in Bangladesh and how these industries achieve sustainable growth despite facing many challenges locally and globally (i.e. economic, social, globalization, etc.). Nevertheless, it is a fact that "...the large supply base in low-cost countries, however, is constituted by micro, small and medium-sized enterprises (MSME), and the conditions under which they achieve exports often remain unnoticed..." (Strasser, 2015, p. 3), and as such, studying this segment within a developing country context is particularly worthwhile. By sampling this segment of the industry, this research generates knowledge outlining the conditions, successes, and failures of these industries within a value chain.
- b) A 2013 study carried out in relation to the small and medium leather industries in Bangladesh documented, "...113 tanneries...30 modern shoe manufacturing plants engaged in the production of high-quality footwear, with over 2500 smaller footwear manufacturers also present in the sector. There are around 100 small-to-medium leather goods manufacturers, and a small number of niche larger manufacturers..." (Paul et al., 2013). Yet, no systematic research has been carried out that explores how these SMLIs have successfully registered steady growth over the last two decades. No research has also been carried on how these McTs negotiate external and internal pressures in terms of responding to compliances (i.e. standard) and in doing so how they develop their own strategies not only for institution building but also to maintain sustainable growth.
- c) Importantly, so far, no research has been done on how indigenous knowledge of sustainable growth is being produced when these McTs located in the 'Global South' are put into a tension – on the one hand, from a pressure to comply with a host of standards set by firms in the 'Global North' and, on the other hand, to keep production costs lower to make profit and thereby remain competitive. Interaction and learning processes in such a dynamic environment require knowledge and enhance the knowledge bases and the capabilities of the micro-firms. This study explores how these firms manage knowledge processes to develop their own standards (i.e. labour,

- environmental, social) while negotiating between Global Standard (GS) and Local Standard (LS).
- d) Scholars researching this sector argue that "...systematic analyses of specific knowledge bases and their influence on knowledge processes among the heterogeneous service segments are therefore scarce..." (Strambach & Surmeier, 2013, p. 157). To this end, the objective of the thesis is to systematically analyze the nature of knowledge dynamics within these McTs by exploring how tacit knowledge is created and to what extent knowledge creation and its management is responsible for resilience. Further, Organizational theory, particularly its approach of a knowledge-based firm with the identified Socialization-Externalization-Combination-model (SECI) as its main mechanism, is used in this research (Krogh et al., 2013).

This research also attempts to explore how knowledge dynamics are tied to McTs' innovation and what is the process involved in innovation using indigenous knowledge. By investigating the process of innovation for adaptation, this research also examines the dynamics of "knowledge flow" both horizontally and vertically in the value chain which might help to maintain sustainable growth.

1.4 Structure of the Thesis

This thesis intends to expand the body of knowledge available about the knowledge dynamics within SMLIs in Bangladesh. To this end, this thesis is organized into eight chapters: **Chapter One** provides a general introduction including the key research gaps and justification for this research project, describes its significance, and delineates the overall framework of its presentation in this document.

Chapter Two provides the salient contextual features of the study area. It starts with the approach to the categorization of McTs in Bangladesh, which ends up with a detailed description of the macro- and micro-grouping of tanneries depending upon the employee size, investment, production type, and the related infrastructure within which these are found. Next, it deals with the evolution of McTs in Bangladesh and covers the pre-liberation of East Pakistan and current Bangladesh period, including the location of the industry. Later, an attempt is made to provide an appraisal of the socio-political-economic context of McTs in Bangladesh. It also gives an overview of the supply and demand conditions in Bangladesh, finally ending on the current state of the transition of McTs and its future impacts on their business.

Chapter Three describes a set of theories relevant to this research. The first set lays out theories related to resilience and managing resilience. Here, an approach to studying key

perspectives of McTs' resilience is discussed. The second set lays out the knowledge network management-related theories including the SECI model for knowledge creation, management, and flow. The third set describes the theories pertaining to the challenges facing McTs due to changing global and local conditions.

Chapter Four describes the methodology used in this research. Within the broad qualitative methodological approach, ethnography was used to access, synthesize, and present the experiences of McT research participants in understanding the nature of resilience as it helps them to maintain sustainable development. This research strategy is based on the triangulation of methods and data. Applied are face-to-face semi-structured interviews, participatory observation, as well as document and media analysis.

Chapter Five presents data of the qualitative analysis along with a discussion of the findings. It starts with the approaches to McTs' resilience (organizational and individual), followed by the determination of general characteristics that contribute to McTs' resilience. Among the factors contributing to resilience, both internal and external factors are cited and how these McTs manage various resources that they have at their disposal. At the end of this chapter, the impact of organizational routines is identified along with the role of social capital and its effect on resilience. Finally, a brief discussion is made about the limits of resilience for the McTs.

Chapter Six explores the nature of knowledge management for the McTs in the Bangladeshi context. In doing so, this research aimed at identifying key knowledge keepers, mapping knowledge topography, and exploring the management of tacit knowledge while negotiating local-global pressure. In this chapter, the SECI model is used as an analytical raster/lens to explain how knowledge exchange is created and diffused in the actual business operations of the McTs.

Chapter Seven lays out how the different analyzed actor groups perceived and shared their experiences of the challenges they faced in doing business in local and global contexts. Here, compliance-related challenges, challenges emanating from government policies, and the absence of formal training, which resulted in incoherent growth are discussed. At the end of the chapter, the hopes and fears shared by the research participants relating to the ongoing transition of the McTs are mentioned.

Finally, **Chapter Eight** summarizes the key research findings, the contribution of the research, and recommends directions for future research. Here, a linkage with theory and empirical findings is highlighted. This research is not intended to prescribe specific policies related to

the McTs in Bangladesh in general. However, in this chapter, some policy suggestions for managing the changes are given which might be helpful for policymakers as well as for factory owners.

Chapter Two: Research Context

The Bangladesh leather industry has registered remarkable gains in the export sector over the past two decades. “In 2017, the total leather and leather goods exports stood at \$1.2 billion, accounting for a share of 3.54 percent of Bangladesh’s total merchandise exports. The export-oriented leather sector’s contribution to GDP is estimated to be 0.35 percent...” (Razzaque et al., 2018, p. 13). McTs are key contributors to the success of this industry, since they supply raw materials. An estimate shows that if environmental and health risk conditions within the McTs were adequately addressed, the leather industry’s economic prospects could be even greater, which would eventually challenge the Ready Made Garments (RMG) sector as the country’s most valuable export commodity (Bangladesh country commercial guide, 2016). Additionally, among the major leather goods exporting nations in the world, Bangladesh stood at 20th out of 30 in 2008 (FAO, 2008). In the top ten export item list of Bangladesh, footwear export stands in 4th position (\$901.4 million, 2.3%) and rawhides, skins and leather stand in 9th position (\$208.5 million, 0.5%)(Workman, 2017). “According to Bangladesh Tanners Association, the country produces 220 million square feet (about 20 million square meters) of hide every year, 64.82 percent of which is cowhide, 2.25 percent buffalo hide and 1.2 percent sheepskin”(Debnath, 2017). In this regard, some researchers have observed a dual opportunity that exists in Bangladesh where these industries thrive: the availability of raw materials (such as hides and skins) as well as “...a comparatively lower production cost due to having a large number of skilled and semi-skilled low wage work force, utility cost and cost of living...” (Nun, 2006).

Leather is the basis of one of the oldest industries in Bangladesh, which plays a significant role in the national economy and has a good reputation worldwide. This is an agro-based by-product industry with locally available indigenous raw materials having the potential for export development and sustained growth over the coming years. Bangladesh leather is widely known around the world for its high qualities of fine grain, uniform fiber structure, smooth feel and natural texture (Paul et al., 2013, p. 25). Additionally, “...readily available basic raw materials for leather goods, a large pool of low-cost, trainable labour and tariff concession facilities issued by major importing countries have created the right conditions for strong growth in the leather industry. Bangladesh is an ideal offshore location for low-cost and high-quality leather and leather products manufacturing...” (Bangladesh country commercial guide, 2016).

Tanneries where the hides and skins are tanned are the most labour-intensive sector where the maximum manpower is involved. There are 16 stages involved in the production of finished leather goods. In this sector, three major products are available: splitting wet blue leather (S-WBL), crust leather (CL) and finished leather (FL). Wet blue (chrome-tanned leather, as chrome-tanning creates a blue color in the leather and there is a natural safe resting stage just after tanning when the leather is both wet and blue, a significant stage in that leather is traded semi-processed worldwide) and crust leathers are produced by McTs in Bangladesh (Rahman, 2010). Bangladeshi goatskins are famous worldwide for their fine and light grain and are widely used for gloves and luxury items (ibid.). A schematic diagram in Figure 2.1 shows the supply chain of McTs within the overall leather industry framework.

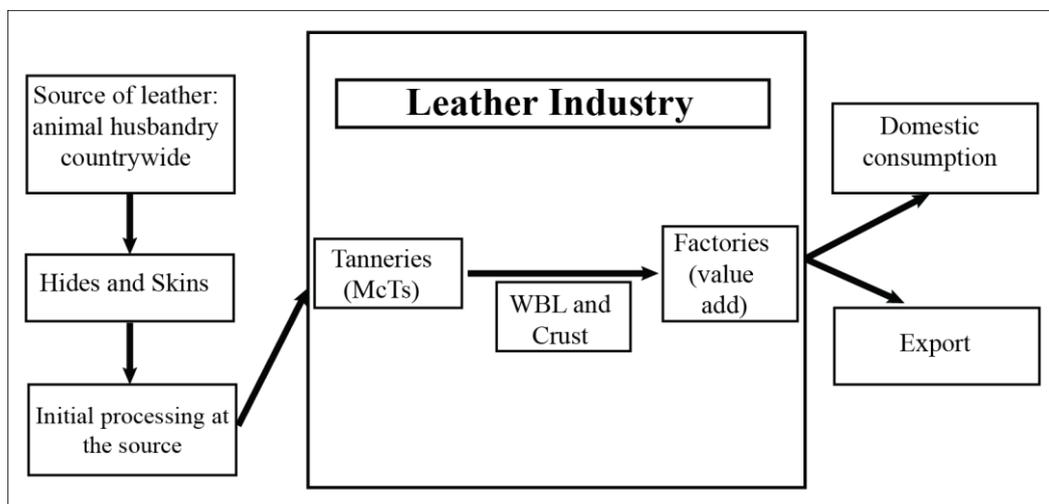


Figure 2.1: Supply Chain of McTs in Bangladesh.

(Source: Author)

McTs are a part of the leather industry and, as such, understanding the forward and backward linkage of the industry is required. To this extent, Figure 2.2 shows the leather tanning linkage industries in Bangladesh.

2.1 Definitional Dilemma of McTs in Bangladesh

The initial struggle is related to an attempt to use a fixed frame of reference (i.e. employee size, turnover, and profit) in identifying micro-tanneries in the Bangladeshi context. Consequently, the challenge remained which was to define McTs as a subset of SMEs (1 to 249 employees) according to the European Union's (EU) definition of small and medium-sized enterprises (SMEs) found in the EU recommendation 2003/361. From this perspective, the main factors determining whether an enterprise is an SME are: staff headcount and either turnover or balance

sheet total. However, this seems to be problematic because small tanneries in Bangladesh maintain a variable pool of employees. Therefore, it is nearly impossible to know at any given point of time how many employees actually are working in a McT.

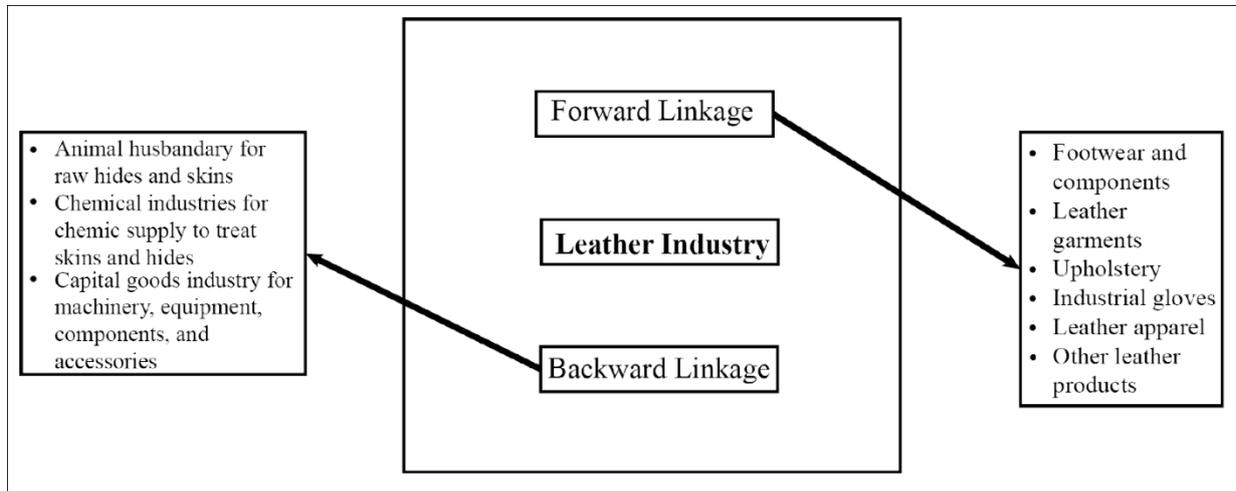


Figure 2.2: Leather tanning linkage industries in Bangladesh.

(Adopted with modification from Rahman, 2010, p. 16.)

2.1.1 What should be an ideal Approach to categorize McTs in Bangladesh?

Should McTs be considered small businesses, enterprises, or entrepreneurs in Bangladesh? One report suggests that, in Bangladesh, "...the SMEs [McTs are assumed to be in this category to start with] account for about 45 percent of manufacturing value addition, 80 percent of industrial employment, 90 percent of total industrial units and about 25 percent of total labour force. Their total contribution to export earnings ranges from 75 percent to 80 percent, according to a recent economic census. The SMEs make up 75 percent of the domestic economy. There are about 60 lakh SMEs and microenterprises in Bangladesh, according to the Asian Development Bank..."(Rahman, 2011). Given the SMEs' substantial contributions towards national GDP, it is necessary to look closer to find out where McTs are located within the broader context of small businesses usually found in Bangladesh.

According to the U.S. Small Business Administration (SBA), a small business is typically defined based on the number of employees. Again, the legal definition of a small business is determined by which set of criteria is used by the SBA in making small business determinations (for example, in the manufacturing sector the maximum number of employees may range from 500 to 1,500).² Nevertheless, a small business is often termed as a small-scale enterprise "...that employs a small number of workers and does not have a high volume of sales. Such enterprises

²For details see Beal, V. (2018): "Small business." (Retrieved from http://www.webopedia.com/TERM/S/small_business.html on 18.09.2018).

are generally privately owned and operated sole proprietorships, corporations or partnerships. The legal definition of a small-scale enterprise varies by industry and country...”(Richards-Gustafson, 2010). For example, a small company is defined in the UK's Companies Act (2006) as one with: 1) annual revenue of no more than £6.5 million; 2) a balance sheet total of no more than £3.26 million; and 3) no more than 50 employees(Blackman, 2016). In Australia, there are a few different definitions used by different government agencies. The Australian Securities & Investments Commission (2016) defines a “small proprietary company” as one with two out of these three characteristics: 1) an annual revenue of less than \$25 million; 2) fewer than 50 employees at the end of the financial year; and 3) consolidated gross assets of less than \$12.5 million at the end of the financial year. The Australian Taxation Office (2016) bases their definition on revenue only, with a threshold of \$2 million (ibid.). Additionally, in 2011, the Bangladesh Bank stated that “...in manufacturing, micro firm/enterprise would be those with assets worth BDT 500,000 to 5 million (5,043 to 50,437 Euro) and/or 10 to 24 workers or less”(bdnews24.com, 2011).Further, “...small industry means an industrial establishment or unit which is run mainly by hired labor and not using mechanical motive power but does not normally employ more than 50 workers and whose land, building and machinery does not exceed BDT 150,000,000 (151,313 Euro) in value in either case” (ibid.). The Bangladesh Bank’s definition of a small enterprise refers to a firm/business that is not a publically limited company and complies with the following criteria (serial number 03 in Table 2.2 only applies to McTs).

Table 2.1: Small enterprise criteria.

Serial No	Sector	Fixed Asset other than Land and Building (Tk)	Employed Manpower (not above)
01	Service	50,000 – 50,00,000	25
02	Business	50,000 – 50,00,000	25
03	Industrial	50,000 – 1,50,00,000	50

(Source: Bangladesh Bank, 2011, p. 6.)

However, three criteria are important to determining whether a business or entrepreneur is small or not: size, financial measures, and economic impacts. Given the above-mentioned varied approaches in defining small businesses/enterprises, this research adopted a dual approach to define McTs by relying on their economic impact within this research project. This approach helped to maintain a middle ground that potentially encompassed a diverse range of tanneries located in the Hazaribagh area.

2.1.2 Macro vs. Micro debate

One of the approaches is to use the employment status of workers (i.e. temporary vs. permanent). In many cases, the participants (mostly the owners) opined that they only keep some key persons (in some cases no more than five) employed with full-time status (meaning they pay a steady salary that ranges from BDT 15,000 to 20,000, approximately 150 to 200 Euro). They hire seasonal or temporary workers, depending on the nature and type of contract they get from the market – this condition is driven by market demands. Nevertheless, temporary employees usually do not cross the limit of 15,000 to 20,000 BDT in a given contract period. The seasonal/temporary workers come from local neighbourhoods, yet, over the last ten years, it has been observed that the workers are also coming from all over Bangladesh.

The second approach taken for this research is based on the economic capability of tanneries to have ‘bond’ capacity. This means certain tanneries, which have the requisite financial capabilities to have bonded capacities, are also considered McTs. It is also ascertained that economic impacts are significant to the McTs. However, during the participatory observations, it was confirmed that no more than 60 seasonal workers are employed by a McT when dealing with a contract (meaning after receiving a contract until the delivery of product).

2.2 Evolution of McTs in Bangladesh – A Historical Account

As mentioned, the leather processing business came into being right after the partition of British India in 1947 (Ahmed, 2002, cited in (Strasser, 2015, p. 43). During the period when undivided India was under British control, hides and skins were usually sent for tanning and processing purposes to three main regional centers: Kolkata, Kanpur or Madras. After processing, the supply of leather goods and footwear was sent back to East Bengal (ibid.).

Tanneries are export-oriented business outfits, and in then-East-Pakistan (now Bangladesh), tanneries were mostly found at Kalurghat (Chittagong) and Hazaribagh (Dhaka). The West Pakistani peoples used to control the tanneries, including “...sourcing local raw material, processing it and manufacturing it to leather goods and footwear...” (ibid., p. 44). Only Bengali entrepreneurs operated a few small factories and these produced for the domestic market only (BFLLEA, 2014, cited in ibid.). Historically, the leather processing (i.e. tanning) has also undergone changes; for example, “...in the initial stage of the East Pakistan leather processing industry, raw hides and skins were primarily treated with vegetable substances. Once chrome tanning was introduced in 1965, vegetable leather was quickly substituted by the semi-processed tanned wet blue leather that took off as an export good...” (ibid., p. 44).

The first tannery in what is now Bangladesh was set up in Narayanganj sometime in the 1940s by the businessman R.P. Saha. The tannery was later shifted to the Hazaribagh area in Dhaka. In 1965, there were 30 tanneries in Dhaka. After the independence of Bangladesh, the Bangladesh Government acquired 30 tanneries by establishing the Bangladesh Tannery Corporation (BTC) (Rahman, 2010). However, the BTC was doomed to failure because of a lack of working capital, input scarcity, corruption and skilled manpower (ibid.). Later, it merged with the Bangladesh Chemical Industries Corporation (BCIC) which again failed to run the tanneries effectively and finally disinvested all the tanneries to the private sector in 1978 (Huq, 1990, cited in ibid.). The rapid and unplanned growth of WBL leather processing in Bangladesh was noted beginning in 1971 and by 1981 a total of 135 registered tanneries had emerged. Up until 1980, tanneries in Bangladesh mainly produced WBL for export. The growth also continued from 1980 to 1993 but declined afterwards. Government restrictions on WBL exports from 1977 to 1990 were one of the reasons for the decline of tanneries. One study noted that there are 206 tanneries in Bangladesh, out of which 187 are located in Hazaribagh (ibid.). Restructuring in the tannery sector took place after independence as government wanted to control the sector. Immediately after independence, the government encouraged the development of processed leather and related goods and exporting it to earn more foreign currency. In this regard, the government sped up processed leather development and banned wet blue exports in 1990, which caused a profound restructuring. In the aftermath of this decision, it was observed that many tanneries could not "...service loans anymore and shut down or were subcontracted by larger tanneries..." (Strasser, 2015, p. 44). One scholar noted the impact of such restricting in this way, "...interviews with tannery associations and international consultants suggest that this process is likely to be exacerbated once the tanneries relocate to the new site in the outskirts of Dhaka..." (ibid.). Nevertheless, the same scholar also observed that "...despite restructuring, the tanning sector experienced significant growth from the 1970s to the 1990s, with export records and the number of tanneries expanding..." (ibid.). Ahmed (2002, cited in Strasser, 2015) observed a jump of 86 tanneries registered in 1970 to 206 in 1995. Local tannery associations such as the Bangladesh Tannery Association (BTA) and Bangladesh Finished Leather, Leather Goods and Footwear Exporters' Association (BFLLEA) highlight this growth often to showcase the booming leather-related business, yet one study found that "...the real number of operating tanneries apparently was decreasing dramatically..." (ibid., p. 44). This observation stands quite in contrast with the increase in production of leather goods by the leather industry (which makes finished goods) because the decline of the supply of raw materials (by the tanneries) should have also affected the industry

as a whole. This might happen because very small tanneries went out of the market or were taken over by larger tanneries.

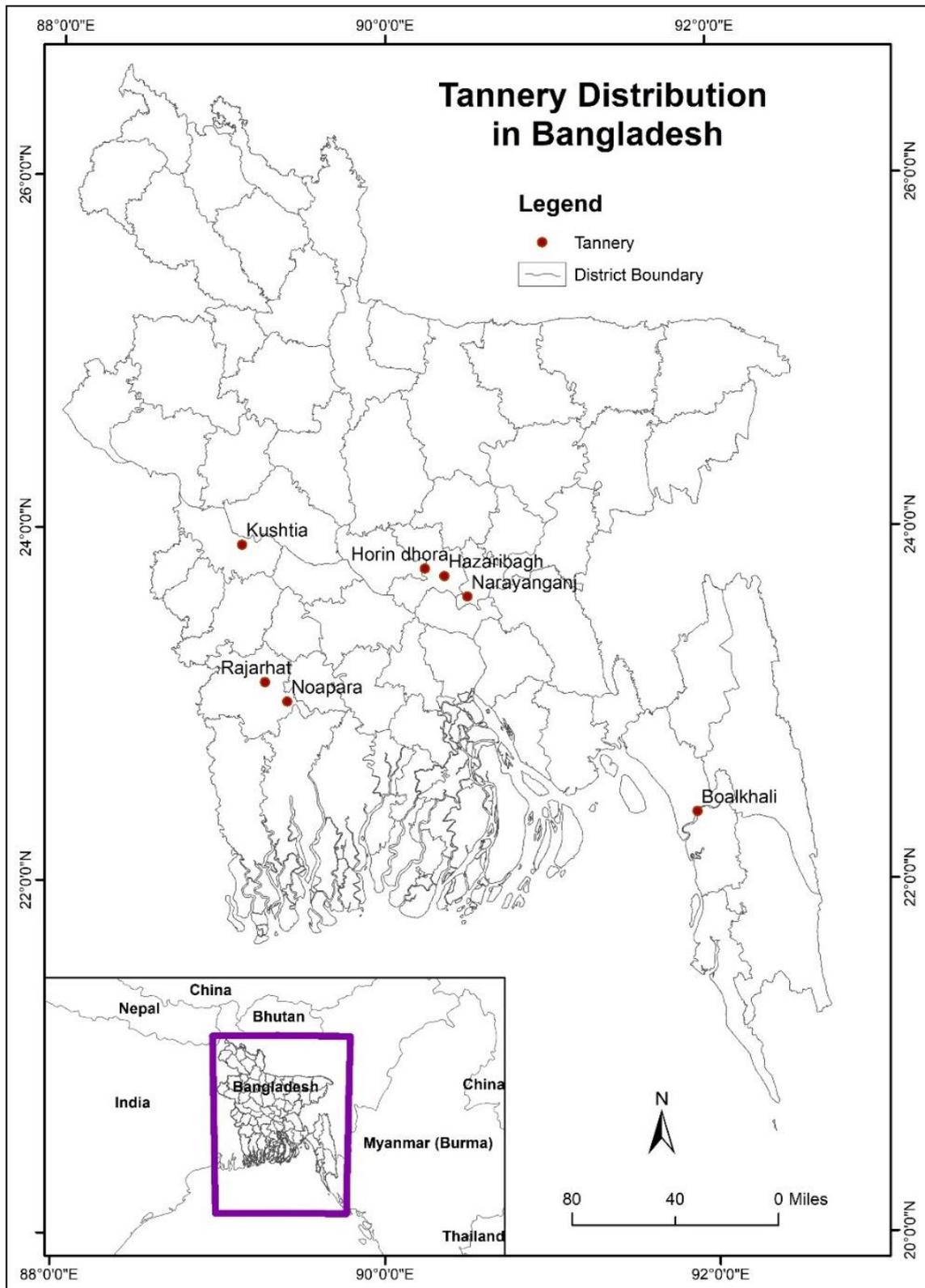


Figure 2.3: Map of Bangladesh and location of Hazaribagh and other tanneries.

(Source: Author's GIS-mapping.)

2.2.1 Location of the Industry

Up to 95% of the registered tanneries in Bangladesh are located in and around Hazaribagh(Walsh, 2013). Figure 2.3 shows a map of Bangladesh with the location of Hazaribagh, while Figure 2.4 shows the local concentrations of McTs at Hazaribagh.

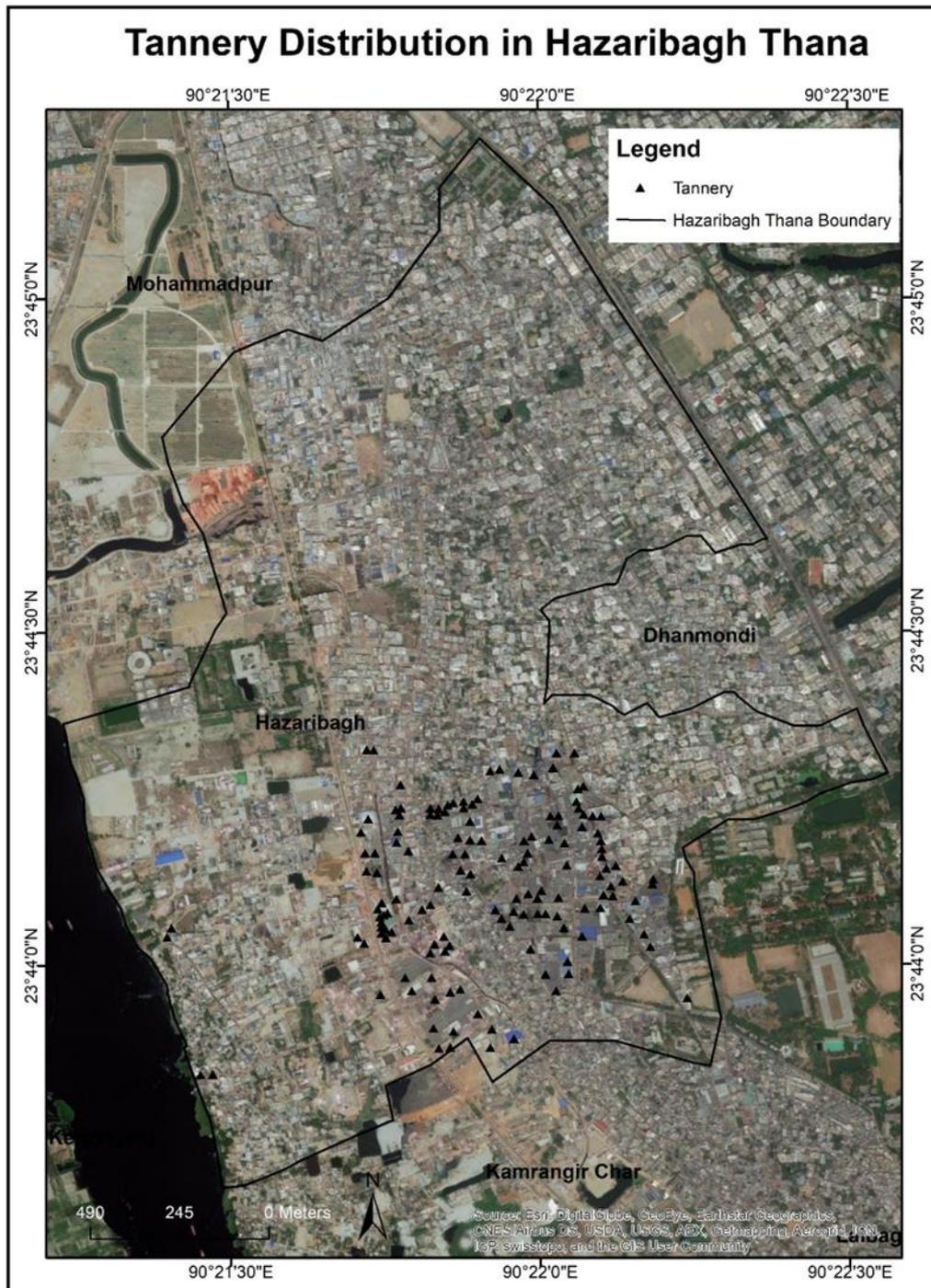


Figure 2.4: Tannery distribution at Hazaribagh.
(Source: Esri Digital Globe 2018; modified by author.)

2.2.2 Impacts of Government Policy Changes

Since the inception of Bangladesh, the government has wanted to boost and expand the leather sector, yet several policies have impacted McTs' operations in Bangladesh. The salient ones are:

- 1) technical and financial support to build up the required capacity for producing finished leather (Asian-Bank-Development-supported program that started in 1975)
- 2) wet blue export discouraged by imposing export duties since 1977
- 3) export of wet blue banned in 1990
- 4) relocation of all tanneries to Savar due to environmental considerations, shown in Figure 2.5 (Rahman, 2010).

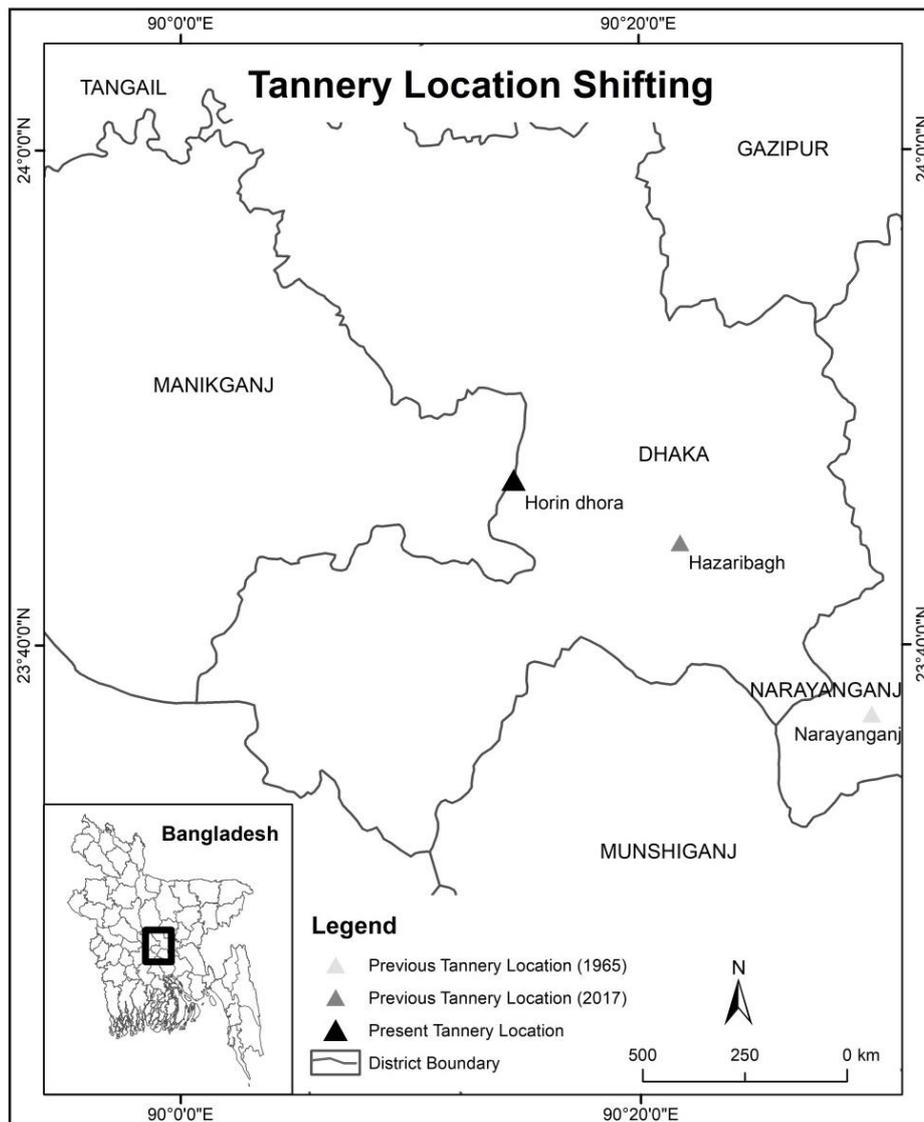


Figure 2.5: Relocation of tanneries.

(Source: Author)

2.3 A Typical Operational Process of a McT in Hazaribagh

In terms of the key functions found in a McT on a typical day, observations noted that there are as many as twelve steps involved in producing wet blue leather (i.e. the primary product of a McT). The process is depicted in the following Figure 2.6.

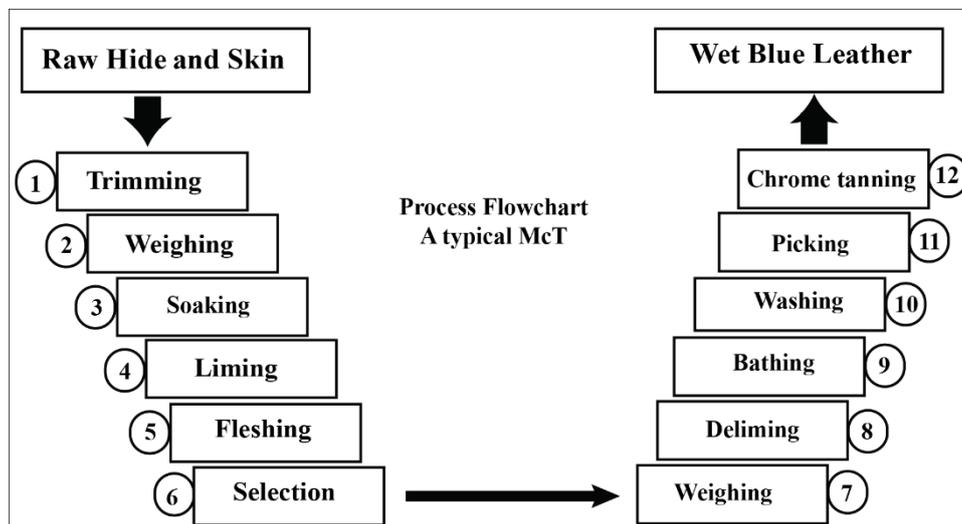


Figure 2.6: Process flow chart of an McT operation (raw hide/skin to wet blue leather).
(Source: Author)

Additionally, eight steps are involved to produce the final product (i.e. crust leather): preservation (with salt, dehydrating agents), re-wetting, de-hairing, de-fleshing (fat removal), pre-tanning, tanning (final stage), drying, and finishing. The process is shown in Figure 2.7.

2.4 An Appraisal of socio-political-economic Contexts

From a sociological point of view, tannery-related jobs are usually considered as low-yielding ones in which only people from the lower class of society work. As a general convention in Bangladesh, the word ‘Muchi’ (one who repairs shoes) is associated with tanners and such a sociological identity has remained in vogue for most of the people who work in this sector. In sum, people who work in the tannery sectors are often looked down upon in society in Bangladesh and their jobs are not considered as dignified as in other sectors.

Three leather trade associations dominate the industry in general. These are since 1958 the Bangladesh Tannery Association (BTA), since 1986 the Bangladesh Finished Leather, Leather Goods and Footwear Exporters’ Association (the BFLLEA represents the interests of primarily export-oriented, medium-sized and large tanneries) and since 2003 the Leather Goods and Footwear Manufacturers and Exporters Association of Bangladesh (the LFMEAB,

which only has 52 members) (Strasser, 2015). The latter appears to be the best organized, yet does not want to be associated with the tanning industry in Hazaribagh (Strasser, 2015). Additionally, the Bangladesh Hide and Skin Merchants Association (BHSMA) supports local hides and skins traders as they do business with big leather processors. As a matter of coordination and to assert control of the production and supply of hides and skins, “...prior to the Festival of Sacrifice (*Eid-ul-Adha*), the peak season for raw material supply, BHSMA deliberates annually with BTA, BFLLEA and governmental agencies on a fixed price *rate per ft²* of [raw hide and skin] (RHS)...” (ibid., p. 45). Additionally, the Leather Sector’s Business Promotion Council (LSBPC) was established in 2004 under the Ministry of Commerce to develop the potential for the export of leather products from Bangladesh. In addition to “...Bangladesh Export Promotion Bureau’s (EPB) focus on market research, LSBPC also provides capacity building and facilitate participations in trade fairs to increase the capabilities of leather processors and LGF producers...” (ibid., p. 46).

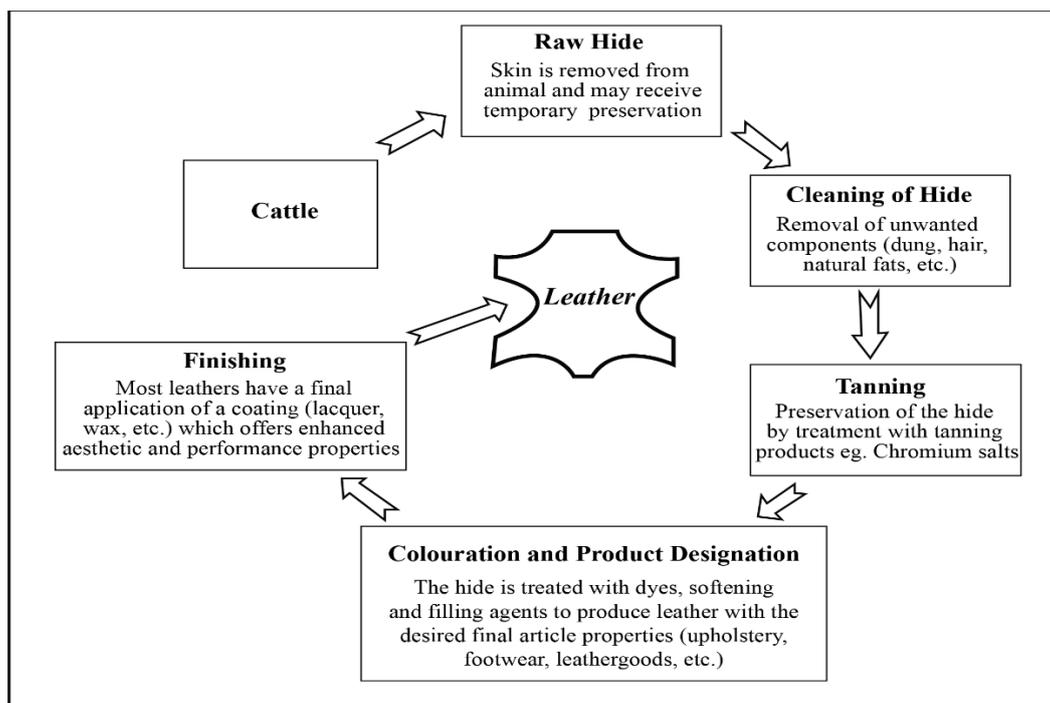


Figure 2.7: A complete process of producing leather.

(Source: Author)

The economic connection of the tannery sector with lenders is not encouraging, as many of them often do not get adequate financial support from the established banks or financial institutions. Nevertheless, it needs to be understood in order to observe how many MCTs manage their day-to-day business and therefore remain resilient. For example, one study

explains this in the following way when highlighting the linkage between the financial institutions and tannery operations:

“The tanning industry is highly capital intensive and technically depends on capital from financial institutions. Few development banks provide loans for larger investments such as machinery and equipment (Ahmed, 2002); [however], working capital is lent by public and private banks. All experts and tannery owners stress that the financial situation of the tanning industry is alarming. High interest rates conflict with the slow processing time for raw material (approximately 20 days) and the huge amount of capital, which is tied to stocked RHS or semi-processed wet blue (Ahmed 2002, p. 84). Ahmed (2002, p. 85) criticizes that the lending policy varies from bank to bank, is non-transparent and even changes with new personnel. Moreover, loans are inadequately monitored by banks and thus often used ineffectively. Many tanneries were found shut down or subcontracted as a result of loan default” (Strasser, 2015, p. 47).

Founded in 1949, the Bangladesh College of Leather Technology (BCLT) is the lone educational training institution located at Hazaribagh that serves the leather industry. Strasser (2015) noted that “...it offers graduate courses in leather technology, footwear technology and leather products, whereas floor-level workers in both leather processing and manufacturing subsectors are trained on the job...” (p. 47). Being a government-owned training institution, it remains substantially underfunded resulting into departure of teaching staff and students. This condition in turn contributes to the increase of unskilled labour force in leather industry and limits the sustainability of the sector largely. Nonetheless, BCLT was formerly attached to the Ministry of Education, and in 2012, it joined Dhaka University’s Faculty of Engineering and Technology as the Institute of Leather Engineering and Technology, which is considered as a good move towards creating a technical pool of people in this sector (ibid.).

2.5 An Overview of the Labour Sector of the McTs including the Supply and Demand Condition

Raw hides and skins (RHS) are the basic raw materials used in the leather industry in Bangladesh and its collections are carried out on a small scale year-round, while the collection takes place on a large scale during the grand festival of *Eid-ul-Adha*. In this regard, Strasser (2015) observed that “...collectors were found to purchase small quantities of RHS from mostly improvised slaughter facilities and distribute them either to suppliers that deliver larger quantities to wholesale markets or directly to wholesalers. According to the Bangladesh Hide and Skin Merchants Association (BHSMA), the country’s 21 temporary and permanent

wholesale markets maintain a powerful position in supplying tanneries and commercial leather exporters with preserved RHS...” (p. 51).

It is interesting to observe that the McTs carry out the leather production process “...in three stages (tanning, re-tanning/drying/pre-finishing, finishing), producing three intermediate products (wet blue, crust, and finished leather) that serve as a raw material for further production steps” (HeinenLederfabrik, 2014, cited in Strasser, 2015, p. 51). One study describes the supply chain in the following way:

“After processing wet blue to higher value-added semi-finished crust and/or finished leather, the supply chain divides into two major strands: Firstly, both crust and finished leather are exported, either directly or via buying houses to international buyers, who either finish crust leather themselves, or manufacture finished leather to leather goods (e.g. belts, purses, handbags) and footwear (e.g. shoe upper, insoles, ladies’ and gents’ sandals, shoes and boots). Secondly, the tanneries sell finished leather to local leather goods and footwear producers, who, after manufacturing, cater the final product to domestic and global markets. Given the low thickness of hides and smaller size of local cattle, leather sourced from Bangladesh does not qualify for either domestic upholstery or automobile upholstery, or for safety shoes, where value addition is highest...” (Strasser, 2015, p. 51).

Traders, tanneries, leather goods, and footwear manufacturers are the three types of buyers who collect processed skins at Hazaribagh (Strasser, 2015). Mostly, “...they specify the type of tanning, the degree of processing (crust, finished) or the nature of the finishing (e.g. aniline, semi-aniline, etc.). Asset specificity rises with the increasing degree of processing and complexity of the article (Meyer, 2011, p. 55). In particular, finished leather requires a degree of innovativeness and skilled labour force only very few large tanneries possess...” (ibid., p. 51). Nevertheless, “...at the manufacturing level, many micro, small, and medium-sized enterprises (MSMEs) produce on subcontract for large local, often export-oriented lead firms primarily to serve the domestic market. While lead firms market their products in own retail shops, the most important marketing channels for MSMEs are large corporate businesses and wholesalers. Direct sales to retail shops are rare. Multi-tiered and horizontal subcontracts within the MSMEs are innate to Bangladesh’s leather production network...” (ibid., p. 51).

2.6 An Overview of the Capital Management of the McTs

Capital management is a crucial issue for the McTs since we observed that a number of McTs had closed down their business, as they were unable to manage their capital effectively. One

important aspect of the McTs' operational environment that is notable here is that the product (i.e. skin) these McTs handle from the start (i.e. purchase) to the end (i.e. finished leather), is very expensive in comparison to other small businesses in Bangladesh. Moreover, the skin must remain intact from its procurement up to its delivery, and as such, quality control remains another very important aspect throughout the supply chain management. Considering the expensive nature of the business product, the McT owners had to remain careful about their investment from the beginning to end (procurement to sale).

As seen, many McTs are family-owned businesses, and as such the principal source of investment comes from within (i.e. family investment). The second aspect is that many commercial lending institutions invest in McTs and have different schemes of investment (from short-term to long-term). The third aspect is that McTs also receive investment from informal lenders. Although on some occasions the Government of Bangladesh (GoB) encouraged commercial lenders (such as banks) to lend money at low interest rates, informal lenders actually offer money at high interest rates. The commercial banks have several modes of investment in offering short-term investment (for example consumer credit loans) and the majority of McTs are thus dependent on short-term finance in general. However, I did not observe long-term financing (in terms of equity capital, which is mainly needed by growth-oriented small- and medium-sized companies) by commercial banks for the McTs. It was also observed that the majority of the investment needs to be done once yearly (during the occasion of the *Eid-ul-Adha* festival) when the bulk of the procurement is carried out and such procurement is done solely with cash money. The raw skins are purchased from all over Bangladesh during this season and at a micro-level the skin purchaser has to offer cash to individual sellers (who sacrifice animals during the festival). It has been seen that business owners manage their capital in a traditional manner such as logging the transaction details in notebooks and maintaining paper files. It might be unusual to an external observer that an McT handles nearly a crore Bangladesh Taka (Bangladeshi currency) (approximately 103,640 Euro) in a single day during the peak season and most of its transactions are done based on mutual trust and relationships with others.

2.7 Current State of Transition of the McTs

One study observed that "...with rapid industrial and population growth, the Hazaribagh tanning estate has grown to 70 acres (28 hectare) and has been gradually incorporated into Dhaka's urban fabric. The lack of willingness of political and private actors to adjust

Hazaribagh to environmental standards to avoid untreated effluents being released into the city's most important river Buriganga has put public health at risk. But it took the government more than 30 years to agree on a site for a new tanning estate to be set up outside the city confines..."(SEHD 1998, 2002, cited in Strasser, 2015, p. 44). The current site in Hemayetpur in the Upazila Savar, a sub-district of Dhaka District, 25 km northeast of Dhaka City, was eventually selected in 1994 (Ahmed, 2002). Since then, governmental bodies and the tannery associations have formally agreed to relocate, and a Memorandum of Understanding was signed in 2003. However, there has been a lack of commitment towards quickly devising and implementing plans. A High Court order in 2009 urged the government to comply with existing laws and regulations. Despite formal pressure, the tanneries keep operating in Hazaribagh under conditions beyond their capacity and sustainability (Strasser, 2015, pp. 44-45).

Chapter Three: Theoretical and Conceptual Approach of the Research

McTs in Bangladesh have been in business for over five decades and even pre-date the independence of the country. Its long-term successful operation evokes questions like how they managed their businesses over the years when numerous global-local changes have taken place. In finding answers to this question, theories related to resilience and organizational change shed light on McTs' survival. In this chapter, three sets of theories are elaborated to achieve the stated goal of the thesis.

3.1 Resilience: Theoretical Understanding

Resilience is used as a catchall term in different sectors and has different meanings. We find examples of resilience in the fields of ecology (Walker et al., 2002), individual and organizational psychology (Barnett & Pratt, 2000; Powley, 2009), supply chain management (Sheffi & Rice Jr, 2005), strategic management (Hamel & Valikangas, 2003a), and safety engineering (Hollnagel & Woods, 2006). However, scholars opine that "...although the context of the term may change, across all of these fields the concept of resilience is closely related with the capability and ability of an element to return to a stable state after a disruption..." (Bhamra et al., 2011, p. 5376). In essence, "...resilience is the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks..." (Walker et al., 2004). In sum, for many business organizations, scholars have observed four key components when evaluating resilience "...adaptability, responsiveness, sustainability and competitiveness..." (Gunasekaran et al., 2011, p. 5491).

The concept of resilience can also be traced to the realm of ecology and gained considerable recognition through the work of Hollings (1973) (i.e. stability with regards to the distinctions between efficiency and persistence of a system). Here, he argued by referencing "predator's efficiency" vs. "prey's survival potential" within a system and concluded that "...it is likely that stability is the rule, rather than the exception irrespective of where the two isoclines cross..." (p. 13). In a fundamental way, "...resilience, therefore, is the potential of a system to remain in a particular configuration and to maintain its feedbacks and functions, and involves the ability of the system to reorganize following disturbance-driven change..." (Walker et al.

2002, p. 7). Consequently, within any social or business organization, resilience is inherently found in “both the individual and organizational responses to turbulence and discontinuities” (Burnard & Bhamra, 2011, p. 5583). This further includes both, the ability to withstand systematic discontinuities as well as the capability to adapt to new risk environments (Crichton et al., 2009). Despite a growing trend of recognition of the concept within academia, the concept and features of organizational resilience, especially in the context of McTs, have remained largely undefined or unclear. In their study, Burnard & Bhamra (2011) thus suggest a number of propositions, of which the important ones are: “Resilience is a multidisciplinary and multifaceted concept and the concept of organizational resilience has developed following resilience studies based on ecological systems, socio-ecological systems, communities, supply chains and individuals...” (Burnard & Bhamra, 2011, p. 5586).

3.1.1 Key Perspectives of Resilience

It is needless to emphasize that to understand McTs’ resilience we need to first identify whether resilience is an element of measure, a feature, a philosophy or a capability. Pertinent to this question, it is also incumbent to find out whether the state of being resilient is a “tangible capability or an intangible capability”? (Teece et al., 1997, p. 514). A close look into the history and operation of McTs’ business might provide answers to these questions. Nonetheless, the McTs involve people. The nature and dynamics of close interaction between people and the organizations they created are the key to understanding the strain of resilience. In line of this, some studies examined SMEs to identify the correlation between people and resilience. Specifically, two scholars studied SMEs’ resilience and highlighted the link between the resilient qualities of the people present in the SMEs because business cannot be separable from the people who run it (Keong & Mei, 2010). Four important traits for resilience are therefore identified (flexibility, motivation, perseverance and optimism) and hence the importance of investigating “...the different facets of ‘Resilience’ and whether any of the concepts can be applied to SMEs...” (Bhamra et al., 2011, p. 5377). Additionally, from the organizational perspective, “...resilience refers to the capacity to continuous reconstruction...” (Hamel & Valikangas, 2003b, cited in Bhamra et al., 2011, p. 120). One scholar further contended that, “...resilience appears to convey the properties of being adapted to the requirements of the environment, or otherwise being able to manage the variability or challenging circumstances the environment throws up...” (McDonald, 2006, p. 156).

Ponomarov & Holcomb (2009) explain that the literature on resilience can be organized into three different categories: "...readiness and preparedness, response and adaption, recovery or adjustment..." (cited in Bhamra et al., 2011, p. 5380). Although most of the literature in this field refers to or emphasizes resilience as a means of recovering from problems or disasters/disturbances, the concept of "adaptive capacity" in ecological resilience is also referred to as one of the most important mechanisms that might lead to new equilibria (Carpenter et al., 2001, cited in Fiksel, 2006, p. 16). Here, resilience is generated from a system of adaptive capacities that is perceived as a process linking resources to outcomes (Norris et al., 2008). Furthermore, according to one scholar, four important characteristics possibly contribute to resilience: "...diversity – the existence of multiple forms and behaviours; efficiency – performance with modest resource consumption; adaptability – flexibility to change in response to new pressures; and cohesion – existence of unifying relationships and linkages between system variables and elements..." (Bhamra et al., 2015, p. 21). To summarize, it can be concluded that resilience is "...both a function of the vulnerability of a system and its adaptive capacity" (Dalziell & McManus, 2004, p. 5).

Although no official statistics are available to denote how many McTs were family-owned at Hazaribagh, yet the participants of this PhD research informed us that over 90% of McTs were family-owned businesses. There are several ways (for example, a structure-based approach and an intention-based approach) with which one can define the nature of family business in small enterprises. However, the structure-based approach in owning and managing firms' business is most pertinent in this study (Litz, 1995, pp. 101-102). Figure 3.1 explains the concept in detail.

<i>Unit with effective managerial control</i>	individual	1	2	3
	familial	4	5	6
	widely-held	7	8	9
		widely-held	familial	individual
		<i>Unit with controlling ownership</i>		

Figure 3.1: Managerial and ownership control of small firm business.

(Source: Litz, 1995, p. 101.)

The above grid clearly delineates between the managerial control and ownership control of a McT and has three levels based on “monocratic, oligarchic, and patrician” forms. The monocratic condition is mostly observed where the owner or the family members make most of the decisions and their presence is absolutely needed in the day-to-day functioning of the McT. It can also be seen from the grid that family interest is less prominent in cells 1, 3, 7, and 9, whereas it is more pronounced in cells 2, 4, 5, 6, and 8. It also shows that a diverse range of family involvement exists in the McTs’ business culture.

Experts in business organizations observe a “resilience gap”, meaning the global and local conditions are changing faster than the organizations try to adapt to such changes, which stands true for the McTs in Bangladesh (Hamel & Valikangas, 2003b, p. 2). The same experts also posited the following:

“Imagine a ration where the numerator measures the magnitude and frequency of strategic transformation and the denominator reflects the time, expense, and emotional energy required to effect that transformation. Any company that hopes to stay relevant in topsy-turvy world has no choice but to grow the numerator. The real trick is to steadily reduce the denominator at the same time. To thrive in turbulent times, companies must become as efficient at renewal as they are at producing today’s products and services. Renewals bust the natural consequence of an organization innate resilience...” (ibid., p. 3).

This is the cornerstone of becoming resilient to maintaining business by managing change and it seems the McTs have made impressive adaptations to remain relevant in the global and local business environment.

The socio-ecological system (SES) theory can be used to understand some of the important aspects of resilience in micro leather industries in Bangladesh. For analytical purpose in this research, the term ‘social-ecological system’ (SES) “...indicates a commitment to adopt a holistic, systemic perspective towards human and non-human elements of a problem situation of interest...” (Halliday & Glaser, 2011, p. 1). Schellnhuber (1998) was the first to label the SES at the global scale as the “Earth System”, and major international global environmental change research programs, represented in the Earth System Science Partnership (ESSP), later adopted the term. The need to investigate the whole SES arises from increasingly recognized evidence that understanding and anticipating the behaviour of the social and ecological components of the SES in many cases requires simultaneously taking into account both components. In other words, SESs are non-decomposable systems. Of course, it is always possible to single out certain social or ecological components for study, and this strategy has

provided an important understanding of the components, as has been traditionally done with great success by social and natural scientists (Gallopín, 2006, p. 294).

Having SES's root in the 'systems approach' that entails a number of methods of enquiry (Troncale, 1985, cited in Halliday & Glaser, 2011) whereby an observer can identify an entity which interacts with its surrounding environment giving rise to system properties (ibid., p.1). In terms of defining SES, it "...can be considered as a system composed of organized assemblages of humans and non-human life forms in a spatially determined geophysical setting..." (ibid., p. 2). Additionally, SES is perceived as a "...linked systems of people and nature, emphasizing that humans must be seen as a part of, not apart from, nature..." (Berkes & Folke, 1998, p. 4). In the same vein, Redman et. al (2004) suggested that SES is composed of "...a set of critical resources (natural, socioeconomic, and cultural) whose flow and use is regulated by a combination of ecological and social systems; and [it is] a perpetually dynamic, complex system with continuous adaptation..." (Redman et al., 2004, p. 163).

Nature and human society being the key terms in SES literatures, Halliday & Glaser (2011) problematized it and attempted to draw a boundary between nature and human society. They argued that a clear demarcation was not possible because of the fact that no pure 'nature' exists. Rather, humans often intervened into nature to create their own 'society' through a "web of relations" (ibid., p.3). These observations are true for the McTs under study because these micro-industries were concentrated in Hazaribagh and over several historical periods, interacted with nature and the surrounding society and as a result created their own systems and sub-systems. Consequently, the discussion about four basic sub-systems in a SES is also worth pondering in this research. It includes: "The natural subsystem (daily interactions with their bio-geo-physical environment and with each other); the control / management subsystem (humans 'outside nature' as engaged in organized, purposeful activity to mould their bio-geo-physical and social environments; the worldview subsystem (includes the knowledge, belief and value systems that underpin and guide human activity); and the technology subsystem (embodies systems of meaning: human values and knowledge of the world)..." (ibid., p.67f).

Gallopín (2006) identifies a conceptual linkage among vulnerability, resilience and adaptive capacity of a business organization, and within this framework, resilience is understood as "...a subset or component of a system's capacity of response. A system's capacity of response relates to the ability of the system to adjust to a disturbance, moderate the effects, take advantage of any available opportunities and cope with the consequences of any system transformations..." (ibid., p. 296). Here, vulnerability can be defined as "...the state of susceptibility to harm from exposure to stresses associated with environmental and social

change and from the absence of capacity to adapt...” (Adger, 2006, p. 268). Although the definition cited pertains to climate change research, this is also applicable to the McTs since the component of ‘social change’ impacts McTs’ operations to a great extent equally well. Therefore, McTs’ social-ecological systems can be directly linked to their resilience. Further, “...vulnerability research and resilience research have common elements of interest—the shocks and stresses experienced by the socioecological system, the response of the system, and the capacity for adaptive action. The points of convergence are more numerous and more fundamental than the points of divergence...” (ibid., p. 269).

The application of the term “adaptation” to human systems has been traced to the anthropologist and cultural ecologist Julian Steward, who used “cultural adaptation” to describe the adjustment of “culture cores” (i.e. regional societies) to the natural environment through subsistence activities (Butzer, 1989, cited in Smit & Wandel, 2006, p. 283). O’Brien and Holland (1992, p. 37) define the process of adaptation as “...one by which groups of people add new and improved methods of coping with the environment to their cultural repertoire...”. Denevan (1983, p. 401) considers (cultural) adaptation as a “...process of change in response to a change in the physical environment or a change in internal stimuli, such as demography, economics and organization.....”, thereby broadening the range of stresses to which human systems adapt beyond biophysical stress (Smit & Wandel, 2006, p. 283).

Adaptation, whether analyzed for purposes of assessment or practice, is intimately associated with the concepts of vulnerability and adaptive capacity. A general conceptual model of vulnerability has emerged in climate change scholarship and as a result the concept has become used more widely (Kelly & Adger, 2000; Downing, 2001; Turner et al., 2003; Smit & Pilifosova, 2003; Yohe et al., 2003; Adger, 2006). Consistent throughout the literature is the notion that the vulnerability of any system (at any scale) is reflective of (or a function of) the exposure and sensitivity of that system to hazardous conditions and the ability or capacity or resilience of the system to cope, adapt or recover from the effects of those conditions. These concepts are labeled in different ways and given different emphases in various fields.

Vulnerability is a concept that has been used in different research traditions (Adger, 2006; Smit & Wandel, 2006) but there is no consensus on its meaning. Depending on the research area, it has been applied exclusively to the societal subsystem, to the ecological, natural, or biophysical subsystem, or to the coupled SES, variously referred to also as target system, unit exposed, or system of reference (Adger, 2006). Vulnerability, like resilience, is generally viewed as being specific to perturbations that impinge on the system. In other words, a system can be vulnerable to certain disturbances and not to others. Two other widely accepted points are (1) the

multiscale nature of the perturbations and their effects upon the system and (2) the fact that most SESs are usually exposed to multiple, interacting perturbations (van der Leeuw, 2001, Turner et al., 2003, cited in Gallopín, 2006, p. 294). Vulnerability is also thought of as a susceptibility to harm, a potential for a change or transformation of the system when confronted with a perturbation, rather than as the outcome of this confrontation (ibid.).

3.1.2 Organizational Routines and their Impact on Resilience

This research explored what routines the McTs have and what effect they have on McTs' successful business operations. In exploring McTs' organizational routines, it is intended to explore several elements such as: 'pattern', 'recurrence', and the 'collective nature of routines'. Further, this study also explored whether routines are effortful accomplishment (variable and changeable routines) or recurring practices for the McTs. Finally, "...the processual nature of routines' that might result in achieving resilience will also be analyzed..." (Baños-Caballero et al., 2010, pp. 644-649). Interesting aspects in exploring the McTs' routines will also be to see, "...while routines may be simple sequences, their interesting feature is their ability to support complex patterns of interactions between individuals in the absence of rules, directives, or even significant verbal communication..." (Mensah, 2004, p.15). Given the absence of employee training and the research and development capacity of McTs, this approach might reveal important aspects of business resilience.

While exploring McTs' capacity building and its role in achieving resilience, this research also touches upon several aspects of organizational routine such as inertia and stability as well as flexibility and change for McTs' capacity building. These core areas of organizational routine might contribute to adapting to changes for McTs' long-term business. In this regard, scholars also observed that "...the internal structure of organizational routines has helped to explain the apparently paradoxical findings that organizational routines contribute to both stability and change..."(Pentland & Feldman, 2005, p. 804). "Closer observation of routines reveals that they can change continuously and endogenously, which leads others to emphasize their role in flexibility and change..." (Pentland & Rueter, 1994, Adler et al., 1999, Feldman, 2000, cited in ibid., p. 794). McTs develop their internal capacity to adopt to "...the business environment [which] is constantly changing and managing change to adapt to an uncertain future [which] is a challenge that requires resilience..." (Ates & Bititci, 2011, p. 5601). Resilience through capacity building is the most important aspect for McTs for their long-term business, which remains the central focus of this research.

3.1.3 The Organizational Theory and Change

Changes always happen within an organization due to a host of factors. Thus, this research takes into consideration the ‘evolutionary approach’ in explaining change and theorizes related to McTs evolving economic development arising from environmental opportunities and limitations (Tengblad, 2018, p. 20). The essence of organizational theory that attempts to explain evolutionary change is premised on the fact that all business organizations compete for their survival. “A company’s survival depends on the availability of resources as well as on its ability to use those resources effectively...” (ibid., p. 21). Similarly, the above-mentioned scholars argue that planned change whether happens “continually” or unplanned change happens “dramatically”. Change is inevitable in an organization thus resilience is akin to the idea of small firms such as McTs’ ability to implement change while keeping its business integrity intact (ibid., p. 22).

One of the ways to understand how McTs in Bangladesh manage change is to use the ‘evolutionary-geographic’ perspective. This particular field of study emerged mostly in Europe as scholars from geography and economics collaborated to better comprehend change management of micro-firms. It is to say that “...evolutionary economic geography is concerned with the spatialities of economic novelty; with how the spatial structures of the economy emerge from the micro-behaviours of economic agents; with how, in the absence of central coordination or direction, the economic landscape exhibits self-organisation...” (Boschma & Martin, 2007, p. 2). In another way, the prime focus of evolutionary economic geography is “...with the processes by which the economic landscape – the spatial organisation of economic production, circulation, exchange, distribution and consumption – is transformed from within over time...” (ibid., p. 6). These insights are of importance not only to map factors that contribute to McTs continuous development of economic novelty but also to elucidate how McTs are self-regulated and are able to shape the local economy to their advantage.

Business organizations change either radically (i.e. revolutionary) or gradually (i.e. evolutionary) to adopt to new environmental conditions. Some scholars observed that if these organizations face extreme environmental change it applies “swift and painful treatment” to accomplish major transformation within a short period for its survival (Suarez & Oliva, 2005, p. 1018). In this research, it had been observed how McTs underwent several changes in the last four decades. The most profound and recent one involved a relocation from Hazaribagh to Savar. Nonetheless, the same scholar put forward four dimensions of environmental change, if taken into consideration, might facilitate one’s understanding of change management. These

are: 1) "...frequency – the number of environmental disturbances per unit of time; 2) amplitude – the magnitude of deviation from initial conditions caused by disturbance; 3) speed – rate of change of disturbance; and 4) scope – the number of environmental dimensions that are affected by simultaneous disturbances..." (ibid., p. 1022).

Social capital and its contribution towards achieving resilience for organizational change is noteworthy. Social capital is broadly described by researchers as an asset embedded in the relationships of individuals, communities, networks, or societies (Burt, 1997; Coleman, 1990; Nahapiet & Ghoshal, 1998; Walker et al., 2002, cited in Leana & Van Buren, 1999, pp. 538, 539). These scholars also maintain that "...unlike other kinds of capital, social capital cannot be traded on an open market; rather, it is a form of capital that can change as relationships and rewards change over time, and it disappears when the relations cease to exist..." (ibid.). There are two primary components of social capital applicable to MCTs: 1) "Associability: defined as the willingness and ability of participants in an organization to subordinate individual goals and associated actions to collective goals and actions; Trust: it is both an antecedent to and a result of successful collective action. Trust is necessary for people to work together on common projects, even if only to the extent that all parties believe they will be compensated in full and on time..." (ibid., pp. 542-543).

The perception of a "resilient organization" is an evolving concept largely attributed to an "...understanding [of] and coping with the modern-day pace of change and associated work stress. Resilience is the ability of an individual or organization to expeditiously design and implement positive adaptive behaviours matched to the immediate situation, while enduring minimal stress..." (Mallak, 1998, cited in Mallak, 1999, p. 223). This scholar suggested the V²E²C² (vision and values, elasticity and empowerment, coping and connections) Model of Organizational Resilience, which was put to a test in this study.

3.1.4 Capital Management of the MCTs and Resilience

The literature in this section was reviewed from the available SME literature as the nature of firm and capital management are similar for MCTs and SMEs. One study on Spanish SMEs shows that "...working capital management is important because of its effects on a firm's profitability and risk, and consequently its value..." (Smith, 1980, cited in Baños-Caballero et al., 2010, p. 511). Concomitant with this assertion, the same study also reveals that "...most of an SME's assets are in the form of current assets, while current liabilities are one of their main sources of external finance, because of the financial constraints they face and difficulties they have in obtaining funding in the long-term capital markets..." (ibid.). This study used the Cash

Conversion Cycle (CCC)³ concept to determine SMEs' working capital management matters and concludes that "...SMEs have a target CCC, and they try to adjust their current CCC to their target quickly..." (ibid., p. 513). Despite these facts, no studies actually analyzed the process involved in capital management of McTs in Bangladesh. Additionally, a cohort of scholars undertaking similar research also posit that "...managers can create value by reducing their inventories and the number of days for which their accounts are outstanding. Similarly, shortening the cash conversion cycle also improves the firm's profitability..." (García-Teruel & Martínez-Solano, 2007, p. 165). In the Bangladeshi McT context the 'managers' cited above might be replaced with 'owners' since the role of manager is usually performed by the owners. One study that was carried out in Ghana succinctly outlines the fact that finance remains the single most important barrier for the growth of SMEs in Ghana and several important factors are responsible for the lack of finance: 1) a relatively undeveloped financial sector with low levels of intermediation; 2) a lack of institutional and legal structures that facilitate the management of SME lending risk; and 3) a high cost of borrowing and rigid interest rates (Mensah, 2004, p. 6). This study documented two types of SME financing: official schemes and financing provided by financial institutions.

3.2 McTs' Knowledge Management (KM) –Environment, Tools, and Challenges

Scholars have defined knowledge as a "...fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of 'knowers'. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices and norms..." (Mandrulianu, 2008, p. 117). It appeared that the research participants shared their experiences about techniques and processes. In other words, they used knowledge management in running their businesses. This process is extensive, but was talked about as if it is a normal way of doing things on a daily basis. In this regard, while evaluating SMEs' knowledge aspects, Levy et al. (2003) argued that SMEs are

³ The cash conversion cycle (CCC) is a metric that expresses the length of time, in days, it takes for a company to convert resource inputs into cash flows. The cash conversion cycle attempts to measure the amount of time each net input dollar is tied up in the production and sales process before it is converted into cash through sales to customers. This metric looks at the amount of time needed to sell inventory, the amount of time needed to collect receivables and the length of time the company is afforded to pay its bills without incurring penalties. (Investopedia, 2018, "Cash Conversion Cycle – CCC". Retrieved from <http://www.investopedia.com/terms/c/cashconversioncycle.asp#ixzz4tY8S6Fmo> on 18.09.2018.)

good at knowledge creation, but poor at knowledge retention. Nevertheless, retained knowledge plays a significant part in achieving resilience through maintaining a flexible workforce, strategically thinking to manage operations and technology. The same scholars also suggested that the McT owners must remain “...proactive in knowledge sharing arrangements to recognise that knowledge has value and the value added is derived from knowledge exchange...” (ibid., p. 16). Furthermore, since over 90% of the McTs are family-owned businesses⁴ at Hazaribagh, it is only natural that personal relationships between and among the workers, owners, and operators are a major contributor to achieving resilience. Another scholar opined that if any business organization is able to utilize existing personal relationships of workers and owners, already existing bonds “...coupled with a clear understanding of what the company wants to accomplish strategically, can become a sustainable competitive advantage that can lead to growth and increased profitability [resilience]...” (Gunasekaran et al., 2011, p. 5491).

Now it is relevant to discuss what knowledge network management actually means and who takes part in it. In general, within a McT environment, “...knowledge is understood as a process where certain organisational competences are used to acquire new, economically useful knowledge. Knowledge dynamics is a key concept in the project...” (Halkier et al., 2010, p. 6). Nonetheless, since knowledge dynamics are an important aspect in managing knowledge, it is interpreted as “...interactions of individual actors or groups of actors that learn, search for, or diffuse new knowledge, and apply old and new knowledge in the economy...” (ibid., p.6). Again, knowledge dynamics are not isolated processes, as many activities such as: “employment of knowledge workers; education; training; consulting; in- and out-sourcing” (ibid., p.6) all contribute to overall knowledge management. However, because of successful knowledge management, one can find “innovation” in business in terms of an “improved product (good or service), or organisation or process” (ibid., p.6).

Now let us turn to a standard definition of Knowledge Management (KM). The Business Dictionary defines it as “Strategies and processes designed to identify, capture, structure, value, leverage, and share an organization’s intellectual assets to enhance its performance and competitiveness. It is based on two critical activities: (1) capture and documentation of individual explicit and tacit knowledge, and (2) its dissemination within the organization”(Business Directory, 2018b). Another way one can define KM is as “...a collaborative and integrated approach to the creation, capture, organization, access, and use of

⁴ According to the participants’ information which was obtained during the fieldwork.

an enterprise's intellectual assets..." (Grey 1996). In other words, KM is the process by which "...we manage human centered assets...the function of knowledge management is to guard and grow knowledge owned by individuals, and where possible, transfer the asset into a form where it can be more readily shared by other employees in the company..." (Brooking, 1999, p. 154). Further definitions come from the "...intellectual or knowledge asset perspective: Knowledge management consists of 'leveraging intellectual assets to enhance organizational performance'..." (Stankosky, 2008, cited in Nnabuife & Ojukwu, 2015, p. 25).

KM in organizations that have a flat hierarchical structure has its own challenges in terms of decision making within a "functional hierarchy" (Rasmussen, 1985, p. 234). However, it is important to identify the interaction process of decision makers and other actors and their acts of knowledge creation in achieving resilience. Similarly, a scholar posits that "...a challenge for further research is to sort out more systematically the interaction processes in knowledge exploration, examination, and exploitation with regard to commonalities and differences of KIBS that have their focal knowledge base in analytical, synthetical and symbolic knowledge..." (Strambach, 2008, p. 167). Here, KIBs denote external knowledge-producing firms that deal specifically with knowledge production and its management. Additionally, knowledge comes in various forms and therefore taking a narrow approach in knowledge management must be avoided. For example, scholars suggest that "...not only does technological, organisational and economic knowledge have to be merged, but also institutional and cultural knowledge. Heterogeneous actors from different spheres – the economy, politics and civil society – operating at different spatial scales – the local, national and global, have to combine their knowledge and come to a common understanding..." (Strambach & Surmeier, 2013, p. 4).

3.2.1 Various KM Models

"People may not only know more than they can tell, but also more than they will tell." Following Michael Polanyi's ground-breaking work, Nonaka & Takeuchi (1995) identified that every organization (firm) has two types of knowledge: individual and organizational. Within each category of individual knowledge, two forms appear – tacit and explicit knowledge (Nonaka & Takeuchi, 1995, cited in Krogh et al., 2013, p. 4). "Explicit knowledge can be captured in symbols, codes, statements, figures, drawing, heuristics, criteria and so forth, whereas tacit knowledge is tied to the body, senses, movement, physical experiences, mental practice, intuition, etc. ..." (ibid., p.4). This research captures tacit knowledge in understanding the knowledge dynamics of the McTs. In this research the model titled "The knowledge-

creating process: SECI model” (see Figure 3.2) was used to analyze how knowledge is created within the McT and then diffused (Nonaka et al., 2008, pp. 18,19).

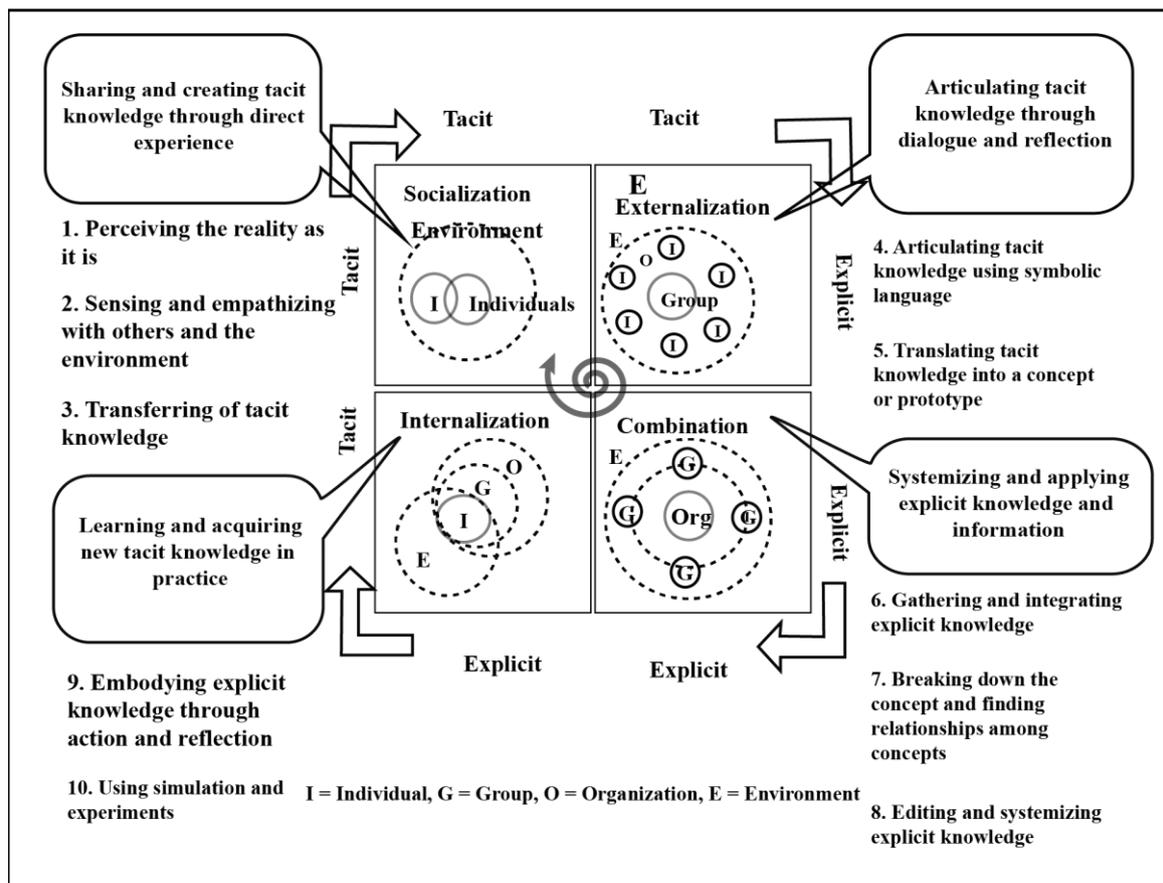


Figure 3.2: SECI theoretical model.

(Source: Nonaka et al., 2008, p. 19.)

SECI is an acronym for socialization, externalization, combination, and internalization (Nonaka et al., 2008, pp. 18, 19). Socialization describes the sharing of tacit knowledge between individuals through their close and repeated interaction. The sharing of tacit knowledge presupposes coordinated activities that give rise to joint experiences. Externalization is the articulation and expression of knowledge. Combination is a process whereby pieces of data, information and knowledge at the explicit side are reassembled in novel ways. Internalization describes a process where external stimuli enter the knowledge conversion process of individuals. This is described as a process of building up the capacity to perform tasks through repeated practices (ibid., pp. 20-26). In this process, an “...individual interacts with the organization through knowledge. Knowledge creation takes place at three levels: the individuals, the group, and the organization levels...” (Nonaka & Takeuchi, 1995, p. ix).

The SECI process occurs in teams of individuals who work in spaces throughout the organization (Krogh et al., 2013). As an outcome of SECI, people also capture knowledge assets that become a resource the organization can use to create new knowledge and innovate across time and space (Nonaka & Konno, 1998). The metaphor of an upward “knowledge spiral” is often used to illustrate how this process enables organizations to continuously create new knowledge at many levels (Krogh et al., 2013, p. 5). It is important to note, as Michael Polanyi concluded, that “...the structure of tacit knowing determines the structure of comprehensive entities...” and perhaps such an understanding is crucial to the sustainable growth of SMLIs (Polanyi, 1966, p. xi). Further, two other models were also used in this research to illustrate the “categories of organizational knowledge” and “knowledge conversion between tacit and explicit knowledge” (Popadiuk & Choo, 2006, pp. 307, 308). This comes from the fact that it was worth understanding how scholars “...tie in the definition of knowledge, the idea of knowledge conversion, and the SECI model with innovation in organizations...” (Krogh et al., 2013, p. 5).

One study on small- and medium-sized entities in Indonesia shows that “...knowledge is managed on people-based-approach in small and medium enterprises. Given SMEs characteristics—mainly owned by local people, labor intensive, workers and entrepreneurs are low educated, and financing their operations from personal savings—knowledge management capability in SMEs are mainly achieved by networking with other organizations such as companies, universities, technical colleges, and government agencies through alliances...” (Suryaningrum, 2012, p. 35). In this study, two dominant themes emerged in terms of KM for the small- and medium-sized enterprises in Indonesia: “KM capability” which can be understood by exploring the “...capability as a combination of processes that control and manage the creation, codification, dissemination, storing and leveraging of knowledge in organizations...” and “KM practices” where three phases exist in relation to unlocking potential reservoirs of tacit knowledge: “...(1) capturing and locating knowledge, (2) transferring and sharing knowledge, and (3) enabling knowledge...” (ibid., p. 36). In the same study, family orientation and knowledge management capabilities were also explored because McTs are generally owned by one or two individuals or by a family, resulting in there being no clear division between management and operations. Accordingly, “...the advantage of family firms may be viewed from two perspectives: ownership and management. From the perspective of ownership, the uniqueness of family firms is that family members hold a substantial stake of firm assets. From the management perspective, one common characteristic of family firms is that family members serve as the firm’s Chief Executive Officer (CEO) or fill other top

management positions...family orientation will significantly affect an organization’s KM capability...” (ibid., p. 38).

An important step in the KM field is to consider “knowledge as capital” (Bontis et al., 1999, p. 12). In this regard, one scholar refers to the Skandia intellectual capital valuation scheme, which is presented in Figure 3.3 to show within a company’s overall value structure where the knowledge capital fits in. In this scheme, the main distinction is made between the “...accumulated employee competence and organization level accumulated intangible capital...[where] competence is enabled by skill, but mobilized through attitude...”(Tuomi, 1999, p. 380). Nevertheless, the other component in this model is “intellectual agility”, which refers to the flexibility of using knowledge in different contexts. Additionally, the “structural capital” means the “...capital accumulated in internal and external structure, and also of renewal capability that underlies flexibility and learning of the organization...” (ibid.).

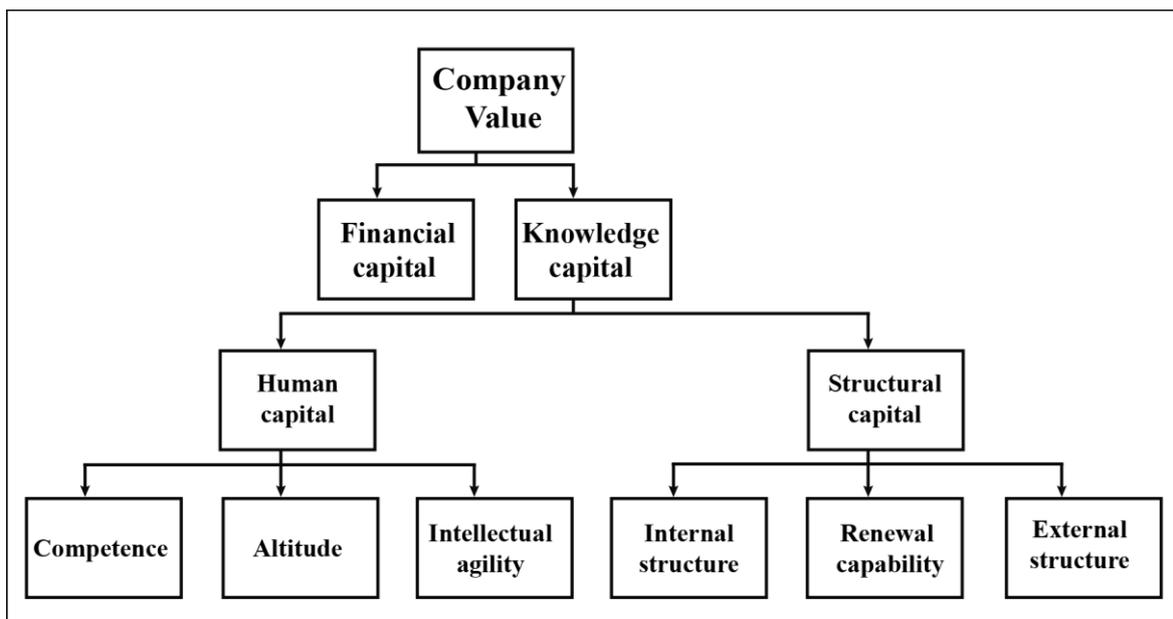


Figure 3.3: Knowledge capital (Skandia scheme).

(Source: Tuomi, 1999, p. 383.)

3.2.2 The Role of Knowledge Dynamics and its Link to Innovation for Sustainable Growth

Scholars studying the growth of McTs in Bangladesh contend that “...the contribution of the sub-sector [McTs] towards achieving economic growth through an expansion of the export market for both semi-processed and finished leather goods is immense and the only way to such success is through embracing the *value addition* initiatives...” (Khan et al., 2015, p. III).

One way to add value to the goods is to generate new ideas in the business and translate such ideas into products. Many MCTs do not actually add value to their products, yet they are closely linked with other industries that add value to leather products.

One of the first issues that emerges from research on knowledge and knowledge management is the degree to which research still focuses on the domain of managing explicit knowledge “...despite the avowed recognition of the importance of tacit knowledge...” (Kane et al., 2006, p. 143). A second issue emerges when consideration is given to the actual conduct of research that is undertaken. In some cases, researchers may explicitly or implicitly state their methodological stance but subsequently appear to have difficulty in implementing the methodology in their primary research. Innovation is a key part in the overall scheme of resilience. However, it requires “a well-planned system of knowledge management” so that a firm can adapt to technological, market and administrative changes and in the process generate new knowledge (Popadiuk & Choo, 2006, p. 302). However, innovation and knowledge creation are two interlinked concepts and have a complex relationship, which is examined in this research. In another way, Afuah (1998) also refers to “...innovation as new knowledge incorporated in products, processes, and services. He classifies innovations according to technological, market, and administrative/organizational characteristics” (Popadiuk & Choo, 2006, p. 302). The role of technology in innovation generation and knowledge diffusion should not be underappreciated as Bangladesh has seen some of the largest cellular phone penetration into the market in South Asia. From this perspective, “...the generation and diffusion of innovations rely more and more upon new technological knowledge which is generated not only by learning processes implemented by internal research and development laboratories, but also and to a growing extent, by the daily interaction, communication and trading of information of learning firms among themselves and with other scientific institutions...” (Joshi, 2014, p. 272).

Inter- and intra-firm cooperation and knowledge sharing contribute to sustainable growth and in this regard, scholars have observed a seamless linkage between and among SMEs, which can also be extrapolated to the present study. Speaking about collaboration, scholars found that “...there are significant positive relationships between inter-firm cooperation, cooperation with intermediary institutions, cooperation with research organizations and innovation performance of SMEs, of which inter-firm cooperation has the most significant positive impact on the innovation performance of SMEs...” (Zeng et al., 2010, p. 181). In addition, some research points out that “...the vertical and horizontal cooperation with customers, suppliers and other firms plays a more distinct role in the innovation process of SMEs than horizontal cooperation

with research institutions, universities or colleges, and government agencies...”(ibid.,p.181). Scholars also examined, “...the knowledge-based determinants of productivity of firms [where] it seeks to investigate the importance of various sources of knowledge in explaining productivity in the different industries. The knowledge sources driving productivity performance are very different across sectors... In garments and leather products, R&D and design activities, high quality management and licensing technology from foreign firms are significant productivity determinants...” (Goedhuys et al., 2008, p. 1). Additionally, researchers proposed that “.....the relationships between research-based knowledge and action can be better understood as arenas of shared responsibility, embedded within larger systems of power and knowledge that evolve and change over time. The unique contribution of research-based knowledge needs to be understood in relation to actual or potential contributions from other forms of knowledge...” (Van Kerkhoff & Lebel, 2006, p. 445). Additionally, Strambach & Surmeier (2013, p. 3) emphasized that “...the creation of sustainable standards incorporating the social dimension can be considered an innovation and the visible outcome of complex knowledge dynamics...”.

Within the broad framework of knowledge management, Tsoukas (1996) posits that the “...tacit and explicit knowledge are mutually constituted – they should not be viewed as two separate types of knowledge...”. In particular, the author argues that tacit knowledge is a component of all knowledge and should not be analyzed in isolation. Such interaction between the tacit and explicit can be demonstrated in models of knowledge creation as the “knowledge spiral”, proposed by Nonaka & Takeuchi (1995), which proposes the conversion of knowledge from the tacit to the explicit state. Therefore, knowledge is an asset the organization develops over time through the organized action of its individuals within a context that permeates the organization. It is up to the organization to identify the “...two types of knowledge (tacit and explicit) and develop a process to manage this asset, i.e., the KM process...” (Gonzalez & Martins, 2017, p. 251).

3.2.3 The Roles of KIBS in helping McTs to achieve Resilience through Sustainable Growth

As observed in this research, although the McTs produce a whole range of knowledge, their management and retention are poor. One of the reasons might be that there are no external agencies available, which could help the McTs with knowledge management. This is again one of the areas that needs to be addressed in the future to increase the sustainable growth of McTs. In relation to this, scholars noted that “...the importance of knowledge and innovation in

modern economies justifies the increasing interest that scholars are taking in studying knowledge-intensive business services (KIBS)...”(Muller & Doloreux, 2007, pp. 4-5). In broad terms, KIBS provide “knowledge-intensive inputs to the business processes of other organisations” (ibid., p.4). In light of this, Miles & Kastrinon (1995) identified key characteristics of KIBS, which might help policymakers support McTs’ knowledge management in the future. These are: “1. KIBS rely heavily upon professional knowledge; 2. they either are themselves primary sources of information and knowledge or they use knowledge to produce intermediate services for their clients' production processes; 3. they are of competitive importance and supplied primarily to business...” (ibid., p. II). In the Bangladeshi McT environment, although there is no private economic market for KIBS, yet, a few external firms such as the Business Promotion Council (BPC) and Leather Technology Institute (LTI) participate in providing training to McT technicians thereby contributing in knowledge production. Consequently, scholars have also noted that “sustainable certification schemes” of standards compliance along with strengthening “the social dimension of sustainability” pay huge dividends for domestic industries trying to remain globally competitive (Strambach & Surmeier, 2013, p. 1). In this regard, external KIBS organizations are contracted by either importing firms or by local governments which can play significant roles.

“The use of an external network has a significant positive effect on turnover growth for small firms. This network may include universities, competitors, partners, suppliers and advisors. Firms that make use of such networks are able to exchange knowledge on the product level, but also information on market structure, trends and developments could be shared. This raises the level of innovation input (information being one of the inputs). Furthermore, the knowledge diffusion accelerates the transition process of strategic inputs into actual output...” (Sher & Yang, 2005, cited in Uhlaner et al., 2007, p. 13).

3.3 Challenges of McTs due to changing Global and Local Conditions

McTs’ resilience cannot be understood in isolation since they are part of a greater supply and demand system. Demand mainly originates in the Global North (although to a limited extent domestic requirements also exist), and McTs take part in supplying raw materials for the leather industry. We should begin with the typology of the global value chain (GVC) where the McTs play an apparently insignificant but nevertheless important role. There are “...five types of global value chain governance – hierarchy, captive, relational, modular, and market – which range from high to low levels of explicit coordination and power asymmetry...” (Gereffi et al., 2005, p. 78). Considering this, a dual pressure always exists between the Global North and

Global South that shapes the value chain and sets the tone for various standards as explained here: “...despite spatially diverse production systems and the fragmented ownership of different productive functions, lead firms have continued to dictate the terms and conditions of participation in networks and chains through different types of governance that act upon participants ‘at-a- distance...’ (Neilson et al., 2014, p. 2). Nevertheless, when we talk about GVC, the first thing that becomes apparent is the ‘push’ factor that is integral to the value chain that emanates from how the “...buyer-supplier relations underlie an uneven distribution of information and knowledge. Such asymmetries at global level demand weaker actors at the lower end of the supply chain to adapt, often by means of informal practices...” (Strasser, 2015, p. 1.1).

As a corollary to the point mentioned above, the influence of private sectors in facing challenges should also not be underestimated. One scholar has noted that “...in some sectors (such as wood-based products), and in particular areas of attention (such as environmental standards), international NGOs have become important actors engaged in defining standards that become accepted industry-wide, as well as in monitoring and compliance activities...” (Nadvi, 2008, p. 8). A few NGOs are operating in Bangladesh, though not to a wide extent, helping some McTs with setting standards to achieve resilience. For example, Thomas Picard (2015) explains the dilemma in this sector in terms of setting standards: “We wanted to switch as soon as possible to sourcing our raw materials only from tanneries that met social and environmental standards as we do. And we wanted to modernize our working practices, but found that there was a shortage of Bangladeshi workers with the necessary skills.” Additionally, “...the leather products sector routinely received technical assistance on skill development, market linkages, process up-gradation, value chain study and production manual from different donor agencies like USAID-PRICE, ILO-TVET program, SDC, GIZ, ITC-Geneva. The proposed actions in this report will add value to the actions already initiated by these agencies due to establishment of Common Facility Center(CFC). Micro, Small and Medium-sized Enterprises (MSMEs) will get better opportunity for utilizing their acquired knowledge received from donor agencies and will be able to go into production of higher value added products...” (INSPIRED, 2013, p. 6). Further, globalization triggered “...societal responses to the ‘governance deficits’ whereby domestically located private actors (such as business, NGOs, labour organizations) started to play a more significant role in defining many of the ‘rules’ (i.e. standards, governance, compliance)...” (ibid., p.9). Globalization is also “...associated with the relative decline of national regulatory governance, and the growing significance of both international and private actors in the arenas associated with ‘market’ and

‘institutional and political’ governance. Global standards are at the core of this process...” (ibid., p. 10).

3.3.1 Drivers and Barriers in achieving Resilience

Industries situated in the Global South remain heavily dependent on importing firms’ conditions and “...lead firms have continued to dictate the terms and conditions of participation in networks and chains through different types of governance that act upon participants at-a-distance...” (Neilson et al., 2014, p. 2). In this way, the changing environment at the global level where lead firms are located directly affects McTs’ business practices. The growing international trade and ongoing fragmentation of value chains are major drivers. The growing complexity of interrelations in global production and distribution between producers, different suppliers and retailers is increasing the need for greater coordination and higher compatibility within value chains (Gereffi et al., 2005; Nadvi, 2008; Nadvi & Wältring, 2004, cited in Strambach & Surmeier, 2013, p. 2). Further, “...the regulative, normative and cognitive elements of the national institutional environment impact the adoption of practices largely by fostering or hampering the compliance and acceptance at the firm level...” (Braun, 2006; Delmas, 2002; Scott, 2008, cited in Strambach & Surmeier, 2013, p. 3).

The power inequality that pertains to the capacity of big firms to control the market also hinders the growth of McTs and in turn creates barriers to achieving resilience. In view of this, one scholar who studies the MSMEs of the leather industry in Bangladesh noted that “...MSMEs represent the large supply base serving the domestic market. However, they do not have direct access to their major source of income as the market is controlled by few local lead firms, which integrate MSMEs selectively into their supply chain by subcontracting. Power inequalities in both markets appear to impede a better integration of MSMEs...” (Strasser, 2015, p. 4). Importantly, one of the barriers that was observed related to the ‘clustering’ of several McTs to form a bigger group to compete in the market; in other words, to achieve resilience. This observation validates findings from previous research which showed that a number of micro-, small, and medium entrepreneurs (MSMEs) “...are unable to function as important market players due to the following reasons: absence of clustering strategy for joint production and retailing by MSMEs; inefficiency in production lack of skills...unable to raise adequate financing...” (INSPIRED, 2013, pp. 5,6). Also noted is the significance of small firm clusters as critical sites of industrial competitiveness. “Some of the most significant examples of successful, innovative and internationally competitive small firm clusters from the developing world are located in the ‘Rising Powers’ and cluster promotion is a core element of national industrial policy in some of these countries...for a greater focus on the formal and informal

institutional context, termed the ‘social contract’, in explaining divergent experiences and practices observed across these countries...” (Knorringa & Nadvi, 2016, p. 55).

A recent study on Leather Sector Reform highlights some of the challenges the McTs have faced over the years, with particular reference to its recent relocation:

“Legacies of mistrust were significant, and to some degree, justified. The first critical step was to find a way of approaching the issue that would put some distance between current reform efforts, and the unproductive engagement of the past. Rather than emphasize environmental and health concerns, as previous reform efforts had, the team focused on the potential economic gains of relocation. This was an approach that had come up in early conversations with tannery entrepreneurs, and it was one which would appeal to government as well. As the Foundation’s team identified partners (formal and informal) and narrowed its focus to a set of outcomes associated with increasing export growth, it began to build a coalition capable of resolving the seemingly fundamental disagreements. This included, but was not limited to, disagreement on how to finance a centralized effluent treatment plant (CETP) and other relocation costs...” (Harris, 2016, pp. 9, 10).

In view of this, the International Trade Centre (ITC) extended its help towards the Least Developed Countries (LDCs) to form active partnerships. However, one of the challenges of partnership include difficulty of integrating the suppliers to a global network. Nonetheless, ITC also helps peripheral micro-industries so that they survive and “...its intervention in the leather sector is focused on those materials that are the by-products of the meat industry...” (International Trade Center, IPC, 2016).

3.3.2 Standard Typology, Sustainability, and Governance

It is worth noting how workers and owners at the McTs comply with standards to contribute to the firms’ resilience. Experts suggest that no standards of any sort exist at the micro-level in Bangladeshi tanneries because of several economic and social reasons (Zaman et al., 2011). Although research shows the presence of certain standards that conform to the ILO labour conventions (including human rights and environmental concerns), the additional need for the “...codifiability of information on issues surrounding labour and work practices within the value chain...” (Nadvi, 2008, pp. 15,16) exists, which in turn might help the McTs to achieve sustainability. The same scholars also observed that “...such codified knowledge could lead to a lowering of transaction costs associated with governing the chain by lead firms...” (ibid.). In line with this, the governance framework put forward by Gereffi et al. (2005) also suggests that standards could help promote the codification of knowledge in ways that lower transaction costs within value chains.

Chapter Four: Methodology

This research project includes (1) the analysis of factors contributing to the resilience of selected McTs in Bangladesh (within the Hazaribagh area); (2) the investigation of knowledge management by the McTs in achieving resilience, and (3) the identification of core challenges facing McTs that act as barriers to resilience. Following this, this research has two core components: i) identifying and mapping factors of resilience and knowledge management; ii) suggesting practical means for policymakers to help McTs achieve resilience.

This is a qualitative study. However, this research has drawn numerous inferences from various secondary sources and quantitative data sets that were available in the public domain. Semi-structured one-on-one interviews followed by extensive participant observations went into the primary sources of data collection in this research. Data were analyzed from policy documents of governments, NGOs, national and international think tanks, and research organizations. Ethnography was the main approach for this research within the general scope of the qualitative research method (Creswell, 2007). It sought an understanding grounded in the experience and perspectives of the three types of actors (i.e. research participants – owners, floor workers, and technical persons) that work within the McTs. The fieldwork for the research was carried out in two steps. In step one, one-on-one interviews were conducted and rapport with the participants was established. In step two, participatory observation (i.e. unstructured and as a "pure" observer, in which case I did not participate in the action but was still present on the scene) was carried out to confirm findings from step one and to observe more closely different aspects of knowledge management and organizational behaviours.

4.1 Detailed Description of the Research Approach, Strategy, and Method

As aforementioned, a qualitative research strategy was used in this study since this type of strategy has the potential for gaining a more in-depth understanding of the nature of knowledge management, the interests and needs of the different analyzed actor groups (i.e. McT owners and relationships among the stakeholders). Knowledge construction and the mapping of various forms of knowledge management can be found in the qualitative research strategy, which fundamentally depends on the context and whether such understanding can be gained through the research participants' experiences and perceptions (McMillan & Wergin, 2006, p. 94). Moreover, some scholars have opined that since qualitative research produces data that is rich in its descriptions of people, places, conversations, and behaviour, it is helpful to gain a

greater understanding of research questions (Bogdan & Biklen, 2007; Creswell, 2007; Marshall & Rossman, 2011).

Ethnography is the central aspect of a qualitative inquiry and is derived from anthropology and qualitative sociology (Marshall & Rossman, 2011). Considering this, ethnography was chosen as a main research tool because as a researcher it is expected that one should be able to observe and/or interact with research participants in their real-life environment as they worked in McTs. Since understanding knowledge management in sustainable growth of McTs is the principal aim of this research, ethnography seemed to be the ideal method to use. As an ethnographer and a curious observer, interpreting the behaviours of various McT owners, workers, and technical persons in their natural work environment in order to gain a deeper understanding of their motivations for knowledge management was fruitful. In turn, it helped to understand McTs' resilience. Most importantly, ethnographic research of knowledge management is helpful:

“...for understanding the more personal elements of knowledge. It is contended that use of ethnography, which emphasizes observation within a compact cultural setting, offers a potentially ideal method of undertaking research in knowledge management because it concentrates on a community and in the provision of descriptions of how members of the community interact with each other. Utilization of ethnography as a research method sits comfortably with theories of knowledge, which acknowledge the tacit element of knowledge and its experiential embeddedness...” (Kane et al., 2006, p. 141).

In the ethnographic research approach, two things were very important: the ‘self’ and the ‘context’, which Herbert Blumer (1966) (as explained in Mead’s theory) explained as an understanding of the ‘self’ in relation to the ‘social context’ as permeated into our senses through sets of symbols and meanings and therefore the interplay of self and context plays an important role in anthropological research. Put differently, taking an ethnographic research approach forces a researcher to self-reflect and challenge their own perceptions and understanding while examining research questions (Robben & Sluka, 2007, p. 110).

4.2 Research Procedures

The details of the research procedures as described below include justification for the selection of the research participants, sampling procedure, data gathering and analysis process, validation and reliability issues, and a summary of fieldwork experiences of participatory observations conducted during research fieldwork. Nonetheless, categorizing tanneries as ‘micro’ was found to be a daunting task because the standard EU definition of micro

firms/entrepreneurs does not apply to these tanneries for several reasons (details can be found in Chapter Five). This is why it is suggested to have a method to develop a categorization that is only applicable to Bangladeshi tanneries and cannot be generalized to any other areas or places.

4.2.1 Sampling Procedure

In step one of the research, in approaching the potential participants (i.e. the tannery owners, workers and technicians), some of the key persons⁵ in the local areas were contacted first and they were requested to refer the researcher to other possible participants as a measure of adopting a ‘snowball’ strategy (Creswell, 2007, p. 125). It was realized that these persons are the gatekeepers in this sector and it would not be possible to access intended participants without first consulting with them. Consequently, such an approach helped the researcher initially to gain the trust of the intended participants. While it is realized that a snowball strategy may cause bias in the study, as participants are likely to recommend ‘like-minded’ people – reaching out to tannery owners, floor workers and technical persons would have been challenging without their help within this short period and given the political context within which the fieldwork was carried out. Thus, referrals and introductions remained a useful strategy in accessing individuals and groups during the fieldwork. As a second step, participant observations were carried out during the fieldwork according to the suggestions of the participants. In sum, data were gathered from four sources such as interviews (24 one-on-one interviews), unstructured participant observation, analysis of policy documents of government, non-government, and international sources, and national and international electronic and print media (newspapers). The details of the sample are listed in Tables 4.1 and 4.2.

4.2.2 Selection of Participants

In this research, purposive sampling was used thus deciding early on, who would be the research participants, since the intention was “...to study a certain cultural domain with knowledgeable experts within...” (Tongco, 2007, p. 147). In this regard, a mix of tannery owners, floor workers, and technical persons located in the Hazaribagh area were identified. The anticipated estimation was to have a representative sample of 40 percent owners, 30 percent floor workers, and 30 percent technical persons. The rationale for such a share of collection was founded upon three issues: 1) This research wanted to gather data from three

⁵Such as key persons in the tannery associations, manufacturing groups as well as political leaders.

major stakeholders of the firms. 2) Access to floor workers and technical persons was limited given the fact that the firms were in a transition mode. 3) Gaining an in-depth insight about firms operation was only possible if the owners participated in the research.

Table 4.1: Demography, gender distribution of research participants (n = 24).

Number of interviewed firms	23	
Number of interviews	24	
Gender distribution		
Male	21	87.5 %
Female	3	12.5 %
Actor groups		
Factory owners	10	41.7 %
Floor workers	8	33.3 %
Technicians	6	25 %

There is a plethora of McTs available in Hazaribagh. As such, during the initial screening phase four criteria were established for the participants to be able to qualify as research participants: 1) The person must have been living and working in the Hazaribagh area for at least two/three decades. 2) The person must have worked in at least three tanneries located within the Hazaribagh area and surrounding areas. 3) Some of the owners are running their family businesses. 4) The technical persons/floor operators received some sort of institutional or on-the-job training. Accordingly, the participants who met such criteria based on their involvement in selected McTs in Hazaribagh were carefully selected.

After making a short list of 40 McTs, communication was made with the owners within these McTs and the purpose of the study was explained to them. About selection of the floor workers and technical persons, initially, factory owners' suggestions were adhered to (i.e. their own employees). However, during the later stage, the number of participants was also randomly chosen (i.e. floor workers and technical persons) from different tanneries. Adhering to the suggestions of factory owners was necessary to gain trust in the initial stage of the fieldwork. Access to the participants depended upon 1) the availability of the interviewees within their own environment, and 2) the interviewees' voluntary participation in the study.

Interviews were pre-scheduled and were conducted over a period of twelve weeks with each person interviewed (once, twice or more) for roughly forty to eighty minutes. Participatory observations were made to witness different tannery related operations (both at the Hazaribagh

and at Hemayetpur areas) which were recommended by the research participants within the period of fieldwork. A letter of invitation was sent to the factory owners only while the verbal invitation was made to other participants. The participants were requested to contact the researcher directly by phone and if an owner did not respond the first time, a second try was undertaken. Finally, 24 participants were interviewed. Interview questions (Appendix 1) and Human ethics assurances (Appendix 2) are appended at the end of this thesis.

Table 4.2: Types of McTs participating in this research (n=24).

Workforce Size in Interviewed McTs	Num ber of McTs	Percent age (%)
Workforce (permanent ≤ 4 and temporary ≤ 10)	12	54.16
Workforce (permanent ≤ 8 and temporary ≤ 20)	11	45.83
Bond capacity⁶		
(Collateral making capacity of an McT with a lender)		
Yes	15	66.66
No	8	33.33

4.2.3 Data Analysis Procedures

In this research, data were analyzed from various sources. It is important for this research that the researcher was open to using multiple approaches and techniques in research so that a triangulation could be achieved. In this regard, a number of social science scholars have mentioned the benefit of such an approach (Bennett, 2004; Druckman, 2009; Maoz, 2002; Sprinz & Wolinsky-Nahmias, 2004). Although this research did not yield quantitative results, by using Computer-Assisted Qualitative Data Analysis Software (CAQDAS) named QSR nVivo 10, it was possible to compile data from numerous sources. There were some compelling

⁶ Bond capacity means the ability of a McT to keep/maintain a collateral to a financial organization (i.e. bank) against which it can import chemicals from abroad. Since chemical is the most important element in a McT operation, during the fieldwork it was observed that not all McTs had such a capacity. In another way, some of the McTs, which had bond capacity, also stored chemical and sold in the local market to other McTs which needed it. Therefore, they could maintain to some extent the essential 'cash flow' for their survival.

reasons for using CAQDAS as it helps to discern patterns through coding. Moreover, QSR nVivo 10 helps in the analysis of data from multiple sources through different stages of coding, and then by running queries within a reasonable time (Bazeley & Richards, 2000; Welsh, 2002).

While using QSR nVivo 10, first, an open coding was carried out to create initial thematic areas. Later, grouping of major thematic categories was done followed by axial coding to refine the themes (in this process, the research questions were kept in focus so that consistency was maintained in the complete coding process). During the entire data analysis process, record of ‘memos’ (to keep track of the thought process and to note memorable quotations from the participants) were made diligently. At the end of this process, identifiable thematic categories and sub-categories were generated, which eventually helped to design Chapters Five to Seven of this thesis. In these qualitative chapters, the verbatim quotations of the participants were used, weaving them together within the chapters.

4.2.4 Validation and Reliability

Scholars have posited that validation in qualitative research is a difficult issue that has multiple competing viewpoints from researchers’ points of view (Whittemore et al., 2001). However, in this research, reliance on the ‘personal interpretive approach’ was kept for validation purpose in order to make “a judgment of the trustworthiness or goodness of a piece of research” (Angen’s, 2000, cited in Creswell, 2007, p. 205). Nevertheless, it is believed that validation is an attempt to assess the “accuracy” and “authenticity” of the research findings while keeping in mind that any reporting is a representation of a researcher who has his/her own worldviews and understandings about the subject matter (Druckman, 2005, p. 331). This is a unique experience of a researcher although the nature of experience greatly varies from person to person.

As mentioned earlier, data were gathered and thereafter analyzed from various sources (interviews, participant observations, government and non-government documents, and newspapers) so that dependence on one particular source could be avoided. The research participants were chosen from different groups within the McTs, keeping in mind the male-female ratio (although female participation was poor). Throughout the fieldwork, in cases where it was felt that clarifications on matters like process of production, workers training, and human resource management, the participants were re-contacted to verify observations. Returning to the participants was a time-consuming matter, but it proved to be useful in maintaining authenticity in the reporting. It should be noted that if this research was conducted

a few years back, this could have been done at ease and flexibility. The current transition state created a series of obstacles to getting back to the participants to validate findings. However, the maximum effort was always made to verify the authenticity of findings.

In the data validation process four critical aspects were kept in mind: 1) credibility; 2) authenticity; 3) criticality; and 4) integrity (Whittemore et al., 2001, cited in Creswell, 2007, p. 206). However, this dissertation has cited the verbatim responses of the participants to compensate for such deficiencies and to overcome biases. During this study, field diaries were kept and two high-quality audio recorders (one as a backup) were used for the interviews.

4.3 Researcher's Position and Role

The research base was located in Dhaka in order to be able to closely observe various events related to the selected McTs for a sustained period. However, remaining very close with some of the interviewees put me in a difficult situation in maintaining a neutral researcher-participant relationship. Nevertheless, while recruiting participants it was considered that the participants were authentic actors in the McT environment at Hazaribagh/Hemayetpur and at the same time had enough experience in the business to be able to comment on their experiences (Pouligny, 2002, p. 204). This aspect of the research was particularly challenging since an ethnographic methodological approach was applied that calls for maintaining a balance between the 'etic' and 'emic' approaches (Riemer, 2008). However, not one exclusive (either etic or emic) approach helped in finding answers to the research questions. Rather, a combined etic-emic method offered a middle ground for me in this research. Another crucial aspect of using the ethnographic approach is also to balance between the challenge of the 'outsider-insider' dilemma as observed by Styles (1979).

4.4 Ethical Aspects of the Study

Before the research fieldwork was commenced, the research participants were told about the informed consent aspect of the research. They were given the option to remain anonymous or to share their identity in the research dissemination part. The participants were also told about their right to discontinue their participation in the research or withdraw at any given time during the fieldwork. Nevertheless, the participants did not withdraw from the research at any stage. There was no physical, psychological, and/or emotional risk attributed to the research participants during the research process and the participants seemed at ease during the interview and participant observation phase. The research was conducted at a critical time in

Bangladesh, because of the ongoing politico-economic turmoil pertaining to the transition of tanneries from Hazaribagh to Hemayetpur. At some point, however, law enforcement agencies' presence in the fieldwork area created confusion and made accessing the participants difficult. It was anticipated that none of the participants would be especially vulnerable or would require extra precautions during the research process. However, one risk was imminent, that some tannery owners might be identified as having strong views regarding the government's enforcement of relocation at this period. Yet, no such things were observed during the fieldwork. All the interviewees remain anonymous in this research. All information was kept strictly confidential. Documents related to the interviews are stored on a password-protected personal computer. Tapes and handwritten notes are stored in a locked filing cabinet at the researcher's home. All the interviews were transcribed and in the process all personal identifiers were removed.

Data containing personal identifiers were destroyed immediately after the research ended. All data (recordings, transcripts, printouts, completed interview schedules, notes, etc.) would also be destroyed within one year after the completion of this research. Some photographs during my data collection phase were taken with the explicit permission of the participants and local inhabitants. The audio recordings would be destroyed after the completion of the research. Some of the respondents wanted to have a chance to review their contributions: The transcripts of their interviews were emailed/ mailed to them so they could clarify, verify, and, if necessary, alter their responses. No deception was used in this research and there were no benefits, financial or otherwise, provided to the participants.

Chapter Five: Towards Understanding Resilience of McTs and its Contributing Factors

‘Resilience’ is undoubtedly a loaded term and from a semantic standpoint, it specifically refers to the ability of an organization to return to its original or transformed condition (i.e. adaptive capacities) after experiencing turmoil. Three things are essential for understanding resilience: the previously held ‘normal condition’, the process of handling ‘turmoil’, and, most importantly, the ‘ability’ to absorb shock (natural or manmade). In this context, one can easily surmise whether this definition should be applicable to micro-organizations such as the McTs in Hazaribagh. There are practical reasons behind such assumptions and one stands out – these micro-industries are always subjected to internal and external pressures causing turmoil since their first day of operation and weathering turmoil may seem to be the norm rather than the exception for them. In Bangladesh, their vulnerability is further compounded due to a lack of strong infrastructure and the lack of a support system (i.e. financially). Nevertheless, as seen in this research, these industries have not only survived but still operate despite monumental odds. In reality, for many of them, surviving this troubled social-political-economic time is their ‘transformed condition’ and they creatively undertake (i.e. ability) a host of activities just to survive. In this regard, it is their stories of survival, which is termed ‘resilience’ in this research.

In this chapter, first, discussion about the approach to resilience, followed by the illustration of the Socio Ecological Model (SES) will be made. Subsequently, the limit of resilience is discussed to point out that an ultimate threshold does exist for McTs in terms of their survival. The text then moves on to discussing internal factors and external factors of resilience. It also touches upon the role of social capital in McTs’ resilience, as it appeared to be one of the most important aspects for the McTs survival.

5.1 Approaches to Understanding McTs’ Resilience

In this chapter, findings are based on the assertion that McTs’ resilience is experienced in two primary ways: the ability of McTs to withstand environmental (socio-economic) shock and the capacity to evolve through adaptation and continue their business operations. The following narrative is the testimony of an owner, which sheds light on the complex dynamics of resilience.

Respondent 1 founded Tannery 'A' in 1987. He did not have much of an idea on how to run a tannery other than having worked in a small tannery in 1977 as a production manager. He explained how he did come to work and what the situation at that time was:

"I started my own Tannery business in 1987 after 10 years of experience as a production manager. I had the blessing of my elders and my complete faith in Allah that I would be successful if I adhered to the religious norms and values. The leather business was not so competitive that time. We used to work in Hazaribagh as a single family." (Respondent 1, owner of tannery 'A')

He thought it was a good idea to have own a tannery himself since the business was booming. At that time, tanneries used to export wet blue leather directly to foreign buyers. He had a good reputation among the locals since he grew up in that area. He took loans from a government bank and used his own space for the construction of the tannery. He mostly purchased local instruments such as Bangla drums, etc. He started his tannery with four permanent employees, including him. He used to collect skins himself, he had one person for running drums and also employed some seasonal employees. One person took care of chemicals, and another person looked after the production. It was a simple organization and he used to spend 12 to 14 hours a day in the business directly overseeing the operations. Once his tannery went into operation in late 1987, there was a rumour that the government was planning to impose extra taxes on wet blue leather to stop its export directly. It was also rumoured that big leather companies were going to open up businesses in Dhaka soon and they needed a lot of wet blue leather. Small tannery owners like him became naturally anxious because if wet blue leather could not be exported directly, keeping the current profit level, then it would be difficult to pay back the bank loan and support his family of six. He mentioned the following:

"I only just started my business in 1987 because I had confidence in my experience but was soon hit with this new reality of job loss. My children were still young, and I borrowed money from a local lender with high interest. My future seemed to be bleak if I lost my job. The owner told us that new companies were opening their businesses yet they won't take us and if they were hit with new regulations then they could not make profit and provide subsistence for us." (Respondent 1, owner of tannery 'A')

His children were still young and their futures would have been bleak if revenue had fallen due to government tax rules. One morning in early 1988, the news broke about the additional taxes on wet blue leather exports with the justification that processed leather goods earn more revenue for the country and, as such, tannery owners were expected to support the initiative.

This came as a shock to many small tannery owners like him and it hit them hard financially. He discussed this issue with a few other like-minded businesspersons in the area including an elder who had worked in the industry since the 1960s. Since it was a matter of survival they needed to think quickly and come up with a plan to adjust under the new climate. What could be done and how was it to be done?

The above-mentioned narrative is a true story of one of the micro-tannery owners. He went on to describe the turbulent times of the late 1980s and early 1990s when the ban on wet blue leather came into effect. Simultaneously, the political situation of Bangladesh was also rapidly changing, transitioning from an autocracy to a democracy. On many occasions, such disruptions can pose a major threat to the normal business function of an organisation. Disruptions emanating from government policies that do not take into consideration the local realities of small business owners can have direct impacts on an organisation's ability to get finished goods into a market and can impact the lives of many people who are directly involved in the business. However, an interesting thing to observe is the fact that some McTs can overcome these events while others cannot. What enables some of these McTs to adapt and transcend these events? And what sets these McTs apart? In business terms, it is only expected that the McT might have had a Plan B (in professional parlance this is known as a Business Continuity Plan – BCP), but for him, he only came up with a plan after he learnt the news and realized its consequences a couple of days later while discussing it with other tannery owners. Nevertheless, he came up with a plan in 1988 to offset the mild turmoil and, with his foresight, he also envisioned a total ban on wet blue leather in the future and took adequate measures so that he would not go out of business. Two things crossed his mind as he came up with a Plan B: His family was dependent upon him for its survival and he had four permanent and 15 temporary workers to keep employed so that they also could survive. In hindsight, he thought his procedures and plans were intuitively applied during the fast-moving crisis and thus his plans were effective.

This brief prelude points to three approaches of understanding McTs resilience: 1) organizational perspective (i.e. factory and its capacity to adapt and evolve) including limit of resilience; 2) routine and institutions that guide/govern individuals (i.e. the actors in McTs) within the McTs; and 3) the socio-political-economic conditions (i.e. the contextual). In such cases, one should realize that McTs should be considered as living organisms as they adapt and survive. The people that work in the McTs are bound together tightly and consider their survival as synonymous to the businesses' survival. In this research, the SES model was used as the

principal analytical tool. Thus, this chapter commences with the model and will eventually reach to the description through these lenses of the model.

5.1.1 Socio-ecological Model and McTs' Resilience

Let us try to analyze McTs' resilience within the greater SES system. According to Halliday & Glaser (2011), who, referring to Checkland (1984), suggested a system that consists of four components: management and control (C), technology (T), natural system (including human-N), and worldview (W). This is illustrated in Figure 5.1.

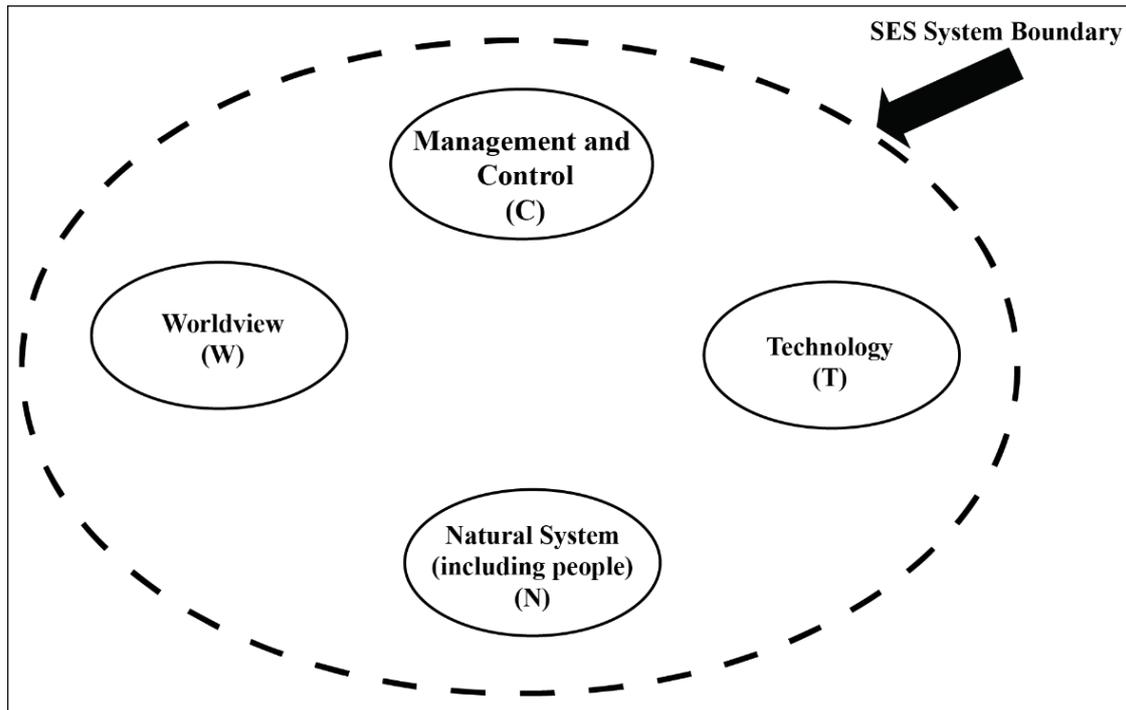


Figure 5.1: A generic model of a social-ecological system.

(Source: Halliday & Glaser, 2011, p. 6.)

In McT environment, it was observed that these had a smaller 'C' component and often the hierarchy of aMcT was flat (meaning the owner had a small management team) to control the workers as well as the technicians. In terms of the use of technology (T), again, very minimum information technology is used to manage the business. However, some changes were observed in terms of equipment and chemical usage. Within the natural system (N), principally three groups of actors were found (i.e. owner, management team that includes technicians and workers). Finally, the actors within the McTs held their worldviews about business transaction, production, support system, and, last but not least, their conviction to work ethically and responsibly. The details of the factors contributing to resilience are discussed later in the chapter.

5.1.2 Limits of Resilience

One important research question that was explored in this study was, why some McT did not survive while some thrived? In finding an answer to this question, it was revealed that McTs actually had a limit to become adaptive and one of the reasons for some McT closing down its business was related to reaching its limit of resilience. In this subsection, an attempt is made to explain McTs' limits of resilience by using the V²E²C² model (Mallak, 1999, p. 223). The model is shown in Table 5.1.

Table 5.1: The V²E²C² model of organizational resilience.

	Vision	Values	Elasticity	Empowerment	Coping	Connections
Individual	What it means in my job Basis for decision making Personal vision	Values individual brings to the workplace Congruence with organizational values	Ability to “bend without breaking” Tolerance of uncertainty Ability to handle exceptions as a regular part of the job Ability to change strategy	Competence Self-determination Self-efficiency, Discretion	Coping strategies; confrontation, escape, diversion, support	Understands impact of decision and actions in the organization
Organizational	Formulation, Communication, Parsimony	Core organizational values support resilience	Freedom from restrictive policies and procedures Ability to “bend without breaking”	Decision-making boundaries Parity Resource	Training Sharing examples of positive and desired coping strategies Reinforcement	Build effective teams Interpersonal behaviours Sets up regular networking opportunities
Engineering Measurement	Clarity, Distortion	Critical values	Coefficient of elasticity	Ration of individual's power to management power	Valence (positive or negative)	Resistance Loss of power with poor connections

(Source: Mallak, 1999, p. 223; modified).

This might be useful to understand the dynamic interplay of several internal and external factors that influence McTs to achieve resilience, while at the same time resilience might be compared with the elasticity feature of an element. Certain elements have their limits for expansion, beyond which they lose their functionality. Likewise, McTs' operations also diminish if they happen to cross their resilience threshold (RT). This condition can be related to the laws of physics, where we know that every object is made up of atoms and molecules. If atoms are broken into their sub-atomic particles, the homogeneity of an element gets lost (in other words, the element becomes something else other than the original). This is possibly the reason why so many McTs that started in the 1990s are no longer in business. Rationalization for such an approach is based on two grounds: 1) by exploring the components of the model to arrive at a generalizable conclusion that, if McTs are mindful of certain components, they will become resilient; and 2) to test the model based on available data gathered in this research.

First, although McT owners do not formulate a written vision statement for their businesses, the study shows that successful McTs had a certain unwritten vision statement crafted by the owner. For example, some owners said that they believe in the power of Allah to connect them with buyers, manage capital, and that the business meant everything for them in their life. They translate this vision orally to their employees on certain occasions. The second-generation owners that have formal education tend to have a written statement posted in their offices that talks about the future and their business goals. It was seen that when having no pronounced vision statement, this lack was usually felt by the employees and once it was noticed, the trust in the leadership diminished. This adversely affected the survival of the McT during down times and business turmoil.

Second, value plays a crucial role in managing resilience. The observed core values were sincerity, truthfulness, honesty, and comradeship. The owners tried their best to remain transparent with the employees in terms of business deals and sharing adequate information about margins of profit. Sharing such information helps the employees to self-regulate their affairs and stay with the same employer for a long time. The owners and middle managers maintain their sincerity and comradeship with the seasonal workers, and maintain good relationships and, as such, they never run short of labourers. This, in turn, helps them to complete their product deliveries on time. It also helps to reduce wastage and since the business is sensitive in terms of quality management (a piece of leather costs more than 100 pieces of RMG items), it is absolutely necessary to blend all the values together to remain in business. However, if honesty and sincerity are found to be lacking, resilience naturally diminishes.

The McTs cope with the changing global-local environment on a regular basis. The successful McTs used confrontation tactics to face the problem (for example, a lack of demand, procurement shortages), diversion tactics to manage resources (for example, searching for alternate sources of raw materials, managing capital through cooperation), and support tactics (supporting employees during down time with money and food) to remain in business. Nevertheless, in some cases, depending on the constraints (such as finances, and unwillingness to compete) some McTs used escape tactics and therefore their resilience was affected. Those who were able to weather difficult times using the aforementioned tactics usually achieved resilience.

Third, connection is an important aspect that determines McTs' resilience for two reasons. First, it helps to assess the impact of decisions and actions due to the impending changes and, second, it helps to build effective teams among different stakeholders. McTs take part in networking through associations and cooperatives and successful McTs were found to gain leverage from such a networking environment by receiving early warnings about policy changes as well as finding out any ill-reputed buyers or third-party buyers. Nevertheless, resistance to networking seems to be one of the reasons why some McTs lose their resilience. Fourth, it might be worthwhile to explore in the future how the 'resilience threshold' is perceived and experienced by the McT owners. What are the signs that show that a McT has reached the threshold? How can the impacts of certain factors that tend to lead a McT to reach such a threshold be mitigated? And what factors might enable a McT to extend the threshold so that it remains resilient?

Inferring from the $V^2E^2C^2$ model (Table 5.1) and from interview data, the schematic diagram (Figure 5.2) was conceived to explain the limit of resilience. Figure 5.2 has three components that illustrate the resilience of the McTs under study. First, McTs are impacted by internal factors such as job demand (necessitating adoption of the 'job work' model), the dynamics of family business, values, faith, the association of owners as well as employees, workers' education and level of knowledge, and organizational routine. Simultaneously, McTs are also impacted by external factors such as supply-and-demand-chain-related changes (both globally and locally), technological changes, and capital management. McTs are depicted through concentric circles, elucidating the fact that they are dynamic. Second, McTs are perceived to be positioned on a horizontal plane that is comparable with the concept of the Dynamic Capability Management Spectrum (DCMS), meaning McTs are able to manage global-local changes by adopting a change management approach in their businesses. Nonetheless, as would be seen (in the subsequent part of this chapter), McTs have internal factors which interact with

external factors and over the time through such interaction, a learning process is developed and with this process McTs built their capacity in different areas such as capital, human resource, and procurement management. If this kind of learning system prevails and nurtured, then, an adaptive system is created, which according to the dynamic capability approach, helped some of the McTs to sustain in the midst of global-local changes. However, if some McTs could not learn and adapt well with such change, it mostly depended on the past practices of management and production thereby lost its competitiveness and eventually left business. Third, the DCMS has both, positive and negative directions, if we can imagine an existence of Resilience Threshold (RT). These RTs are conceptual markers, envisaged in a way that beyond which the McTs could not maintain their generic (i.e. micro-status) existence. From interview data, available literature, discussion with local money lenders, and NGO workers, some factors were considered to be contributing to the RT. These are: demand of raw leather, supply of capital, standard compliance, and labour management. For example, if one McT keeps on achieving dynamic capabilities over a period and crosses the +RT, then it does not remain a McT – it changes into a macro-tannery. Likewise, if the other McTs fail to achieve their dynamic capability and cross the –RT, then they lose their business and end up closing their business. Thus, understanding RT in resilience management is of immense importance because it not only reveals a stage of achieved capability of a McT, it also signals when fundamental changes in a McT are going to take place.

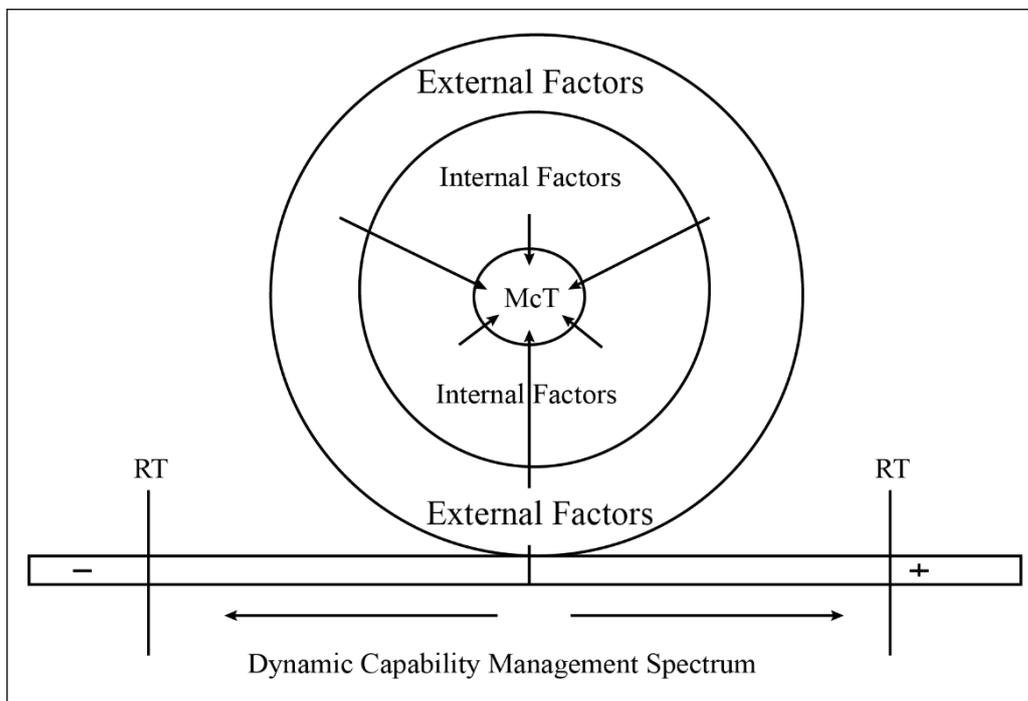


Figure 5.2: McT resilience model.

(Source: Author)

5.2 Socio-ecological Model and Contributing Factors for McTs' Resilience

One of the intriguing parts of this research is to find out how McTs achieved and sustained competitive advantages in the midst of changes that originate from within and beyond. Importantly, it was attempted to investigate four key aspects: "...innovation-based competition, price/performance rivalry, increasing returns, and the 'creative destruction' of existing competences..." (Teece et al., 1997, p. 509). Taking a cue from there, an approach was taken that takes into account the capacity for "...building competitive advantage through capturing entrepreneurial rents stemming from fundamental firm-level efficiency advantages..." is most useful in understanding the "dynamic capabilities" of McTs (ibid., p. 510). Here dynamic capabilities denote McTs strength to cope up with changes by re-orienting its business strategies.

After exploring McTs as organizations and people's role in achieving resilience, the research dove into identifying the factors responsible for resilience. This entailed a long period of astute observations because of the ongoing transitional circumstances of McTs in Hazaribagh and often the unwillingness of the participants to talk to the researcher. Nevertheless, while interviewing some of the middle managers and business owners, it dawned that there were a host of factors that might contribute to resilience. In subsequent paragraphs, it is elaborated in two categories: internal (which are basically controlled by the organization and its people) and external (which impact the organization from outside and McTs have to adapt to these factors). However, it might be prudent to put the external and internal factors contributing towards resilience in the SES system first and to find out how actually it works out in case of a McT. The model is illustrated in Figure 5.3.

In the case of a McT, the internal factors as a sub-system (A) within a larger SES system that is composed of values and beliefs (grounded in Islam) and workers education a worldview component was plotted. Next, the organizational routine through which control of operation is asserted in production and distribution is mentioned as control. Technical knowledge and drive for adapting to change accordingly is put in technology component and lastly the environment component was composed of three groups of actors (owners, workers and technicians) – it also includes the natural-social-political environment within which the McT operated. In the external sub-system (B), buyers' demand is mentioned as worldview since environmental awareness has seen a gradual increase in the Western markets that eventually impacted the operations of McTs. Labour standard including a pressure to maintain a reasonable standard of workers safety resulted in oversight of operations by third parties as it is put in control component. Rapid demand of technology resulted into adoption of cellular phones in business

transaction, which is shown in technology component, and, finally, environmental standard is pushed by government and non-government agencies that impacted McTs operation. Thus, it is shown in natural environment. The most intriguing part of this model are the continuous and dynamic interactions of these two sub-systems (A and B) that resulted into a work model (i.e. ‘job work’ – details are discussed later). After having viewed the SES model, now, let us examine several factors empirically. Here, the factors are divided into two categories: internal and external, and these are illustrated in the paragraphs below.

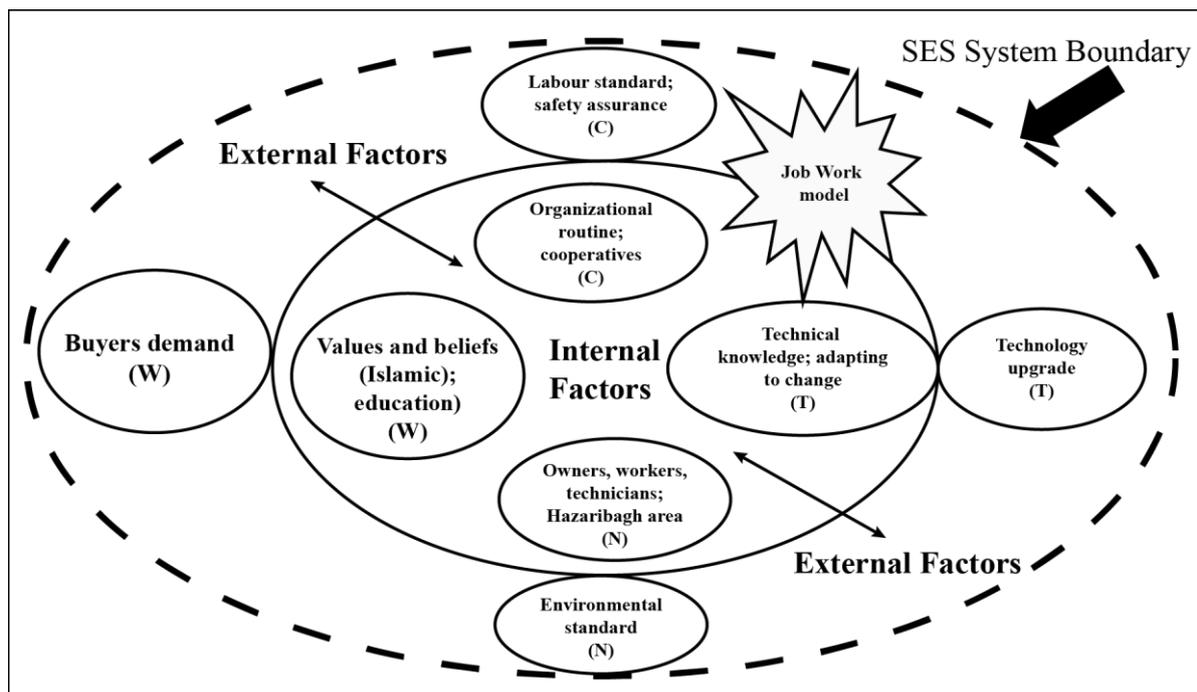


Figure 5.3: Interplay of internal and external factors within the SES environment.

(Source: Author)

5.2.1 Internal Factors

The research participants mentioned a long list of items they thought of as important factors causing them to achieve organizational resilience. Simply put, these are elements the participants informed that were originated from the past and present business practices, traditions, human resource management practices, lending practices, and supply chain management practices. One way to understand how these factors impact resilience is to explain why certain elements (identified here as factors) came into existence, why the organization and its people thought to create/develop certain practices, and why they abandoned certain systems or continued using others.

5.2.1.1 People are the Keys

The people who own the firms as well as those who run these firms are the two major constituents who contribute to McTs' resilience. There are three types of 'people' usually found in the McTs: the owner, middle managers, and labourers (both permanent and seasonal). The owners of the firms and their representative/s set the tone for the operation and handle all the major aspects such as capital management, marketing, and the hiring of employees. Although the middle managers constitute the core group in the McTs' operations, they have little or no influence in the decision-making cycle of the firm. The labourers are hired on a needs basis (for example, if a large contract is secured, more labourers will be hired and *vice versa*).

The personality of the owners is the most significant element that contributes to achieving the resilience of McTs. It was observed that successful McT owners have some distinct characteristics as described below:

Sincere and takes the business seriously, meaning they are not the *laissez-faire* type. In many cases, it has been observed that some owners conduct their businesses seasonally (once a year). So, the successful ones possess ambition.

- i. Since it is a hereditary business, some owners were found to take education very seriously and strived to obtain extra education in different ways if they could afford it. Some of them were found to have only a higher secondary education, yet managed quite effective and profitable business enterprises.
- ii. Successful owners were found to be politically conscious, meaning they were aware of the political changes happening around them. On two occasions, it was observed that they allowed political discussions to take place in their workplaces if they did not hamper their business.
- iii. The ability to maintain social networks seems to be one of the most important skills of the McT owners. As discussed in the context chapter, numerous tannery-related associations are available in the Hazaribagh area and most of the owners are part of at least one of the networks. They believe that through joining such associations, they are able to share their ideas more effectively with like-minded people, but also they believe it helps them to maintain their social status. Their leadership skills seem to be another important fact that might contribute to their resilience. By virtue of their hereditary ownership, the owners are the institutional leaders in their firms, yet three kinds of leadership models were observed amongst them. The 'Autocratic Ones', who maintain complete control over business operations with little or no input from the rest of the team. In this particular

leadership model, we found the labourers to be unmotivated and unenthusiastic about working overtime. In some cases, although the middle managers were found to be engaged in some of the decision-making processes, due to the tendency of the micro-management attitude inherent in this model, the necessary flexibility to adapt to changing situations is not common. The '*Laissez-Faire Ones*', which entails applying a 'do it yourself' (DIY) approach, where middle managers and labourers are essentially left to their own workplaces to do their work and make decisions in whatever way they see fit. Interestingly, it was observed that in five successful McTs the owners, managers and employees were found to be highly capable in their roles and were conditioned in such a way that they were able to work with little oversight. Obviously, some of the older firms, which were founded in the 1970s, fall into this category. Again, a hybrid of the Autocratic – *Laissez-Faire* model (i.e. the Middle Ground) was also observed, where middle managers and labourers were found to be engaged in the decision-making process. Nevertheless, the owners still retained a certain degree of control over major business decisions such as security contracts and investments. Some of the new firms fell into this category and it was observed that in such cases the middle manager group seemed to be the highly motivated employees who contribute to the way the business is not only run but also remains resilient while facing difficult odds.

- iv. The business owners' personal reputation is the other significant matter that is related to achieving resilience. This works in several different ways: First, reputation comes from the family tradition and goodwill. If the family has been in business for a long time it has already generated goodwill and trust in the business sector. The buyers who often lend a large sum of money check the reputation of the family first (something like a background check). Older firms enjoy such a reputation by virtue of their existence in the market. However, certain newer firms were found seeking assistance from older firms in this regard so that they could also earn a similar reputation. Subsequently, the owners utilize their reputation in securing money for the business and labourers to manage the job. Importantly, their reputation also depends on how the owner or family treats its labourers in terms of disbursing their wages, how much money the owner owes to others, if they have treated their employees fairly and equitably in the past, and if they have helped employees in good and bad times. Second, the credit history of the owner is a factor that impacts the resilience of McTs. They do business with different stakeholders by borrowing money and how well the owner manages their credit impacts their reputation in the market. It was observed during the fieldwork that the total dynamics of reputation is a matter of perception generated orally by hundreds of people who either have worked with the owner or know his family. Such a perception is so strong that buyers as well suppliers of skins/hides do not feel that they would be duped as

they also believed in the McT owner's reputation. In Bengali they say '*bisashkoren, taka mairjabena*' (transliterated as, "trust me you won't lose your money"). Another respondent explained the phenomenon of trust in the following way:

"My buyers rely on me to adhere to my commitment. One such Chinese buyer has become my family member, I call him 'Borobhai' ["elder brother" in Bengali]. He always clears my payment on the first day of the agreement. Even I can lend money from him when needed." (Respondent 2, owner of tannery 'B')

- v. Experience in working in the leather sector is important as it dictates who will be hired by the owners as middle managers. Most of the people involved in this business have been doing this type of work for a long time. Since they are in this trade, consequently, they are very confident about their trade. It has been observed that people did not have any alternate job skills or motivation than working within the same tannery.
- vi. Most of them learned their trade by being self-motivated and they are proud of this achievement. Some joined at a young age, then kept on learning while on the job, and thereafter became able to work alone. Nevertheless, often, it was described how people had a brother figure who helped them learn the ins and outs of the trade. Importantly, people who are self-taught conduct the chemical mixing aspects of the tannery.
- vii. All the respondents said that they came to work through personal relationships. For example, one used to work in a tannery, so he in turn brought one of his family members to work. This familial connection ran through all tiers of the McTs (from the owners to the workers). This familial connection also serves as motivation to work in tanneries for a longer duration because people support each other to continue working in the trade.
- viii. Among the workers group it was found that most of them work in different tanneries throughout the year. Since it is a labour-intensive sector, workers can find jobs in almost any tannery they wish to work. This keeps the business going, although the negative impact of this situation is low wages and a lack of negotiating capacity by the workers. However, such flexibility keeps them employed throughout the year in tanneries.

This study validates four important traits for resilience: flexibility, motivation, perseverance and optimism (Keong & Mei, 2010). From the general characteristics mentioned above, it can be seen that the core characteristics of the organizations as well as people are flexible. The organizations are flexible in terms of their business operations, contract management, and

marketing while the people are flexible in their work patterns, motivation, and perseverance.

5.2.1.2 Necessity drives Innovation – an adaptive Business Model

Respondent 3 is an employee at Tannery “C” who has been working in the same factory for 30 years. He has interesting insights when asked to compare the past and present contexts of business practices:

“In the 80s, we used to see a different situation at Hazaribagh. At that time, we had small *Bangla drums* where we used to put raw skin/hide for treatment. We used to need a lot of people to do it as the capacities of the *Bangla drum* was not very much. In the 90s, gradually the owners started to replace these drums with China drum. These were of bigger capacities yet they need a fewer people to put the skins inside the drum. So on the one hand, the technology of treating skins and hides changed while on the other labourers lost jobs. Moreover, when the cell phone came in, it changed the way we used to communicate with people like the *Jachondar*, the chemists, and the labour manager. The owners in the 80s used to take limited jobs and we only had some big leather companies which used to make shoes and belts but now things have changed and we see lots of big leather companies. Earlier, only a few people used to come into the business but now a lot of outsiders come in who have little to no knowledge in running a tannery”. (Respondent 3, floor worker, Tannery ‘C’)

The above statement illustrates how technological changes impact tannery operations. Nonetheless, the McTs business model evolved over time and historically this evolution took shape over two distinct periods: pre-1990 and post-1990. During the pre-1990 era, equipment for treating and preserving skins/hides was rudimentary. For example, the treatment used to take place in a ‘house’ (e.g. a container made of cement and brick within a tannery). In an absolutely menial job, the labourers would mix salt by hand and put the skin/hide in the ‘houses’. In the later period of the 1980s, ‘drums’ were locally manufactured and gradually the ‘houses’ disappeared from the business practice. The relative ease of the drums, which can rotate and facilitate the mixing of salt with skins quickly gained popularity. The labourers were re-trained on the ‘Bangla drums’ accordingly and from then until now (some tanneries still use Bangla drums) it was observed to be in use. The labour requirement for operating a ‘Bangla drum’ varies from five to ten people depending on the quantity of skins/hides being treated. In general, this is a labour-intensive practice and a relatively large number of labourers is

employed to carry it out during the contract season.

In 1990, when the government policy banning the export of wet blue leather took effect, some tanneries gradually had to shut down their businesses. The names listed in the footnote are some of the medium- to large-sized tanneries, which had the requisite floor space and machinery. They also had investment from commercial banks. As they went out of business, due to bankruptcy and other associated reasons, their machineries as well as their assets were not sold, though in many cases banks took over the possessions. For the financial agencies, it was difficult to recover the full investment, as the value of the asset was not worth covering the interest and investment amount. Financial agencies as well as the owners realized this point very well and a business model popularly known as the 'job work' model came into practice. Additionally, since the mid-90s, new equipment has been introduced in the tannery sectors such as 'Chinese drums', and cutting, sewing, and measuring machines. These new types of equipment require labourers and new knowledge to operate. However, due to the introduction of 'Chinese drums', which can process a large volume of skins/hides at one time, the demand for labour fell, since a relatively small number of labourers can operate the drum and produce more processed skins/hides with relative ease. As a result, the demand for labour sharply dropped due to the introduction and subsequent use of Chinese drums.

The 'job work' model can be understood as McT owners try to outsource, whereby they seek to subcontract their production in various facilities. There are several essential components of the 'job work' model and these are discussed subsequently. First, close cooperation must exist among three types of stakeholders – the first type of owners (seeking to do 'job work'), financial agency persons, and second type of owners (seeking to rent out machinery and space). Among these types of stakeholders, a symbiotic relationship subsists based on mutual interest and benefit. This mutual interest involves a willingness on the parts of owners seeking to do 'job work' to deliver their products according to a secured contract. The financial agency which lent the money must feel that part of the investment is recovered in this process. The owners who lend the machinery and space must ensure that the debt is partly paid off while the assets remain in their possession. In terms of benefit, all the stakeholders see a 'win-win' situation. Therefore, the 'Job Work' model has become the most popular business model for the McT owners. Within the overall 'job work' situation, two things are crucial to ensure that all the stakeholders have a 'win-win' situation: access to information where the 'job work' can be done (i.e. willing owners to lend the space and machinery) and the demand for hides/skins (i.e.

the contract or demand by the buyer). In some instances, it was observed that information flow between and among these three types of stakeholders seems to have gained almost a permanency, meaning guaranteed, although financial agents come and go. It is a tacit agreement between the willing stakeholder and the lending stakeholder that is properly mediated by a financial agent (who is involved in lending).

A mutual trust must prevail among all the stakeholders from the securing of 'job work' until the end. It might be worthwhile to mention here that no written contracts existed among all the stakeholders in this process, pointing to the inevitable fact that 'trust' has been the most important aspect for the success of this model over the last two decades. It is worthwhile to see how this trusting environment was created. The participants shared their experiences regarding the building up of trust as a natural process that either has been present since the beginning and which they simply built upon, or trust is acquired through extensive dialogue with the stakeholders. Nevertheless, the reputation of the owners seeking to do 'job work' seems to be crucial here for the other stakeholders. On some occasions, it was observed that the 'job work' seeker books the machinery and space with token money and remains promise-bound to pay this off once he receives the full payout from a buyer.

Timing is another crucial element in this whole scheme, as the seeker of 'job work' must ensure that arrangement to do 'job work' is foolproof because he must ensure the delivery of skin/hide in a given period to a buyer. The seeker also has to ensure that the logistics needed to do 'job work' are all in place, in which the important element is 'labourers'. This is why some of the McT owners were found to employ a permanent labour manager whose job it is to locate and secure the requisite labour force once the 'deal' is a 'go'. In this connection, the participants informed that the demand for skins/hides from external buyers had changed over time. Traditionally, it was Italy, Germany, and the US wherefrom the maximum demands used to be generated. However, over the last decade, China has come onto the scene and Chinese buyers now dominate the buying sector.

'Job work' depends on the buyer's demands – importantly, the external buyers. As predicted, the global leather market scenario is changing, which is also having impacts on 'job work'. For example, tentatively, a decade ago, the seekers of 'job work' were not concerned with the working conditions of the place where the 'job work' would be done. Nevertheless, nowadays, the requirements and standards are changing as the buyers to verify the place, working condition, pollution possibilities, etc. as they put up orders. Additionally, buyers from developed countries are also mulling over establishing their own factories to do the same jobs, which is impacting the demand for 'job work' at home.

‘Job work’ is not a single part of an operation, meaning that the concept is not a single package that is carried out in one factory. Rather, some of the participants mentioned that they do different steps in different factories. Three things dictate such operations: the availability of machinery, agreements between the ‘giver’ and ‘seeker’, and the coordination capabilities of the ‘job work’ seeker. Looking from the outside, this seems to be a complex business operation, yet on the ground, it was found that the McT owners manage it flawlessly. The ‘job work’ model is schematically presented in Figure 5.4.

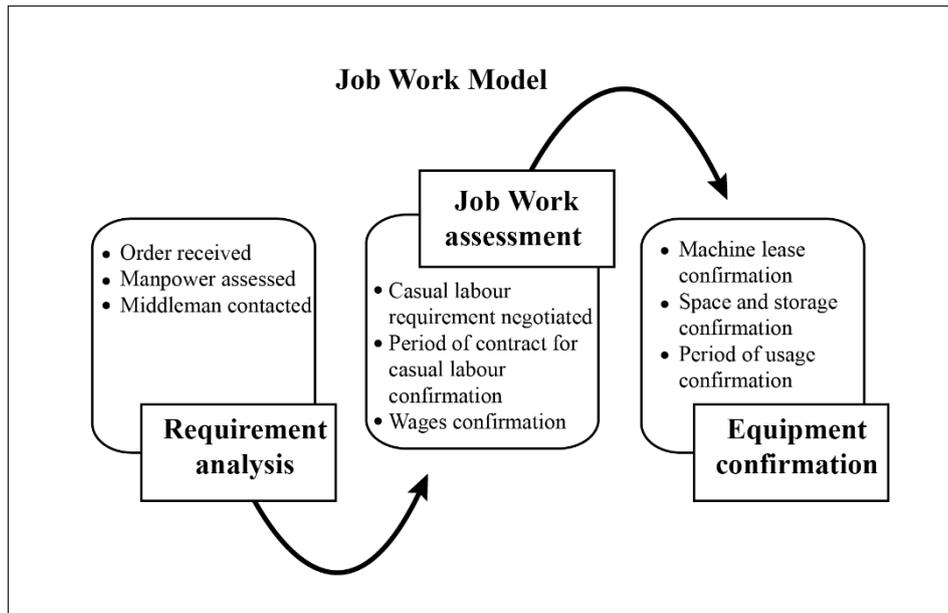


Figure 5.4: ‘Job work’ model.

(Source: Author)

It was also revealed that one does have to be a McT owner in order to do ‘job work’. This might sound odd in the context of the tannery business, yet there are external parties and people who secure a contract from a buyer and come to Hazaribagh to get the job done. There is no hard and fast rule in this regard, but it appeared that the McT owners are not very happy with such actions from an outsider. The most constraining factor in this regard is the inability to secure a contract by the McTs directly as they lack the marketing skills and resources needed to circulate their capacities to deliver products.

Dynamics of family business are worth exploring to find out the causes of success or failure in McT operations. For example, one thing that has not changed in the McTs’ business environment is the nature of ‘family businesses’. As has been shown, since their inception, the factories are practically owned by families who live and work in Hazaribagh or surrounding areas. During this study, third-generation factory owners were found to be involved in the

business, though they were rare. A stock of successful and unsuccessful businesses was taken within the family-run environment. On the pro side to managing operations and ownership of a successful McT, a couple of things were discernible. For example, a sense of belonging and familial relationships with labourers and managers develops over a sustained period of time that positively contributes to McTs' success. Due to the family ownership, trusting relationships develop between and among stakeholders and they tend to stick together during crises. The process of 'teambuilding' is clear when the business is managed from within. Also, given the social condition that prevails in Bangladesh whereby people tend to treat the tannery business and related jobs as indicative of a 'poor social status', few new entrepreneurs enter this business. Since the late 1990s, this situation has gradually changed and the sector has seen new entrepreneurs, yet given the growth potential of this sector, the number of new owners is minuscule. It is relatively easy to manage credit and procure raw materials and chemicals on credit based on family reputation, as the lenders trust that they will get back their money. The other factor is if the business is owned by a family the knowledge and experience transfer is easy and it produces good results to navigate through troubled times. The strength of family business also comes from the fact that a number of McTs in Hazaribagh are located on inherited family land and their inheritance is passed down to the next in the line from the same family. However, one aspect that is common within a family is that the elder sons usually take over when the patriarch passes away. Therefore, the sector is heavily male-dominated. If a patriarch has more than one son, again, in most cases the elder takes over the helm of the business while the younger siblings either help the eldest or enter into a different trade other than the family business.

On the con side (i.e. unsuccessful businesses), several factors are attributable. The first thing that was noticed can be termed as 'impending generational change'. The third-generation McT owners seem to be a little disenchanted about the promise of this sector as some of them attempted to diversify the businesses as they saw fit. One of the reasons could be the continuous uncertainties that have pervaded this sector since 1990, coupled with the social pressure to switch to a 'good status' business such as ready-made garments. The social stigma attached to this sector seems to be powerfully affecting the new generation of McT owners. At least in one case, a McT owner sent his son to be educated in the UK so that he could receive a good education, acquire the necessary skills and upon return contribute to the family business. However, things did not go well when the son took over the business operations. The respondents reported that a lack of understanding of the business model, a lack of trust, the notion of corporatization, capital mismanagement, misreading the dynamics of the business,

and labour mismanagement are a few of the factors that caused the business to fail.

In analyzing data gathered in this research and extrapolating it to the following model in Figure 5.5, several things are revealed. First, the measure of success and failure depends on the understanding of family-owned McTs finding a balanced approach using ‘effective managerial control’ in relation to their ‘ownership control’. In most cases, it was revealed that the McTs, which fall into grid 5 (Figure 5.5) usually achieved resilience and therefore prevailed in the business for a long time.

<i>Unit with effective managerial control</i>	individual	1	2	3
	familial	4	5	6
	widely-held	7	8	9
		widely-held	familial	individual
		<i>Unit with controlling ownership</i>		

Figure 5.5: Defining family business – a structure-based approach.

(Source: Litz, 1995, p. 73; modified.)

Resource management is crucial for conducting successful business operation of McTs. In this research, it was observed that resources within McTs exist in three different ways and all are required to be managed effectively and efficiently to maintain resilience. These are discussed subsequently. First, human resource management is the central aspect that contributes to the resilience of a McT. Traditionally, in the Bangladeshi context, the supply of labour is abundant and, as such, these McTs do not maintain a permanent workers pool. Access to workers occurs through a network of intermediaries who work as a liaison manager in getting the demand from the owners as well as outsourcing labourers from various sources. Owners and their representatives naturally keep human resources management under their control, although external agents often assist them. Second, material management such as of chemicals and machinery are the next important aspect in McTs’ resilience achievement. Not all the McTs can purchase chemicals directly from a supplier and a majority portion of the chemicals come

from abroad and also the government regulates the sale of chemicals. Those McTs have ‘bond’ capacities as they can only purchase chemicals directly from an outside source. In this regard, it was observed that an informal buying-selling of chemicals exists that simplifies McTs’ business operations to a great extent. Additionally, information regarding the availability of ‘job work’ space is provided either by willing lenders who have empty spaces and unused machineries or by financial agents. This is an intricate and complex process. Yet, the respondent who was responsible for this job simply outlined the table from his memory. This shows how efficient this person was and that he achieved such efficiency by working in this sector for many years. Additionally, the respondent also stated that he learnt this job from his predecessor and learned by doing. In this regard, one owner shared his experiences about this matter. According to him, there are risks involved in chemical mixing because with a little deviation the whole hide/skin can be wasted, accruing a loss for the tannery. However, this rarely happens and without any formal training in dealing with chemical ingredients these workers have been doing their jobs from time immemorial. For example, Table 5.2 shows the basic chemical mixing amount that is usually observed in tanneries and the associated percentages (amount needed for appropriate mixing). It was found that these calculations are so ingrained in workers’ memories that they are able to do them without using any measuring mechanism or scale.

Table 5.2: Chemical mixing chart.

Pre-soaking (30 minutes)	Main Soaking (60 minutes)	Delivering Wash (20 minutes)
Water 200%	Water 400%	Water 100%
Liquid Degreaser (LD) Wetting Agent 0.2%	Treatment Chemicals 106 Degreasing Agents 0.3%	Ammonium Chloride 0.3%
Soda-ash 0.2%	Soda-ash 0.5%	Sulphate 0.2%
Domoic Acid (DA) anti-bacteria 0.1%	DA anti-bacteria 0.1%	LD 0.2%

(Source: Participants’ information.)

Money management comes next and should be understood in terms of both capital and cash flow management by the McTs. As mentioned earlier, this sector has several expensive steps: the purchase of the skin/hide from the market, the preservation and transportation of the skin/hide to Hazaribagh, processing it to a crust product, and finally selling it to the buyer. A

rough estimation in this regard shows that, on average, nearly one crore BDT is required to manage the whole operation. The details of capital management are discussed later in the chapter.

Many McT owners are the hereditary owners of land on which their tannery is currently established. However, they manage the land efficiently and it lessens their overhead costs in terms of fixed assets. I often heard during my fieldwork that the tannery business is for rich people only and unless someone has a substantial quantity of cash, it is nearly impossible to manage a business in this sector. Thus, it makes perfect sense why 78% of respondents (who are owners) reported that they did not have to pay anything for the land; therefore, they remained flexible in running their business how and when they saw fit. However, it is yet to be seen what the post-transition from Hazaribagh to Savar will look like since the government allocated the land.

5.2.1.3 Impact of Values, Faith, and Association with Resilience

This research reveals that a significant aspect of McTs' resilience is faith, which motivates owners to manage their McT's finances innovatively, meaning they exchange large amounts of cash based on trust. 42% of owners of the McTs under study informed that faith (i.e. Islam predominantly) motivates them in their everyday business transactions, especially when it comes to generating capital funding through informal sources. When asked, one owner mentioned that after he performed the Holy Pilgrimage at Mecca (*Hajj*), he worked very hard and successfully avoided bank loans, since banks attach interest and taking or offering interest in Islam is forbidden (*Haram*). In this regard he mentioned the following:

“After I performed my Holy Pilgrimage at Mecca (*Hajj*) I worked very hard to avoid bank loans as they attach interest and accepting or giving interest is forbidden (*Haram*) in Islam. I believe that paying interest to a bank means I have to payback regardless of whether my business is profiting money. Therefore, I never take this forbidden risk, trying hard and soul to run my business by my own ability.” (Respondent 4, owner of tannery ‘D’)

This raises a question: Without any bank finances, how is he able to run a business that is known for being capital sensitive? Throwing a closer look into this issue, it was found that the owner adopted a dual approach in managing his finances without taking interest-inclusive loans from banks. First, he negotiates with buyers and convinces them to increase their initial investment from past investments. Although this is not an easy task and is always fraught with uncertainty, the owner informed me that he was successful two out of three times on average. Nevertheless, naturally, the next question is: Why would a buyer trust him and commit an even larger sum of investment? The owner had a simple reply, which is that the buyers trust him and

know well that the risk exposure of this approach is minimal. Second, in the event of failure to convince the buyer to increase investment, the owner either discontinues his business or scales down his operations for a certain period. The important aspect to consider here is that these owners sometimes do not aspire to make money by any means necessary, and rather adopt a *laissez-faire* approach to profit making. Once, when asked why they violate the fundamental principle of business (profit-making), they had a simple answer: Allah is the sole provider of *Rijek* (i.e. Arabic for “livelihood”), and they try their best to earn it. Thus, it was seen that some owners are not highly motivated to earn money to make profit. Rather, they are imbued with faith and social values that if the business yields adequate earnings to cover their expenses, they are contented enough. Therefore, the total absence of greed is an important factor that might contribute towards achieving resilience.

Forty percent of the employees with whom one-to-one interviews were conducted informed me that their affiliation with the same McT has ranged from 25 to 35 years. This was another intriguing phenomenon that raises the question: What motivates these workers to stay with the same tannery for years? Four plausible explanations could possibly justify their long-term attachment. First, in the McT business, whether seasonal or permanent, the workers are employed based on references provided by someone who is already working in the tannery. These character and skill references are based on the aspiring candidate’s home base or personal network through which he is introduced to the factory. Once he is offered a job in the tannery, the onus remains on the referee who provided the reference and the new hire tends not to put the referee in disrepute by his conduct, so he sticks with the job as long as possible. Changing jobs in McTs is not viewed favourably and although this tendency was acute in the past, nowadays, things are changing because of rapid joblessness and the advent of ‘job work’. Second, a familial relationship is generated through day-to-day activities and often the owners look after their workers not purely through the lens of the ‘owner-employee’ paradigm, but rather as a co-worker who has an equal stake in the business. Although the employees rarely take part in decision-making matters, they still work in close proximity with each other and share their joys and sorrows. This eventually helps to cement personal relationships and thus employees do not want to change jobs and start new elsewhere. Third, when taking a cursory look at the employee life cycle, it was revealed that once the employee arrives in a stable position by earning a fixed sum of money every month, he tends to settle down and raise a family. When such a condition arrives, naturally, he does not want to switch jobs unless doing so would be very lucrative and promise a lot of opportunities. Fourth, once again, it was found that the role of faith is a significant factor in curbing greed in the minds of long-term employees. It was observed that, like the owners, employees are also ambivalent about their future growth and opportunities. They pin their hopes on Allah and explained that it is unto Him to provide

sustenance and they are only asked to work and try hard.

Informal and formal associations between and amongst the respondents are an important aspect for understanding the dynamics of resilience within McTs. For example, unlike advanced industrial countries, union exists amongst the workers, which helps to negotiate in improving remuneration and the workplace environment of the workers. Nevertheless, informal workers as well as owner-led informal consultative groups (i.e. another form of associations) can replace such formal unions. In the formal associations for the workers, they meet occasionally to discuss their professional matters, whereas the owners meet at their own associations to discuss policy matters and government positions on their business matters. The influence of the associations was measured in two ways: how frequently the workers/employees attended such associations and what they achieve through their formal/informal associations. It was found that owners' associations are somewhat more functional and thereby effective than those of the workers. However, this could be due to the unprecedented period of transition in which the research fieldwork was carried out. It was observed that numerous owner-led/participated associations actively negotiated with law enforcement as well as state agencies to secure their rights in the post-transition phase at Savar. On two occasions, it was also found that some workers' associations provided training and health services to workers and their families in Hazaribagh. Nevertheless, the power of association is evident in sustaining McTs' business in troubled times.

Through the respondents' experience, it was further revealed that workers from Noakhali district (located midway between the capital, Dhaka, and the port city Chittagong) are hard-workers and are disproportionately represented within the worker class. On the one side, all respondents (owners) opined that people from this locality possess a unique passion for working hard, remaining loyal, and being content with minimal things in life. Their work ethic seems to surpass that of people from other regions. The exact reason for such a variation could not be ascertained within the scope of this research. Yet, Noakhali workers' presence could be positively related to the successful business of 48% of the McTs, which took part in the study. Additionally, informal associations are found to be very ethnic in nature. For example, Noakhali people form associations within the same group through marriage and kinship ties.

5.2.1.4 Workers' Education and its Impact on Resilience

68% of respondents (workers/employees) reported that they did not have any kind of education, while 22% reported having up to a grade-5-level-education. 10% reported having up to a grade-9-level-education. This begs the question: Without a complete institutional education, how do the workers manage such a complex tannery system where the margin of error in production is

so thin? This question is answered below in three parts:

First, the tannery business is not for all and those who get involved in it understand the social stigma attached to this business sector. The working class people thus come from the very bottom rung of the society in general and from places where poverty is rampant. Basic educational facilities in these areas are seldom provided by government agencies and, as such, when the workers join this trade, they come uneducated.

Second, they learn their trades by receiving on-the-job training. They start working as a helper to a machineman or foreman or a person in charge of a unit in the factory and continue their apprenticeship. However, it appears that they are indeed keen learners since 90% of the employees I interviewed started their jobs without having any basic education. They informed me that mixing salt with hides/skins, putting water in drums, removing hair from skins/hides, transportation, and ironing do not require high skill. However, chemical mixing, drum rotation, and skin cutting require higher skills and McT owners usually hire professionals for such jobs. Third, some deviations were observed in two classes of people: new-generation McT owners, and technicians and “engineers” (a colloquial term used to denote someone who has some sort of degree from the leather institute). The older generation of owners seems to have only basic education that is sufficient to run a small business, yet they have ensured that their successors are properly educated so they can take over their business fully trained. On two occasions, it was observed that the new generation owners were educated in London, UK, and came back to take over their family businesses. Over the last decade, a leather institute has been established near Hazaribagh to train people wishing to work in this sector and a number of graduates have since joined the sector and work in varying capacities. They are mostly referred to as “engineers” whereas the technicians are semi-trained personnel who usually gained their experience while working in the tannery.

Given the condition of educational opportunities available in Bangladesh *vis-a-vis* workers’ ability to avail of education and training prior to joining the trade, we can assume that since most of the workers and technicians learn the fine details of their trades while at work, their knowledge of the trade is profound. They effectively compensate for their educational deficiencies through their earnest desire to learn and in turn this helps them to navigate through issues ranging from operating a machine to processing finished leather.

5.2.1.5 Organizational Routine and its Impact on Resilience

During the fieldwork, some of the characteristics of organizational routine were observed and these are described below in five stages:

First is the *pattern*: In this category, it was explored how action, activities, behaviour, and interaction create a pattern of work and therefore help achieve resilience. In a typical production day, the workers gather in the factory area and report to their machine leads (the leader of a machine). Workers were grouped in the past according to their previous learning ability and skills and preferences. However, cross training was also noticed, whereby a few workers were able to replace an absentee worker. As the day progresses, the workers keep doing their jobs as designated by the machine leads. Participants were asked if such a routine had changed and if they will have to accommodate some changes in the future. The respondents (machine leads and owners) responded that they train people to take over different jobs, earmark specific leaders in different sectors within the factory. Workers and machine leads interact dynamically, meaning that they work in close cooperation and proximity, set goals for the day, and the work is closely supervised by the owners' representatives so that quality is maintained. These activities, both individual as well as collective, take place in a small factory setting and people interact with each other orally. This work environment is familiar to the workers and owners and such familiarity breeds confidence. However, separate actions take place when the procurement of raw skins/hides happens in far-flung areas away from the factories. The purchase of raw materials is done individually (in most cases by the owner's direct representative or the owner himself) or in a small team. In this manner, the small team carries out activities such as measuring the quality, negotiating the price, and managing the initial preservation scheme and the shipment of skins to Hazaribagh and these actions are iterative. Additionally, a dynamic exchange takes place with the seller of the skin/hide. My research shows that this interaction is often unpredictable and filled with uncertainties.

Second is *recurrence*: While the workers work within the factory in Hazaribagh, their pattern of work is recurrent. They report to the same place every workday, use the same machine for production, take breaks during work at the same time, and finish work at the same time. However, such a routine is closely related to the machines they use and any change in the machines would change their pattern or routine. This recurring pattern or habit makes workers as well as the owner or middle managers confident – they are assured that they will be able to deliver a quality product on time. This acquired confidence due to routine is possibly one of the reasons for the prevalence of the low level of education/formal training system in the McTs. The third is the pattern of work which is *distributive yet synchronized*: McTs' core functions are distributed across space by creating sub-organizations. Multiple actors thus carry out routine activities located in different places. However, they are linked by interaction. For clarity, there are two distinct functional components of McTs that exist: the storing and

processing unit in Hazaribagh and the procurement unit (the key person in this unit is locally known as *Jachondar*). These two units operate in unison during the whole procurement and processing phases, though they are composed of different people/workforce. The procurement functions are tightly controlled and monitored by the owner although large-scale purchase of skins/hides only happens during the festival time on a large scale. Otherwise, the regular procurement of hides/skins is done throughout the year.

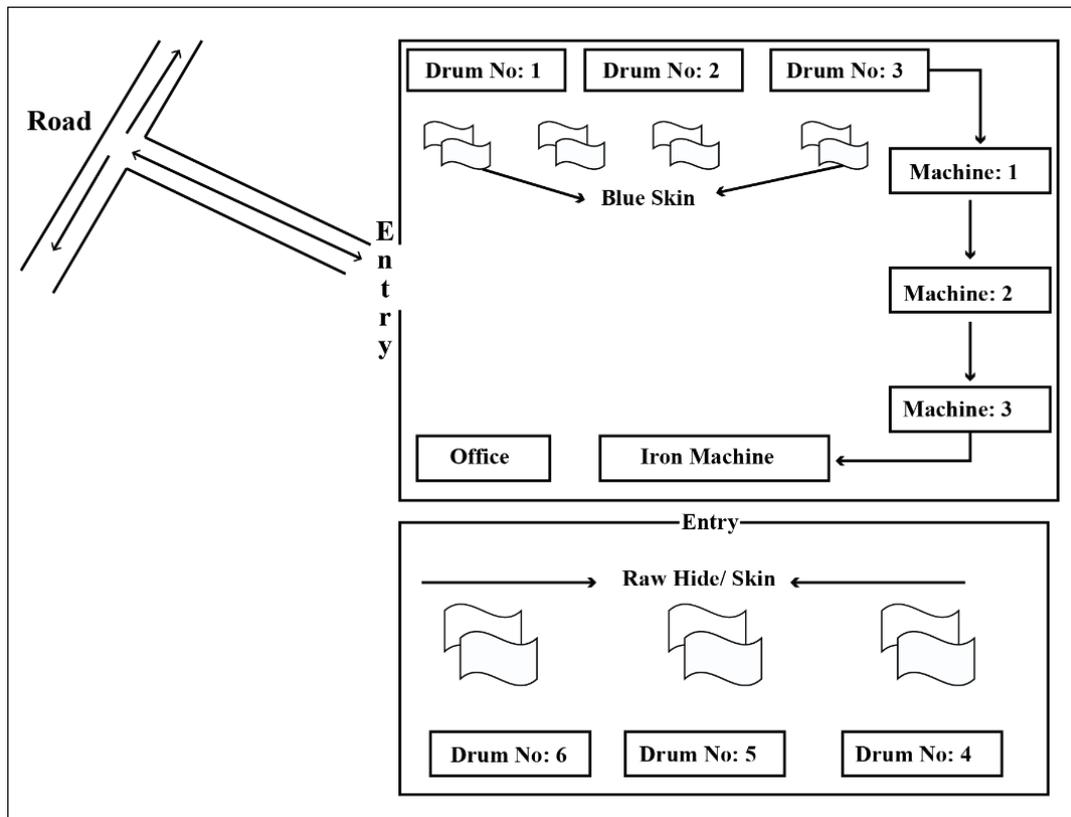


Figure 5.6: A typical McT layout.

(Source: Author)

Fourth, several unwritten *rules* were observed at play taking a cue from “...if [condition A] then [do B]...” (Becker, 2004, p. 645). For example, skin purchases from outside or inside the Dhaka area are done meticulously and a lot of preparation is required to conduct a successful yearly purchase of raw quality skin/hide. The owner first checks up with the current government price that is fixed for the particular year and calculates how much he would be able to offer to purchase skin/hide from the seller. He sets the rules. For example, rule number 1: Gain as much information beforehand to fix the purchase price by knowing at what price the cows were sold on the market during the festival. Rule number 2: Offer 25% less than the government fixed price for that year as a starting offer and then go from there. Rule number 3:

Keep close relations with local representatives to know what price they will likely be offered by competitors. Rule number 4: Mobilize cash money to the places to finalize the purchase. Rule number 5: Always prepare places for preservation, transportation and the requisite number of labourers required to do these jobs. And rule number 6: Never forget to remain prepared for any eventualities (e.g. speed money used as bribe, transportation-related hiccups). However, the rules are not written in stone and the owner and his representatives are normally highly flexible to change rules depending on the changing local conditions. In this regard, cellular phone technology has eased the process largely.

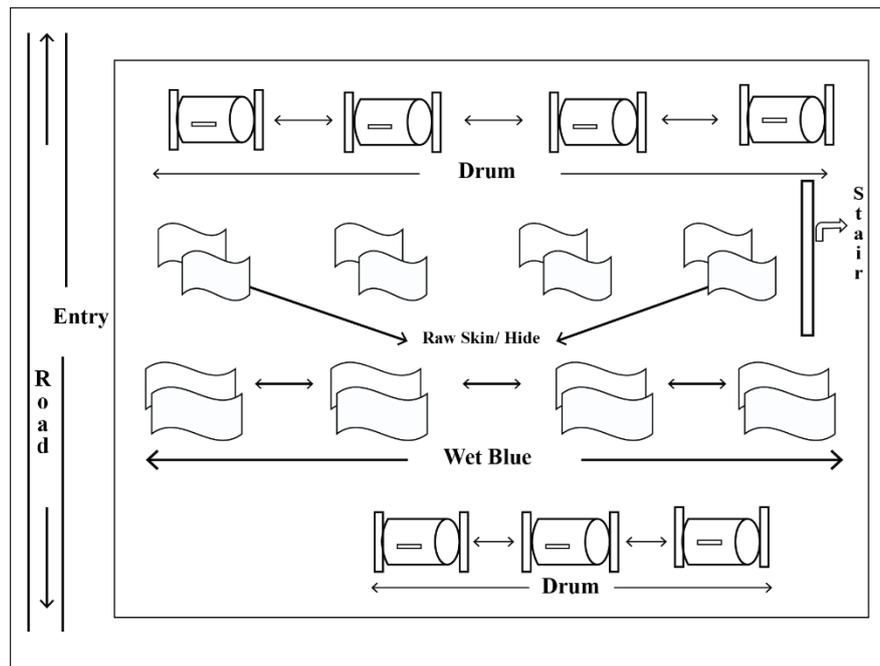


Figure 5.7: Location layout of a typical McT.

(Source: Author)

Fifth, in a literal sense, the respondents in this study were not aware why certain machinery is put in certain places. Most of the workers and some McT owners innocuously replied that this is how they discovered them and they simply carried on with the existing layout. In this regard, one of the respondents averred that:

“From the very first day of my work, I have seen these drums are here, exactly in the same place. I never even think of changing it, or never have any question on my mind. Because I believe that, it is a rule and fixed by my owner. I cannot dare to ask him about it”. (Respondent 5, worker of tannery ‘E’)

The participants explained the theme of routine in several sessions and, eventually, only 22% of respondents (owners) and 14% of respondents (workers) managed to understand the concept and its usefulness. Although the literature suggests that organizational routines should play an

important role in resilience, it is challenging for the owners as well as the workers to change from the habitual actions to a new way of thinking about their routine jobs. It appeared at first glance that the workers do monotonous jobs, yet a deeper look revealed that the floor supervisors and owners laid out the equipment so that they were able to utilize minimum space while employing the maximum workforce. The layout of almost every McT in Hazaribagh is identical, though the layout of McTs varies at Savar. Figure 5.6 and 5.7 show typical layouts of two McTs in Hazaribagh.

5.2.2 External Factors

In this research, the participants mentioned several items and upon analysis, these were termed as external factors, which were responsible for McTs' resilience. The participants informally spoke about their experiences of managing tanneries, what kind of technological changes they saw in the past, and most important the owners shared their experiences of managing capital. These factors are explained in the subsequent paragraphs.

5.2.2.1 Supply and Demand Management and its Impact on Resilience

In the global market, from the demand side, Bangladeshi leather has a stable and increasing demand. Three reasons can be ascribed to such a demand: the high quality of fine grain, uniform fiber structure, smooth feel and natural texture. Raw material collection and processing is directly dependent upon the demand of foreign buyers. "The main export destinations for leather are Hong Kong, China, Italy, Korea, Taiwan, Japan, Vietnam and Spain..." (Center for Research on Multinational Corporations, 2015). The local market is also growing. There are currently eight to ten major buyers locally. Some of the big industries opened up operations recently in Bangladesh and are offering more opportunity for domestic consumption. In the current context, demand seems to drive the McTs to achieve resilience and as gleaned from the previous discussion, a steady foreign and local demand ensures that McTs remain in business for a long period. Moreover, the business model shows that the supplier (McTs) heavily depends on the purchase of contracts to secure the initial investment needed to procure raw skins/hides. Therefore, if the buyers are not proceeding with their demands, naturally, McTs would not be able to do business with them.

From the supply end, a stable supply of raw skins/hides also exists and according to the Leather goods And Footwear Manufacturers & Exporters Association of Bangladesh (LFMEAB) and to Castle Research Report, the capacity of raw skins/hides in the domestic market is about 300

million square feet yearly, more than 75% of which is exported (Amin, 2017). 40% of raw hides/skins are collected from the single *Eid-ul-Adha* festival and the rest from the regular market and throughout the year (Strasser, 2015, p. 66). The *Jachondar* acts as the key procurement person who purchases raw skins/hides during the festival period. Several grades exist in the finished leather and prices vary according to the grades. However, the respondents stated that geographical variations exist in determining the skin grades. For example, cows reared in and around the Jamuna River and posh urban areas usually produce good-grade skins. A point to be noted here is that cows and goats are usually reared well in posh urbanite areas, since they are only reared to produce meat and, as such, the skin quality remains of a good grade. In sum, the supply side of the McTs' business is found to be robust and can meet increasing demands both locally and globally. In fact, some of the respondents mentioned a growing localization of the cow/goat-producing market. Over the past decade, a business culture has sprung up in Bangladesh in which many individual entrepreneurs were found to purchase cows and goats prior to *Eid-ul-Adha*, and feed and fatten them well with the aim to sell them during the festival. This business venture improved the skin quality largely. Nevertheless, the quality of the leather depends on the quality of the cow feed used to rear the cows and, as revealed, the cow-rearing condition in Bangladesh has improved over the past decade, directly contributing to the improvement of skins/hides.

One study showed that the installed capacity of tanneries has increased manifold since the 1990s (Raha, 1990). According to another study, "...113 tanneries have the capacity of 230 million sq. ft., though the current capacity is only 180 million sq. ft..." (Paul et al., 2013, p. 25). Thus, it can be concluded that the McTs have enough leftover capacity. Therefore, they can remain resilient in business, even if they have to continue their business to meet increased demands.

5.2.2.2 Impact of Technology on Resilience

Technology also plays a crucial role in McTs' resilience. Technology helps businesses to remain operational in several ways. First, it improves the communication abilities among the suppliers, workers, and owners. McT owners do not want to maintain a permanent pool of workers, but when they need to deliver products according to a contract, they are able to deploy the requisite number of workers. Cellular phones act as a communication backbone for owners. "Bangladesh is one of the most populous and most densely populated countries in the world. Mobile penetration levels are relatively high, even in rural areas (something not seen in most other emerging markets)..." (Lucini & Hatt, 2014). It has been observed that everyone

has at least one cell phone. Moreover, the money transaction system via cell phone, which is popularly known as *BKash* has opened up a new dimension for the owners. They transact money to purchase raw materials from all over the country. This low form of technology helps owners to communicate with intermediaries so that they in turn can collect the requisite number of workers for the job.

Second, it has been observed that the factory equipment was evolving. For example, earlier, Bangla drums were used for salting and crusting purposes. However, China drums are now used for this purpose. The basic difference between these two types of equipment observed was in terms of the quantity of production. China drums enable a larger quantity of production than Bangla drums. However, this change has impacted the labourers because Bangla drums use more workers to run the operation than China drums and this is why workers do not view such a change favourably. Also, the advent of digital cutting machines has changed the way workers now operate around the machine.

When the transfer of McTs from Hazaribagh to Hemayetpur is complete, the impact of technology will be more profound in managing resilience because the new facilities will possess a variety of advanced equipment including waste management systems.

5.2.2.3 Capital Management

The McTs in Bangladesh manage their capital in three ways. The commercial banks invest in McTs to a limited extent. One respondent from a commercial bank reported that since 1980, they invested in some of the McTs and still do. The bank provides loans for working capital as well as to run McTs' daily operations. Within the broader loan scheme, commercial banks also disburse loans under two schemes: cash credit (pledge; assets remain with the bank) or cash credit (hypothecation; assets remain with the clients). However, these types of loans are only disbursed based on need and depend on the assessment of McTs' production capacities. Again, if the McTs are able to produce export bills, the banks also provide them with loans for foreign document bill purchases, packing credit, letters of credit, and export cash credit. Additionally, the banks provide new project loans or loans for the purpose of the balancing, modernization, rehabilitation, and expansion of current factories. In such cases, banks look closely at the educational background of owners, modern business methods used, and different banking products. During the current transition process, banks pledge support to McTs, who wish to take loans to re-organize their businesses in Savar. However, the banks report many defaulters. Among others, the main reasons are fund diversion or misuse, a lack of accounting capacity,

the recession of the international market, a lack of succession (once the original owners pass away the successors sometimes are not capable enough to run the businesses), and accidental cases (fires and other hazards). Banks take legal measures, sell mortgaged properties, and sometimes exempt interest to recover their investment.

In the past, the Government of Bangladesh founded the BSCIC Bank to assist McTs. Although it did not perform well and eventually was shut down, no direct assistance was provided in the past by the government. Currently, the BSCIC helps in the transition of tanneries and the re-organizing of businesses at Savar. However, some proactive initiatives were observed in a recent official notification issued by the Central Bank of Bangladesh. The notification instructs that commercial banks that have already invested in the McTs should be able to transfer the unpaid debts into ‘block accounts’ and some moratorium could also be given if the banks want it. It also fixed a limit of 10% of interest that can be gained from block accounts and suggested short-term interest suspensions. For the export-oriented tanneries, the rules regarding down payments can be relaxed and additionally the central bank instructed to provide leniency on mortgage issues and scope for re-financing the tanneries during the transition period. The tanneries, which have unsettled lawsuits, can also resolve their cases by ‘*solenama*’ (a popular legal terminology in Bangladesh, highly used to denote a compromise degree).⁷ It was also stated that no NGOs should invest in McTs.

Capital generation from the informal money market seems to be not very transparent and the respondents were found to be unwilling to share information. However, it was observed that a healthy sum of money is being transferred among the owners, chemical suppliers, raw skin purchasers, and buyers based on mutual trust. Foreign buyers invest in two ways: through existing relationships (an old buyer refers to a new buyer’s situation) and through third parties such as buying houses (similar to the RMG sector). Additionally, one respondent told that McTs primarily use the ‘job work’ model in their businesses to produce wet blue leather, generate capital and manage their cash flow through cooperatives (meaning collectively raising money using a cooperative model).

Credit management remains one of the most crucial aspects in McTs’ resilience. For example, a report published in a daily newspaper captured the inherent problem regarding credit management and resilience of McTs:

“There are many SME (small and medium-sized enterprise) factories in Dhaka, they have

⁷ For details see Chancery Law Chronicles (2018): “Judicial Dictionary.” (Retrieved from http://www.clcbd.org/lawdictionary/browse/4.html?Lawdictionary_page=29 on 18.09.2018.)

manpower and the ability, but because of financial constraints, they are not able to grow. Our banks are more focused on SME loans for women. For others, it's really hard to get a loan. And even if one gets a loan, the process and the procedure are very complicated for the owners.

The government should go ahead to assist this sector in collaboration with leather-related organisations like Bangladesh Paduka Prostutkarok Samity (Bangladesh Footwear Manufacturers Association) and Bangladesh Tanners Association. The buying houses should organise fairs where international buyers can show up, talk with the suppliers, and hold buyer-seller meetings. The thing is if we let big companies dominate the industry, we won't grow and this sector won't grow; only the big companies will grow. But to sustain the industry, the small factories should get first priority, Sakir concluded..." (Debnath, 2017).

Most of the McTs do not get credit support from local banks because their yearly turnover is greater and it precludes them from qualifying for credit. So, they manage their business by using a local lending system based on trust and credibility. In some cases, I observed that the credibility matters a lot in terms of lending a large sum for the operational budget of McTs. Such credibility grows over years of working together and knowing each other. In some cases, it was observed that local banks are willing to provide loans, depending upon their personal relationship with the clients. Here, rules are often bent, and since this is a win-win situation for both the bank and client, the system continues. An interesting aspect of such a credit arrangement is that the banks are able to get their investment back at a rate of 90%. In this regard, one respondent commented that trust matters in Hazaribagh and no one dares to cheat in the business. Banks were also found to help some of the McTs by providing information to them about bankrupt businesses. This helps micro-tannery owners to approach the bankrupt businesses and rent their floor and equipment. Banks play an important role by acting as a liaison here because, on the one hand, the bank wants to recover its investment from the bankrupt tannery and, on the other hand, it cannot recover the investment unless the tannery is in business. For this reason, banks purportedly choose to share information on medium and big bankrupt tanneries so that McTs can get their contracted jobs done. This is again a win-win situation for the McTs, banks, and bankrupted tanneries.

Having analyzed these three types of investments to generate capital, it was observed that some McT owners skillfully managed their capital and thus succeeded in their businesses. Two issues are at play here. First, the majority of owners prefer not to work with commercial banks because they are not very educated, and they find banking processes far too complicated to understand. Working with banks is not very conducive from an Islamic viewpoint (i.e. interest consumption), and to a limited extent they do not want to use 'speed money' (see note 21) to

manage bank loans. Second, they try to capitalize on their fixed assets, convince buyers to invest heavily and in most cases generate capital through a cooperative model to manage their operations. In case they fail to manage adequate capital, as a last resort, they will seek help from banks. This dual approach to capital management in fact contributes to McTs' resilience.

5.2.2.4 McTs as adaptive Organizations

The McTs under study appear to be highly adaptive to the changing global and local environments. First, the size of the business firms matter and contributes positively to achieving flexibility and thereby to remaining in business for a long time. Since a single person or family owns these firms, the decision to keep it small varies depending on the job at hand. As discussed in the preceding chapter, when defining the size of the business, there is no fixed matrix found for identifying the size. Rather, during the study it was observed that sizes vary from five to 25 persons. This is how these businesses become highly versatile. In most of the cases, the fixed assets of the firms were found to be very limited so that in case these firms needed to adapt to new changes they could do so with relative ease. Another significant aspect that defines these McTs is their ability to manage their operations with highly flexible models – such as the hybrid management model, which involves keeping a limited pool of core staff (i.e. chemical man, procurement man, and labour manager) and then maintaining a versatile pool of seasonal workers. This model helps them to lower their operating costs and manage business operations through close and personal involvement.

“About 95% of Bangladesh's leather and leather products are sold overseas, mostly in the form of crushed leather, blue wet leather, finished leather, leather garments and footwear. At least 90% originates from the Hazaribagh area [McT], located in the capital city of Dhaka...” (Bliss, 2017). Although McTs' number has shrunk since the late 1990s, most of them are still in business. However, the following characteristics were found to be common:

- a. Most of them maintain a small footprint in terms of their infrastructure and machines. Most importantly, they do not use computers or specialized software to manage their day-to-day operations. Although they benefit from the extensive cellular network that exists in Bangladesh, during the research it was not explicitly observed that the participants benefited from smartphones and related information technological advantages.
- b. They maintain a small pool of core employees and a large pool of seasonal workers.

- c. Their marketing strategy is dependent upon their ability to maintain a network in the sector through intermediaries. These intermediaries collect information about a contract and negotiate prices. Most of the McTs do not have marketing persons or strategies. It often occurred that, at times, some of them seemed to be reluctant about pursuing contracts. This apparently not ‘very persuasive’ attitude seems to have roots in the current business environment, where it was informed that there were plenty of opportunities available to get job contracts. Nevertheless, in the later part of the study, it was also observed that some of the owners have changed their views and reported that they are fearful of losing contracts due to the transition to Savar.
- d. Local collaboration is crucial for the survival of the McTs. This characteristic seemed to be a little contradictory in the sense that one approaches such a situation while expecting to see stiff competition among peer tanneries, yet it had been observed that mutual collaboration is at work among them. This helps each other to get contracts.
- e. McTs not only create an adaptive network amongst themselves but also include external stakeholders within their network primarily to gather information to manage their supply chain. For example, using low-tech cell phones, many owners effectively manage the procurement of skins and hides all over Bangladesh as well as ensure that they have demand for the products. Thus, this information network contributes to managing the organization largely.

5.3 Social Capital and its Impact on Resilience

If we consider the essence of social capital, which is the type of business owned and managed by the poor and marginal in society, then McTs might be unfit in a classic sense. Technically, the employees of the McT do not own a share of the business and they do not take part directly in managing the business. However, this research reveals several aspects of social capital found within the McTs. First, although the employees do not own the business, it was found that permanent employees play an integral role in the decision-making process of the McTs in business management, finance management as well as marketing. Second, besides paying salaries to the permanent employees, some owners share their profits with them and thereby they feel a sense of belonging to the factory and to the owner. Third, the permanent employees seek out poor people who wish to work and are able to do so and they hire them, train them and recommend them to the owner for seasonal employment. The person felt that helping goes a long way in maintaining close social ties and they should stick together during good and bad

times in the business. Fourth, several linkage businesses are connected with the leather business such as the soap business and ceramic industry, which use bones, hair products, and poultry feed from the waste (respondents reported that there were as many as 30 such linkage factories available in Hazaribagh at one point). Given the interdependence of these linkage factories, it helps McTs to manage the down time in their business, thus contributing to resilience.

Chapter Six: The Knowledge Keepers of the McTs – Ways and Means of Managing Knowledge for Resilience

Three stakeholders in the McTs create knowledge networks: owners, machine operators, and technical persons. These groups manage the total operations of a McT in a dynamic way. However, the word ‘knowledge’ sounded somewhat strange to the research participants. They do what they ought to do, they do what their predecessors did, they do what they are asked to do, and they do what they think will help to secure profit. What is normal for them is to continue business day in and day out. For example, I asked respondent 6, who has been working in an McT for the last 22 years as he progressed from a line worker to a supervisor, who is responsible for the measurement of the product. He informed me that he has seen gradual changes in the way he works at his particular position. In the past, he used measuring scales to measure the exact length and width of the product and he learnt this technique from his supervisor. He also stated that he knew how the product needed to be placed in a certain way on the flat surface of the machine, how it needed to be measured while keeping the scale in a proper position, how the measurement was to be noted in a log book, and if there was any discrepancy noticed how it was to be logged and reported accordingly. When they imported the digital measurement machine, the only significant thing that changed was the way the measurement scale was used. Now, the digital machine could automatically make measurements and all he has to do is to record the reading in the log book. When asked if he could do things differently, he said that when he used the manual scale, a lot of attention was needed to mark the readings and carefully note them and he would often double-check them before sending the product to the next stage. In the past, he had a back-up plan in place to ensure it was near-perfect. He could only recall four occasions on which he failed to do his job as expected. Nevertheless, he now relies on the digital machine to give him the reading and he would not know what to do if the machine malfunctioned and he does not have a backup plan for making measurements. It was observed that respondent 6 is assisted by three people when using the machine and he was asked how he trained them, how many hours were spent on the training, and, if he did not show up for a day or two, was it possible for others to continue his job. He explained that all the training that takes place is ‘on-the-job training’ – they learn by doing. So, he is often given new workers and they start from the basics and gradually learn all the processes involved in that particular station. Some new employees are eager to learn and some are not, yet he tries hard to train them. He also said that if he was away it could have been

very difficult to continue operations since the owner did not keep an alternate person to fill his position. Therefore, sometimes even though he feels like taking breaks, he has to come to work. He believes that it is his duty to come and work when the contract work goes on. Otherwise, the owner would fail to deliver the products and everyone involved in the process would suffer. The above-cited example is typical for a McT worker, as most of them have received their knowledge over time while working on a particular station in the factory. They acquire the technical knowhow needed to run the machines and complete the assigned tasks within a specific period and they are dedicated to doing their jobs, as they know that teamwork pays off at the end of the day. The team members must know their jobs well, including how their work affects others in the chain. Further, there is rarely any rulebook or manual found nearby the machines or the workstations and when asked, they simply replied that they did not need one – the manual is imprinted in their memories. If something needs to be found out, they look to their supervisors and know that they will come up with a response to resolve a problem, whether it be production-related or personal.

In this chapter, a description of the knowledge network in which the identification of knowledge keepers and the role of leadership is discussed. Next, the knowledge management process in various management aspects of McTs is elaborated. Here, an explanation is forwarded as to why and how knowledge is generated and processed, and why it is important to take into account the local variations in calculations to run McTs' operations. Subsequently, the accessibility of capital and credit management, how the top management acquire and use knowledge to cope with changing global-local conditions, knowledge related to standard compliance, and employees' health and environmental issues management are discussed. Further, the interaction of explicit and tacit knowledge that was gained from the analysis of the above matters is elucidated. In the following sub-section, various factors that contribute to indigenous knowledge production are presented.

6.1 The Topography of the Knowledge Network

Individual employees, managers, supervisors and owners co-create a knowledge network through their interaction in various phases of McTs' operations. At a cursory look, this claim seems to be rather ordinary, yet these actors' interactions are dynamic, individualized, flexible, and responsive. It is rather important to commence the chapter with a brief reference to the SECI model of knowledge creation and dissemination. Figure 6.1 is a modified version of the original model shown in Figure 3.2.

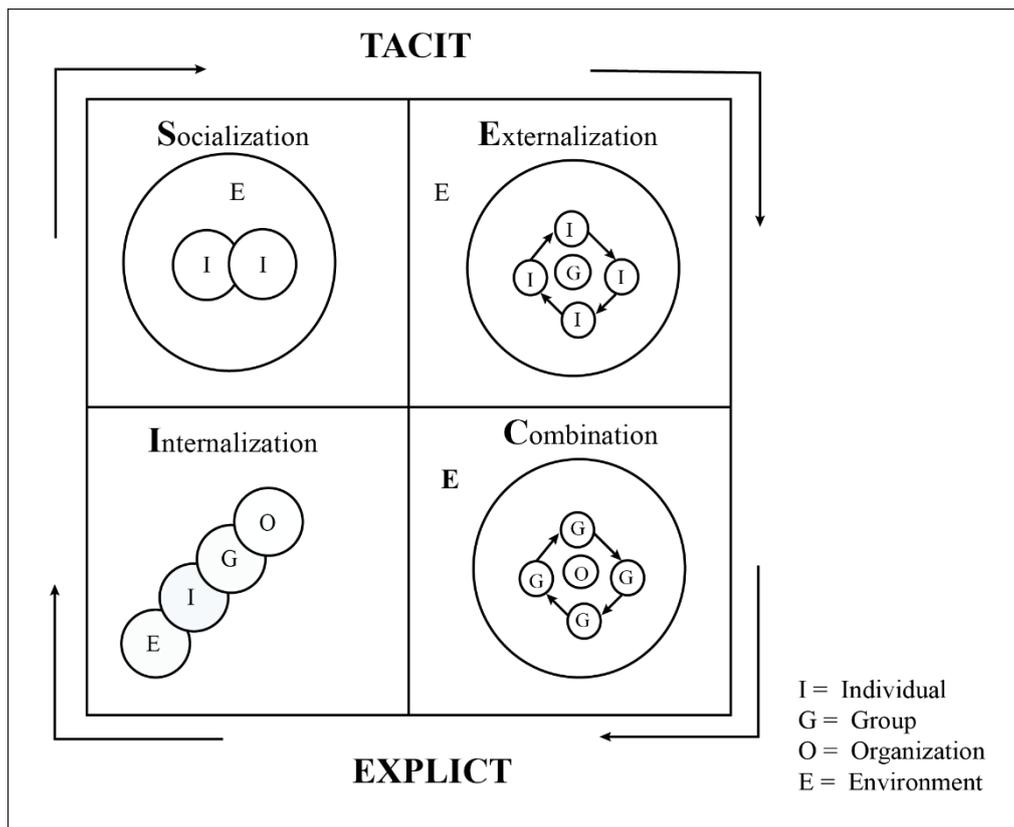


Figure 6.1: Adopted with modification SECI model.

(Source: Nonaka et al., 2008, p. 19.)

In the Figure 6.1, the top left quadrant depicts interaction of a number of individuals (in this case the workers) within a McT environment. Through sharing with each other, they are creating tacit knowledge derived from their direct experience. In the top right quadrant, these individuals are again interacting with the rest of the elements of the organization (i.e. McT), such as owners, technicians, middle management. Through dialogue and reflection, more knowledge is created. Here, they articulate tacit knowledge through body language and using colloquial day-to-day terms in their native language. However, such tacit knowledge is also translated into a concept or prototype. For example, here, a routine to operate a machine or to run a protocol for mixing chemicals with the skin is created. In the right bottom quadrant, a number of groups is shown interacting within the organization (i.e. McT) where knowledge is gathered systematically to create explicit knowledge. Here several routine aspects (such as production, collection, and marketing) of running a McT business are combined within an overall McT environment. In a typical McT, such a knowledge is not written down in a log book or manual. Rather, people rely on their experience to generate knowledge. The bottom left quadrant depicts the continuous interaction of an individual, group, organization. The

environment helps to learn them acquire new tacit knowledge in practice.

Now, let's dig deeper by relating the SECI model of the process of knowledge creation as well as roles of the various actors. In this regard, the Figure 6.2 is perceived. In the figure, the knowledge network is depicted as having vertical and horizontal dimensions. In both these dimensions, three types of actors were observed: knowledge developers (KDe), keepers (KK), and disseminators (KDi), all constantly interacting with each other. Again, these three types of actors create several knowledge components based on the nature of the knowledge they generate, develop, maintain and use.

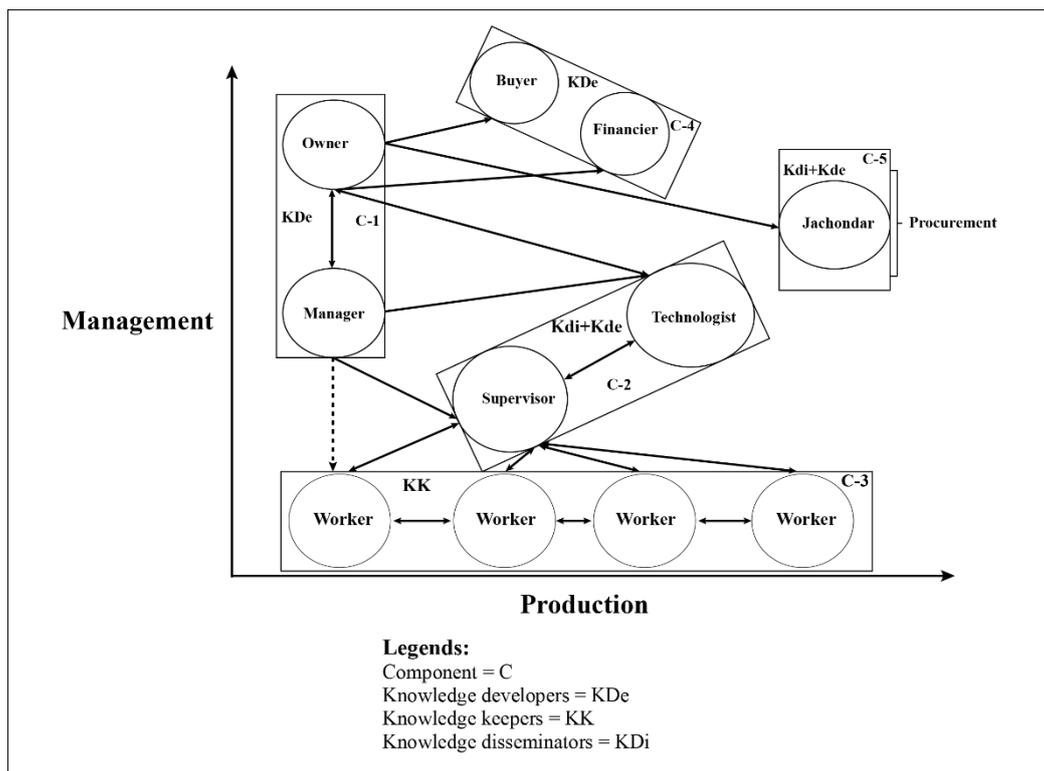


Figure 6.2: Knowledge network topography.

(Source: Author)

In the vertical dimension, component 1 (C-1) was plotted, which consists of the owner and manager. Although sometimes, the owner-manager is a single entity. However, in 11 cases this research found that the owner employed a manager to look after human resources and logistical issues of the McT. The actors of this component develop knowledge by virtue of their roles in the overall McT structure. They generate knowledge through their experience and changing business environment. In component 4, which technically falls into the vertical dimension, two types of KDe were observed, the buyers and financiers. The buyers (either directly or through the buying houses) put up orders and, in doing so, generate knowledge about the type of product

they want. The financiers (banks or informal sources) are also active in this component as they determine how the owner will act and how they will produce.

In between the vertical and horizontal dimensions, the *Jachondars* (i.e. middlemen) were visualized working, who normally only take part in the process once in a year (i.e. the *Eid-ul-Adha* festival). However, throughout the year, such middlemen also take part in the process but not to the same degree as during the *Eid-ul-Adha* festival, when the largest volume of skins/hides are procured. They were put in component 5 (C-5) and they have a direct link with the owner and his/her designated person responsible for the purchase. Knowledge generated in C-5 is crucial for a number of reasons. First, the *Jachondar* needs to know where the specific types of skins/hides will be available. Second, he needs to determine at what price they can be purchased (keeping in line with the government guideline, which are given prior to the festival day). Third, he and his team have to ensure the quality of raw skins/hides so they turn out well at the processing place (i.e. Hazaribagh). In fact, this actor has a dual role, as besides developing knowledge he also disseminates knowledge to the owner so he can decide on how much his investment will be in procurement and what quality he is expecting.

Next is component two (C-2), which is composed of supervisors and technologists. Supervisors are the knowledge keepers who learned their trades through hands-on working. They are put in charge of a particular station and get to supervise a number of workers. They also act as mentors to many workers. Additionally, the technologists also act as knowledge developers because they determine the chemical usage in the whole process. This is a critical aspect and in the fieldwork, it was found that around 50-55% of technologists actually learned the trade through their experience and they are not formally trained by any institution. These two types of actors perform a dual role: KDe and KDi.

In the horizontal dimension, component 3 (C-3) the main actors of the network were plotted, i.e. the workers/employees working at various stations designated on the production floor. A group of workers who perform a single task is located within a particular workstation. For example, the soaking and salting are done at a station where the drums are located. Likewise, several groups of workers work in different workstations where other tasks such as tanning, measuring, and cutting are performed. While a particular group works independently to complete a particular task, they also work in unison with other groups as the product moves from the base level upwards.

In Figure 6.3, interaction among all the components is shown separately. It becomes clear that C-1 actors interact with C-4, C-5 and C-2 most frequently and share/disseminate knowledge. Yet, C-1 actors less often directly interact with C-3 actors. C-2 actors interact closely with C-3 actors and knowledge exchange and generation is intense between these two types.

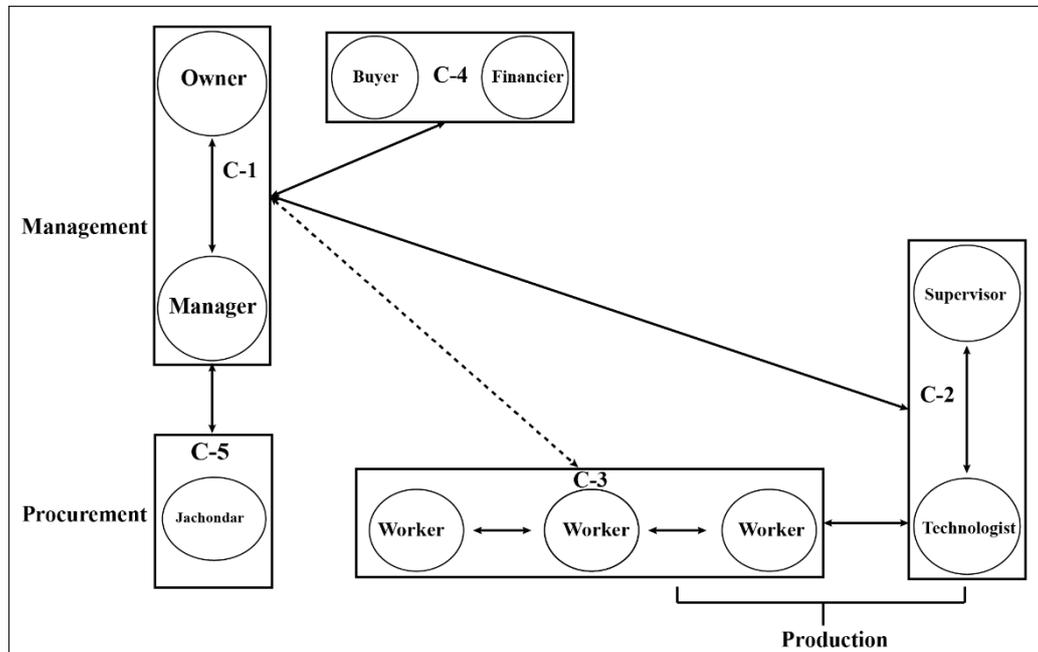


Figure 6.3: Component interactions (C), knowledge generation, and diffusion.

(Source: Author)

6.1.1 The Interface of Knowledge Developers (KDe), Knowledge Keepers (KK), and Knowledge Disseminators (KDi)

If we consider knowledge a “justified true belief” that increases an organization’s capacity for effectively delivering its products/services, we find two components: justification and belief (Nonaka, 1994; Nonaka & Takeuchi, 1995). The justification for doing something in a particular fashion comes from experience and emanates from a long process of trial and error that is evident at all the levels of a McT (although it has some drawbacks which will be discussed later in the chapter). Once justification is made, it shapes the belief system of actors, and in turn becomes a truth for the actors. For example, a long-time buyer believes there is no risk involved in lending advance money to certain McTs and receiving the delivery later. A local financier believes his investment is safe and even in most cases this needs not to be put

on paper as part of an agreement. Furthermore, the workers believe they have guaranteed work hours. So various actors in the McT context continuously ‘justify’ and ‘believe’ through numerous interactions. That is why it is important to know how these actors interact and how they develop, maintain and disseminate knowledge through justification and belief. In this regard, it was observed that seamless cooperation took place among all the actors (i.e. KKs, KDis and KDes) in all five components in generating and disseminating knowledge in the following manner.

First, the KKs (in C-3) receive instructions on how to do a procedure (for example, soaking) in a particular way and they follow the instructions by the book. In doing so, they follow a specific pattern each time – the routine. However, such a routine is pre-determined by the owner who, after receiving a contract from the buyer, sets a strategic direction for doing things. Although the KKs follow a set pattern (i.e. routine) they do not receive formal training on how to do things at their station. Since they do not receive any formal training, all they do is repeat what they are taught to do by their immediate supervisors. Nevertheless, over a period the KKs become efficient, learn every minute detail of their workstations, and can eventually repeat things with little or no instruction from their supervisors. Again, among the workers there are ‘newbies’ and ‘oldies’ in the job (based on their employment length) and the new workers go through a learning process by receiving instruction from the experienced ‘oldies’. This is how knowledge is transferred between the ‘oldies’ to the ‘newbies’ at the horizontal plane. Another important aspect is that workers are seldom interchangeable (meaning workers trained to work at one station are seldom assigned to work at a different station). Thus, the KKs keep their knowledge among themselves only and such knowledge is essentially localized (meaning pertaining to a workstation). Additionally, on some occasions, some workers switch tanneries and in such cases, despite their short length of employment in the newly joined McT, they come with a wealth of knowledge from their previous workplace. They are often found to be eager to share their knowledge to improve things at the new workplace. Subtle competition was observed between the newly joined workers from other McTs and the current workers, if a new worker proposes a new way of doing things. This is partly attributed to the notion that the current workers think they do things properly and optimally. However, it was reported that with the passage of time, if the new worker had good ideas on how to improve things, his/her suggestions are generally accepted after the supervisor duly vets them. In sum, the KKs are the grassroots-level actors who acquire knowledge through instruction (which are mostly verbal) and they keep the knowledge with themselves. However, in some instances, they transmit it to other workers (marked by a double-pointed arrow in Figure 6.1 and 6.2 positioned at the same

level).

Second is the interaction between C-2 (KDi and KDe) and C-3 (KK). Actors at C-2 form the core-staff group in a McT who are directly employed by an owner. In C-2, the supervisors play a significant role in knowledge development and dissemination. For example, a supervisor usually learns his job by working in the same environment over a number of years. It was observed that the average length of service of a supervisor varies from 15 to 20 years. He gains his experience through a trial-and-error basis and becomes very confident in supervising workers. Thus, in one sense, he has developed knowledge in performing particular tasks, yet he is also an agent for disseminating knowledge to the workers working for him. The workers' efficiency depends on how effectively the supervisor disseminates knowledge to them. In the fieldwork, it was observed that it is not always customary to have one supervisor. Rather, on some occasions, it was observed more than one supervisor was present, and in such cases, they perform different roles. The dissemination takes place verbally between a supervisor and worker. The next actor in this component is the technologist, who is the person responsible for determining and ensuring the proper mixture of chemicals in the tanning process. This is a crucial task because the knowledge developed by the technologist has to be accurate. Otherwise, the whole production will suffer immeasurably. As seen during the fieldwork, a skin/hide comes in one piece and stays that way through to the end of the process. It has to remain in one piece to meet all the standards for sale. Thus, the margin of error by the technologist is very thin. Later on, it was learnt that most of the technologists are self-taught persons and they had been on the job for 18-20 years on average. However, over the past five to seven years, things have gradually been changing as graduates from various leather technology institutes are entering the job market and are replacing self-taught technologists. The technologists share their knowledge with their supervisor and sometimes with the manager (who is responsible for logistical aspects). In sum, at this level, the supervisors interact and receive feedback from workers (depicted by a double-faced arrow) when disseminating knowledge. Technologists also interact with supervisors. Therefore, these actors perform a dual role both as KDi and as KDe.

Third, the *Jachondar* (i.e. intermediary) at C-5 is a standalone actor because he is usually the person who acts on behalf of an owner to purchase raw materials (skins/hides). In some cases, either he cohabitates with an owner or he might be located outside the McT and work on a commission basis with an owner. Again, some of them are employed while others are not. This actor performs another crucial task, which is to purchase the right quality of hides/skins, mostly during the festival season and on a routine basis from urban centers.

Jachondars gain knowledge by understanding various nuances of skins/hides, for example, texture, smoothness, etc.. Their knowledge of negotiating prices at the supply level is also crucial since this determines the overall cost of the production in the end. They have to remain updated on the government prices as well as on local variations so they can strike a good deal for the owners during the purchase. They also maintain a large network of suppliers spread all over the country who communicate with them about the quality and price. Usually, owners directly deal with *Jachondars*, though in some cases managers also deal with them in managing the storage and transportation aspects of the raw materials. Since they have to share their knowledge with the owner and their strength of knowledge lies in understanding changing circumstances at the grassroots level, they act as both KDi and KDe.

Fourth, the buyer at the C-4 component is the next important actor who essentially sets the overall tone of the business. The McTs access buyers either directly or through buying houses. The buyers place specific orders and the owners receive instructions with timelines, etc.. On three occasions, it was observed that the buyers are overseeing the production at the factory level, although this is an exception and not the rule. Some of the old buyers are connected with owners in a symbiotic relationship, meaning they help an owner purchase raw materials on time and maintain their quality. This is how they participate in knowledge development. Given their long involvement in the sector, which includes their connection to the market directly, they usually have a lot to share. While the influence of foreign buyers is significant, the local buyers nonetheless play an important role as KDe for similar reasons. The financier comes next, since they also play an important role in developing knowledge, which helps an owner in terms of capital management. A financier, whether it is a bank or a local lender, knows the credit history of an owner, relies on the past record of a McT since they invest in the business, and has to ensure the return. In sum, both the buyer and financier develop knowledge and interact with owners.

Fifth, the owner and manager in C-1 is the most important part of the knowledge development process. The owner, upon securing a contract from a buyer, sets the team in motion. He takes care of the supply side of the chain (i.e. procurement) with the *Jachondar* and at the same time ensures that his instructions are passed down the production chain properly. He is the reservoir of knowledge and his knowledge sources are his experience in running the business, his associations with professional and business networks (for example, memberships at BTA and BFFLEA), relationships with financiers, and his overall ability to manage logistical aspects. In all the McTs (with two exceptions), it was observed that an owner employs one or two managers to look after various administrative, HR, and logistical functions of the factory. The

owner and manager interact closely (depicted with a double-faced arrow) and on some occasions it was found that the managers are either a family member or the son of an owner (i.e. the apprentice or the next owner in training). A manager also interacts with supervisors and technologists to pass down instructions and oversee the production, although a manager sometimes deals with workers directly for HR purposes. In sum, the actors at C-1 are the most important part of the knowledge development and its management process.

6.1.2 Knowledge Impediments – Justification and Belief Cycle

In this research, it was noticed that the actors in C-1 (Figures 6.1 and 6.2) are pivotal to knowledge development, dissemination and management. Nevertheless, these actors work in a particular socio-cultural-economic context and their experiences in doing business were shaped by these three aspects. Since all the respondents who are in C-1 have been in this business for 25 to 30 years, they have developed a particular rationale (justification) in doing business (maturing up to the point that was seen during the fieldwork). Their justification in conducting a process such as the procurement of raw skins/hides through *Jachondars* has contributed to their belief that this is the best way of procuring these items. In managing human resources, likewise, they think that whatever role they take (benevolent-autocrat) is the best way to manage the workforce under their disposal. Further, they also believe they should have little or nothing to do with curbing environmental pollution or contributing to the health management of their employees. They are particularly apathetic to any kind of change, whatever form or fashion it might entail. For example, all the actors in C-1 were found to be reluctant to take advantage of information technology to improve their productivity and marketing. Particularly, they are averse to putting their business transactions in digital form (i.e. spreadsheets) and they expressly rejected the idea that information technology could help them gain an advantage in the current situation. In essence, it was found that they are content with whatever knowledge the actors have gained over the years and do not see any further improvements being made in their McT business, even if they adopt changes. This is called knowledge impediment since the level of knowledge (perceived by actors) attained prohibits any further development.

While exploring the nature of impediments, four things came to the fore. First, a fear of losing valuable financial and business secrets seemed to dog the actors, demotivating them to be open to change. Although second and third generations are gradually taking over their parents' businesses in this sector, no significant influence by them in motivating their parents and managers to adopt new technology was observed. Second, they perceive the adoption of new

technology as entailing further investment and that discourages them from adopting technological or management changes. In sum, doing business like in the good-old-days seems to dominate this sector. Third, no external agencies have ever approached the McT owners and demonstrated that the adoption of new technology or new business practices, in fact, would positively contribute towards their businesses. Fourth, actors in C-1 and C-2 are bound together with a sense of loyalty and trust as they work closely together over the years. In this regard, even if the new generation of owners attempts to do things differently than their parents, most of the actors at C-2 are still older generation workers and do not feel the same level of trust with the new owners, resulting in resistance to change. On one occasion, it was informed that one McT had to close its business because the new owner (who took over from his father), who received an MBA from Scotland, failed to grasp the nuances of working with older generation C-2 actors. Thus, it is evident that knowledge acquired by these actors actively opposes any new knowledge, even if this knowledge could bring good things to their business. There is a pervasive perception that technology will cause job losses for all ranks and files in a McT. Moreover, if the necessity to take advantage of technology is not felt at the C-1 level, how then will innovations in McTs' business practices take place? Despite experiencing ongoing global and local challenges including the biggest one related to relocation, why the owners insist on doing business in an old-fashioned way might be explored further in a separate research.

6.1.3 Interaction of explicit and tacit Knowledge – an Analysis

Drawing from Nonaka & Takeuchi's (1995) explanation of the two dimensions of knowledge (explicit and tacit), my research shows that mainly tacit knowledge is generated within a McT environment. The knowledge topography in Figure 6.1 shows the interaction of various actors in a McT, where their tacit dimension of knowledge is based on their previous experiences, thoughts, and feelings in the specific Hazaribagh context. Additionally, it was felt that such knowledge is comprised of both, cognitive (referred here specifically as the "psychological processes involved in acquisition and understanding of knowledge, formation of beliefs and attitudes, and decision making and problem solving" (Business Directory, 2018a) and technical (meaning it has a manifestation in technical usage). In this particular McT context, it was found that the negligible expression of explicit knowledge, which is codified as words, numbers, formulas, and documents. At the C-3 level, on the other hand, the explicit dimension of knowledge in the form of "rules-based procedures" were noted in four ways (Popadiuk & Choo, 2006, pp. 306-307): 1) "...task performance rules that specify methods for accomplishing

organizational tasks...” as supervisors and technologists specify tasks to line workers explicitly and set objectives; 2) “...record-keeping rules on what records and how such records should be maintained...” as managers and supervisors keep records of workers’ hours and other logistical matters.; 3) “...information-handling rules that define the organization’s communication system...” as owners communicate with managers/supervisors/technologists as well as with buyers and financiers following some norms; and 4) “...planning rules that guide the planning process and the allocation of resources among the activities...”, as owners and buyers plan and set guiding rules for production.

In addition to the two dimensions of knowledge stated above, a third dimension was found, which is termed “cultural knowledge” by Choo (1998). This aspect was observed as dominating the McT environment to a great degree because many different aspects of actors’ interactions are based on “...assumptions and beliefs that are used to describe, and explain reality, as well as the conventions and expectations that are used to assign value and significance to new information...” (ibid., p. 112). Additionally, such knowledge is not put down into words or documents, yet it can be felt through the ties and relationships that connect actors of various components, as illustrated in Figures 6.1 and 6.2. For example, owners manage investment from a buyer or the informal money market based on trust and belief, assuming that the money will not be lost or that the McT will fail to deliver the product. The owner trusts a *Jachondar* to procure the best quality raw materials from the market and is not afraid of advancing money to complete procurement. It was found throughout the process that an informal convention (i.e. who will do what and how) exists from the procurement up to the product delivery, and seldom is such a convention broken. In some cases, as reported by the respondents, it was found that if someone broke the convention they paid heavily and at times at the cost of losing business. Additionally, the actors attach a lot of value to their tasks and their relationships with others and this is the reason why they do not feel that they have to explicitly mention what others should or would do. They expect all to behave within a set norm and not to break it. In essence, an invisible thread binds the whole interaction process and the actors simply play out their particular roles in it without much fear or trepidation for the future.

The next aspect in the knowledge generation process is observing the interplay of individual and collective knowledge and the context in which it takes place. Scholars mentioned that “...individual knowledge is created by and exists in the individual according to her beliefs, attitudes, opinions, and the factors that influence her personality formation. Social knowledge is created by and resides in the collective actions of a group...” (Nonaka & Takeuchi, 1995, cited in Popadiuk & Choo, 2006, p. 307). As seen from Figure 6.1, actors at C-1 and C-2 are

individuals who develop and disseminate knowledge and act as knowledge repositories. They also control knowledge given their long presence in the business. Simply put, they are the authorities and workers look to them to learn the exact way to perform a task. Regardless of such individualistic control over knowledge, a sort of collective knowledge is also developed in the process. Further, the influence of such knowledge in the procurement process of raw materials was observed, where the owner/manager and *Jachondar* interact. Since the *Jachondar* on the ground verifies the quality of skins/hides, it is mostly he who understands how much work a particular piece of skin/hide will require. His knowledge matters greatly and if an owner is not close by they communicate using a cell phone and through this process, they generate collective knowledge and use it to accomplish the procurement of high quality raw materials. On a different front, an McT owner always looks to lease machinery and office space from close factories and understand who has information – the financier (in this case, the banks). The bank manager provides information on the availability of resources and connects the owner and the lessor. In this process, as the three parties gather information, collective knowledge is generated to accomplish a task (i.e. production).

The next relevant aspect is to see how knowledge conversion between the explicit and tacit takes place within the McT context. For this purpose, a model from Popadiuk & Choo (2006, p. 308) was adopted and modified (Table 6.1) to explain the findings.

Based on the above discussion, the socialization process among the actors is complex and I observed frequent socialization at the horizontal level among those in the C-3 component more than others did. However, it is again not the frequency of socialization, but rather the quality of it that matters since the actors value honest and sincere collaboration. A number of enablers help a McT in knowledge creation at the individual and group level. Taking a cue from Nonaka & Takeuchi (1995), it was observed that although the owners do not have an explicit organizational intention, they spelled out their intention orally to other actors in order for them to buy in. Although at a surface level, it might appear to be quite mundane to talk about only profit-related issues, on six occasions it was noted that the owners and, in their absence, their managers shared their vision for an upcoming season with the employees. The second aspect is the individual and group autonomy that prevail in a McT workplace. The supervisors and technologists are at full liberty to conduct their jobs as they see fit. The managers, however, conduct some sort of supervision but they do not micro-manage. In general, a level of respect for the older supervisors and technologists or workers prevails, which helps the work team stick together and accomplish the job.

Table 6.1: Knowledge conversion modes and actors' interactions.

Items	Knowledge conversion modes			
	To tacit knowledge	McT actors' interactions and roles in knowledge conversion	To explicit knowledge	McT actors' interactions and roles in knowledge conversion
From tacit knowledge	Socialization	<ul style="list-style-type: none"> • Usually, actors in C-1, C-2, and C-3 socialize among themselves by meeting with each other during work and off-work hours. Additionally, workers and owners have associates they also meet periodically and with whom they share their experiences about business • Actors at C-4 and C-5 do not often socialize with C-3 actors; however, some sort of interaction exists between them and C-1 in the form of formal meetings. 	Externalization	The actors at C-2 levels set rules for the actors at C-3 levels; however, most rules are oral and there are few written materials available where diagrams are shown or work procedures are mapped.
From explicit knowledge	Internalization	<p>This is 'learning by doing' and here the actors at C-3 do what they are instructed. They also learn the rules at a particular workstation. They also share their knowledge with others.</p> <p>Learning and sharing happens across the board, where supervisors and technologists share their experience (i.e. tacit knowledge) with others. Since there is no formal training system available, knowledge generation that takes place both at the horizontal and vertical levels are internalized by the actors as they continue their work day in and day out.</p>	Combination	<ul style="list-style-type: none"> • Meetings take place between C-1 actors and C-5 actors and C-1 actors receive information from their associates. Through this process, knowledge is generated and passed down to other actors at C-2. • Knowledge diffusion is carried out through oral instruction and on-site supervision by the actors of C-2. • It is worth noting that despite the presence of any written materials in terms of a guideline, a system exists in McTs where various actors work in perfect synchronization with others. At the end of the day, it is teamwork that delivers the product on time and workers learn through their mistakes. • Thus, the collection, combination, and dissemination of knowledge among the McT members take place spontaneously.

(Source: Nonaka et al., 2008; modified.)

6.2 Roles of Organizational Routine in Knowledge Management (KM)

In practical terms, a McT creates the practice of executing or implementing a strategic task, which is to deliver a product securely through a contract from a buyer. This task comes with numerous challenges in the form of time constraints, quality assurance, quantity management, and standard maintenance. Once the actors at C-1 examine the challenges at hand (i.e. the problem), they devise a strategy to deal with it. The future strategy (i.e. problem solving) is designed based on previous and current levels of knowledge about the availability of raw materials (skins/hides), workers to carry out processing, available storage facilities, etc.. This design makes knowledge useful through solving organizational problems.

The management assess current routines in procurement, production, and delivery and decide whether it is essential to make changes to routines in some of the above-mentioned aspects. Routine is at the heart of manufacturing because it makes operations smooth and efficient, yet McTs are also knowledge-driven organizations that always take into account changing circumstances and implement changes in routine to innovate. In this case, it was observed that the McTs under study made seamless transitions from an old routine to a new routine when this was seen as necessary for its survival. For example, when a major policy change came into effect in the 1990s that banned wet blue exports,⁸ the McTs redesigned their production and delivery routines to cope with the change. In a sense, this led to innovation, creating other ways to survive in the business, although it was disruptive to organizational operations. Again, as of now, all the McTs are undergoing a transition in terms of relocation and as some have already relocated to Savar, they have innovated their business routines again to adjust to the realities at Savar (in terms of labour availability, access to backward linkage facilities, chemical availability, etc.). Thus, it can safely be concluded that organizational routines are developed based on strategic decisions of management teams (mostly owners in the case of McTs) and routines are also a kind of knowledge as they contain the method of operation/solving a task/problem. Nevertheless, as seen in this study, there is no one way of doing things and McTs continuously modify their routines to adapt to changes. One might not be very reassured when seeing the same routine repeated at the C-3 level day in and day out, yet a deeper look reveals that in order to remain competitive, McTs change production and procurement routines

⁸For details see Hasan, R. (2017): “Types of Leather Exporting from Bangladesh.” (Retrieved from <https://www.linkedin.com/pulse/types-leather-exporting-from-bangladesh-ruhul-hasanon> 19.09.2018.)

regularly. It is relatively easy for McTs to continuously innovate since there is no rulebook they need to adhere to, there is no bureaucracy to seek approval from, and if actors at C-1 and C-2 decide to make changes to the routine based on available knowledge, they can do so almost instantly.

6.3 Knowledge Management (KM) and Resilience

This study confirms that McTs manage their tacit knowledge innovatively to survive in changing global-local circumstances. Globally, the demand for leather has declined in recent years due to increasing buyer awareness about the source country's conditions and since the tanneries in Hazaribagh are the worst polluters, they face enormous challenges in selling their products directly - hence the proliferation of buying houses. Nonetheless, although demand in the western hemisphere is declining, Brazil and China are purportedly considering relocating some of their production to Bangladesh in the future. On the local front, government and NGOs relentlessly pressure the tanneries to move out of Hazaribagh to spare the rest of the population living in nearby areas from being exposed to severe pollution. Nevertheless, in the midst of these impending changes, McTs still manage to survive and make profit. Thereby, it can be concluded that they know how to remain resilient. It is only natural that these research participants were not fully conscious about various ways they employ tacit knowledge. Rather, they are aware of five aspects of doing things on a daily basis. It is also noted that they were very confident about knowing their tasks. These are: "declarative (know-about), procedural (know-how), causal (know-why), conditional (know-when), and relational (know-with)" (Zack, 1988, cited in Alavi & Leidner, 2001, p. 17). All the actors in Figures 6.1 and 6.2 know about the job at hand, what are their stakes in it, and about loss-profit dynamics. They know how to produce leather while maintaining the quality set by the buyers or his/her representatives. They know why they need to procure raw materials from a particular region based on the demand and why they need to manage logistics. They know when to procure and when to process. Finally, they know their co-workers, association members and other team members intimately through personal interactions. These capacities thus help them to be resilient and deal with changes effectively.

Unbeknownst to me, it was revealed from this research that McTs might unknowingly follow some of the principles of 2017 Nobel Memorial Prize winner in Economic Sciences, Richard Thaler's theories related to behavioral economics, of which two important concepts relate to

uncertainty and the limited rationality of human beings. Briefly, he emphasizes that we should reconsider our views on “Homo Economicus, that mythical species of purely rational hominids who dwell exclusively in the models of classical economic theory...” rather, “...mankind was afflicted by emotion and irrationality, which influences their decision making on everything...” (Thompson, 2017). This is in line with the influence of tacit knowledge because I found that when the owners faced difficult situations in terms of the investment or procurement they relied on their personal connections and decided emotionally rather than rationally. All of the owners responded that it was their gut feelings they use when deciding whether to take on a contract and make profit. They simply do not use any tools to forecast markets, analyze buyers’ preferences, or estimate their affordability. They just decide on whether they think they can do a job – reflecting the absence of a rational decision-making process. This was further substantiated by the fact that many new generation owners who have business degrees (MBA and BBAs) failed to run their tanneries and eventually quit the business. It is possible they wanted to do business rationally and failed. Thus, it was seen that a positive correlation exists among resilience-management of tacit knowledge-irrational decision-making.

Three aspects of Thaler’s theory might also be contributing positively towards McTs’ resilience. First is the “endowment effect”, which comes from a sense of ownership, meaning people place a higher value on what they already own. In other words, “...aversion to losses can explain why people value the same item more highly when they own it than when they don't...” (Official website of the Nobel Prize, 2017). Such an effect was observed in the McTs as the owners were found to value their assets (that includes their workers) so much that they try their best to innovate and survive. They feel responsible for their workers and they are cautious about taking risks as they do not want to jeopardize people’s lives. On some occasions, the respondents informed that some McT owners did not take contracts if they felt they were too risky to deliver; they would even go without any contracts in order to avoid risks.

Second, more information does not always lead to better decision-making as McT management teams decide and act with very limited information by today’s standards. As described previously, the most valuable thing they use to gather information is a cell phone (and these are not even smartphones) and they process information by conversing with each other. Again, the management team is not highly confident about the ultimate profit or the risks involved in project delivery. They just believe they can deliver on time and that is all. Sometimes it appeared that their apparent reluctance to know more might be impacted by their faith in God.

Third, a sense of “fairness” shapes owners as well as workers’ perceptions of working hard to deliver projects. On the one hand, it was observed that almost innately the workers

could rationalize whether the salary they were promised/given is fair or not. On the other hand, the owner also considers how fair it is to maintain their profit margin. It works both ways and since a sense of fairness prevails in the system, the McTs become resilient. It is important to mention that in the Bangladesh context, labour unrest in tanneries is extremely rare in comparison to the RMG sector and one of the reasons why is because the owners successfully maintained a fair environment at their workplace.

Chapter Seven: McTs' Challenges in Managing Resilience – Navigating the Troubled Waters

McTs face numerous challenges at the grassroots level to survive in the business. For example, China, Vietnam and Brazil, which are referred to as the three giant leather-exporting countries, are reducing their leather-related productions in their own countries due to increasing labour costs and are contemplating shifting their businesses elsewhere. Naturally, this development is providing hope for my respondents about the future of this business in Bangladesh.⁹ However, the respondents concurred that McTs have faced challenges in various forms since their inception. The two most important sources of such challenges are structure and agency. While discussing structure, the economic and social structure were referred to within which these McTs operate. For example, to run their businesses, McTs are heavily dependent on both local and overseas buyers. These buyers not only provide them the initial investment required to procure raw hides and skins, but also enable them to process these to a finishing standard. In terms of the social structure, job availability, managing operations locally, and sustaining business, making a life for oneself through this business is as challenging as ever.

In this chapter, challenges affecting the McTs are discussed in two broad categories, challenges at the macro- and micro-level. Within the macro-level challenges, assimilation and diversification issues, compliance-related issues, the absence of a knowledge-based support system to enhance work efficiency, and unstable growth are discussed in detail. At the micro-level, challenges due to the local and political environments, historical episodes and their challenges are illustrated. This is followed by a discussion about overall government policy incoherency regarding production, finance, and export. Finally, what the future holds for the McTs in Bangladesh will be elucidated.

7.1 Challenges at the Macro- and Meso-Level

Challenges are abound for the McTs because of the simple fact that they are technically small and thus they have to remain dependent on a number of sources for their survival. From an economic perspective, when the relocation was ordered, the big tanneries were able to buy enough spaces in Savar to continue their business while the McTs could not do the same since

⁹ For details see Husna, A. (2015): “17 Facts You Should Know About Bangladesh Leather Industry.” (Retrieved from <http://futurestartup.com/2015/08/23/17-facts-you-should-know-about-bangladesh-leather-industry/> on 20.09.2018.)

they did not have sufficient working capital to invest at the new place. From a social perspective, the big tanneries can afford to offer housing and other facilities to their employees while the McTs cannot. Nonetheless, although my respondents seemed to be pessimistic while mentioning the host of challenges they have had to endure over the past years, they have continued their business and made profit. They replied that this was only possible due to their hard work and support from God.

7.1.1 Resilience-Adaptation

Assimilation has remained a principal threat to the McTs since their inception. In the 1980s and 1990s, big tanneries were rare. However, things changed in the late 1990s due to the government's export policy, which created a suitable environment for the big tanneries to open up business. Simultaneously, a number of leather processing factories also opened up and started their own tanneries. Therefore, their dependency on old McTs started to dwindle. As reported, assimilation occurred in three distinct ways. First, upon the founding of medium to large factories (meaning factories which have the capacity of processing, value adding and direct selling to external buyers), the demand for finished leather for McTs started to decrease. In this process, McTs also started to face competition from these factories in terms of seasonal labour availability, storage capacity, and purchasing ability. Between the 1990s and 2000s, the participants reported that over 150 McTs had to close their businesses because their businesses were subjected to enormous pressures from the large factories. Second, land encroachment grew over the years, forcing the McTs to group together and share the same resources such as factory spaces, storage spaces and transport machinery. Third, in the past, McTs could sell their finished products directly to overseas buyers, but due to the government policy, they started to lose their direct buyers, with a few exceptions. This condition resulted in increased dependency and the mushrooming of local intermediaries who took a commission in the name of managing buyers.

One way to cope with this threat was to diversify McT businesses. This is why the participants informed that they had to resort to selling the by-products of skins to others. For example, these are sold as animal food and some are sold to soap manufacturing businesses. Additionally, McTs to a limited extent sell processed leather to local small leather businesses, which produce cheap shoes and bags. Over the years, the local market demand for cheap shoes and related materials has increased significantly. They also started to procure materials other than the skins/hides from various locations to keep their businesses afloat.

Four participants, who all have been working for 20 to 30 years in this business and have seen a second generation of owners, brought one important aspect to my attention. This insight is termed as the imposition of corporate culture on micro-businesses by highly educated micro-tannery owners. Mostly, they took over the business from their fathers as part of the family business and were educated abroad or within the country and have business degrees. As higher education has become more available in the country since 2000, business education has seen disproportionate expansion compared to other educational sectors. As a result, some of the McT owners' sons received their business education from these institutions and took over the helm of the family business. Interestingly, they observed that, instead of doing better (as they are armed with knowledge and expertise), most of them have failed to successfully run their businesses. When asked what could be the reasons for these problems, they informed that the young owners wanted to implement their theoretical knowledge without taking into account the ground realities of the tannery. Four reasons were mentioned regarding their failure to succeed in the business. First, labour management is a tricky business in the McT operation and most of the time it defies textbook definitions of employee management. As the McTs gradually started to adopt the 'job work' model, managing seasonal employees turned out to be the most challenging task – having the right number of labourers at the right moment. Second, balancing between effectiveness and efficiency is a difficult task for the McTs. In many cases, it was reported that to bring more efficiency into the system, the owners often took certain measures that backfired and caused damage in the end. Third, corporate lessons teach to maintain a linear organization so that bureaucracy is kept to a minimum. However, in case of McTs, a certain level of bureaucracy through maintaining leaders/supervisors in between the manager and labourers appeared to be crucial. This happened due to a socio-cultural disconnection that exists between the owner and labourers.

7.1.2 Compliance-related Challenges

McTs face compliance-related challenges on many fronts. However, the three principal challenges come from environment, labour management, and quality control of the products. The respondents perceived that things have improved a lot since the 1990s and they are aware of at least two of the three compliance-related matters (labour and quality control). For example, a growing awareness prevails since then about labour law (in line with the ILO laws), child employment law, and labour health. In fact, since the late 1990s, the businesses were also allowed to have their own labour unions (although not in a fully functional state as found in

developed countries) as a platform to negotiate various aspects of work condition with the owners. Several NGOs popped up which came to educate the workers about their rights. Yet, quality-control-related compliance also improved since newer equipment were introduced in the factories and more trained people started to work in the factories. More are discussed subsequently.

7.1.2.1 Environment-related Challenges

Since the start of McT operations in Hazaribagh, the prime concern raised was regarding the destruction of the environment. On average, 150 tanneries (that includes micro- and medium-sized tanneries) continued their operation, generating 14,910 metric tons of effluent during the peak time and about 9,100 metric tons during the off-peak period of untreated wastewater, rotting animal hides and toxic chemicals which were put daily into the river and surrounding areas of Hazaribagh, causing acid sludge to accumulate alongside the flood protection embankment. One report suggested that levels of chromium, lead, organohalogenes and other toxins exceeding the statutory maximum levels have been found in wells in the surrounding areas (Bhowmik, 2013). This not only affects the Hazaribagh area but will eventually affect the rice paddies and the Bay of Bengal ponds, where prawns are farmed for export.

The above situation is a testament to the past and current situation that adversely affects employees and people living nearby the Hazaribagh area. The government has enacted several laws (for example, the Environment Conservation Act, 1995; Environment Conservation Rules, 1997; Factories Act, 1965; Town Improvement Act, 1953, and the Master Plan for the Dhaka City prepared thereunder; the Industrial Policy, 1999; and the Environment Policy, 1992, which is particularly related to pollution, occupational hazard and safety, dangerous substances and public protection), to curb such practices since 1990. Yet, not much success has been seen for two reasons. Waste treatment facilities for the McTs need a central solution and this is expensive. Individual McTs cannot prepare their own toxic management plants, while the big tanneries can afford it. Once asked, the respondents mentioned their limitations of funds for preparing such facilities. Several government and NGO studies also show that due to the exposure of chemicals to employees, their health condition worsened over a period of time. In most cases, the McTs could not even provide their employees with basic protective gear for use in the factories. Again, the owners reported that they could not afford such things due to fund shortages.

This research shows the paradox of the McTs' operations regarding environmental standard

management. That is, the owners always give excuses about not having adequate funds to install some machinery to treat chemical waste, while it appeared that they donot care about the health and wellness of their employees. This situation is directly related to the labour availability (i.e. the labour supply is greater than the demand) and that might motivate the owners to care less about their employees. Additionally, the government does not have proper environmental protection agencies to enforce environmental laws and in many cases the McTs take advantage of this slackness in enforcement. Corruption is another factor when enforcement issues arise as was reported by a few respondents (employees) who stated that with the speed money the owners often try to manage any fines incurred due to environmental standard violations. This inherent challenge remained in Hazaribagh, but things willbe different at Savar, where a central waste treatment plant is prepared to take care of the industrial waste.

In 1992, the pioneering Bangladesh Environmental Lawyers Association (BELA) was established by Dr. Mohiuddin Farooque and worked as a lead NGO to bring the environmental degradation of Hazaribagh to the notice of the government and judiciary (Shakil et al., 2016). For example, it filed a Writ Petition against the government in 2003 stating the obvious, “Failure to perform statutory public environmental duties on the part of the respondents and inordinate delay and negligence in arranging for relocation of the tannery industries/units operating in the Hazaribagh area of the Dhaka Metropolitan City to combat the adverse effects of pollution caused by the tanneries in the Hazaribagh and surrounding areas under the Police Station - Lalbagh, Dhaka” (Environmental Law Alliance Worldwide, 2003). Since then, BELA has been the front-line NGO that brings the environment-related concerns of the tanneries in Hazaribagh to the forefront. However, in the past, the United Nations Industrial Development Organization (UNIDO) has also intervened to help in taking up environmental degradation mitigation measures in general and to reduce chemical waste in Hazaribagh in particular. Inanother aspect, the Central Bank has directed the factories to become green-certified by the US Green Building Council (USGBC) or by the Leadership in Energy and Environmental Design (LEED), which had not taken place at the period of this research. In addition, the European Union (EU) supported an initiative titled “Introducing environmental management systems and eco-labelling schemes” for the leather sector in Bangladesh in general. One of the owners informed how the external agencies started operating in Bangladesh in the leather sector:

“There has been an influx of a highlighted environmental consciousness prevailing in and around Dhaka city for the last decade that has included environmental activism both by individual and NGOs, consumers, media and regulations. All these efforts at the macro-level

are geared to stop environmental degradation and these are noteworthy – at least they appear so from outside”. (Respondent7, owner of tannery ‘G’)

This points to the fact that owners also lack knowledge in terms of environmental impact of their tanneries in the area. However, neither any respondents nor I observed any concrete steps that were taken by any agencies to give McT owners an alternative so that they can find a way to avoid the pollution. This is a paradox again between the macro- and micro-level initiatives to save the environment because, on the one hand, McT owners felt that they should stop harming the environment, while on the other hand, they do not have any practical measures, instruments, or systems in place to curb pollution. McT owners seem to have interest in the environment, yet they said they are helpless. The only solution they have is to shut down their operations. However, this is not a realistic proposition since these McTs provide employment for thousands of people. Once one of my respondents stated:

“Since neither the NGOs, consumers or government came out to help them financially and technologically to stop the factory pollution, they had no alternative but to continue their operations as usual.” (Respondent8, owner of tannery ‘H’)

The above mentioned quotes support the fact that there exists a missing knowledge base of owners and this could have resulted due to the lack of interest from the owners, lack of support from the government, and last but not least a lack of enforcement mechanisms. However, there were exceptions noted as some NGOs started to raise awareness in the employees about the effects of the chemicals they handle in the plant operations and in turn the employees forced the owners to purchase certain protective gear.

7.1.2.2 Quality-control-related Challenges

With the level of awareness among the foreign consumers increasing about the working conditions in the source countries, their impacts are visible in McTs’ operations as well. The buyers who directly purchase leather from Bangladesh started to add more quality-related conditions when dealing with the McTs, eventually squeezing them to supply chain traceability.

Once asked, the McT owners shared “...we can feel the pitch of quality-control-related challenges for some time and as a result we had to up-grade our factory equipment and we are now enforcing quality control more earnestly as it impacts our business continuity...” (Respondent 9, owner of Tannery ‘I’). However, improper curing of leather from the source creates quality raw materials constraints and has direct consequences on increasing overhead

costs and impacts the labourers, as they are pressed to work long hours sorting and ensuring the quality of the products. Similarly, one respondent quoted:

“We have to rely on the purchase power of customers because if they sell their products at a high price and buyers can still buy them, then there is a ripple effect, as the benefits will trickle down to make improvements to employees’ health and working conditions in the tanneries.” (Respondent 10, owner of tannery ‘J’)

In this regard, another respondent shared the following: “The fact is that foreign buyers and companies’ insistence on maintaining standards has had a positive outcome by improving the conditions in the RMG sector, but in many respects the tannery sectors lacks it as no such pressure exists there.” (Respondent 11, owner of tannery ‘K’)

This begs the question, why buyers from the same countries seem not to be willing to put pressure on tanneries to improve their workers’ health and safety and environmental conditions as opposed to RMGs. In this regard, one owner’s comment was poignant, as he stated that:

“We see a lot of European, Chinese buyers coming to buy our products. On many occasions I told them that why don’t they do something to improve the tannery conditions. I also told them, we buy your chemicals, we comply to your production guideline but still you say we are not hygienic. So why don’t you give us hygienic chemicals and you know that we can use vegetable methods for tanning and you just have to let us use them.” (Respondent 12, owner of tannery ‘L’)

7.1.3 Challenges related to Government Policy Inconsistency

In the Bangladeshi context, more often than not, changes in policy occur without adequate stakeholders’ consultation. Although some might argue that there are workers’ and manufacturers’ associations which are entrusted with the obligation to negotiate with government agencies to find suitable policies that help all the stakeholders continue their businesses, the on-ground reality tells a very different story. During the fieldwork, all the owners reported that they suffered significant production and marketing loss due to a change of government policies which were drawn without much of the stakeholders’ consultation and compensating McTs for their losses. As such it is incumbent to highlight the important policies and its impact on McTs over the past three decades.

The following analysis, which was carried out from sets of already published research studies, illustrates the context of the policy change as well as its impact on McT operation. The primary reason to consult these studies is rooted into the fact that McTs have less capacity to adapt to

policy changes due to resource constraint. As such they needed most of the macro-level support to wade through such changes. For example, let us start with the first major policy change regarding the export ban of wet blue leather in Bangladesh. The government of Bangladesh (through the Committee on the Development of Leather Exports) carried out a detailed baseline survey of the leather industrial sector of Bangladesh in 1979 to 1980 that made a number of recommendations, including a "...return of duty on imported leather processing chemicals for export of crust and finished leather, cash subsidy on export of crust..." (Khan et al., 2015, p. 112). This was followed by the Bangladesh Small and Cottage Industries Corporation (BSCIC) supporting a United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) study in order to identify the leather manufacturing industry as the prime conveyor for the development of industries in Bangladesh and the TIP (Trade and Industrial Policy) reform suggested by the Bangladesh Planning Commission in the mid-1980s. These reports highlighted "...acceptable economic and financial rates of return in the transformation of wet blue into crust and finished leather..." which was again supported by Khan et al. (2015), which further stated that "...the social rates of return is higher than the financial rates in the processing of finished leather for export..." (p. 112). A brief survey conducted from 1989 to mid-January 1990, which was done for the Harvard Institute for International Development's Employment and Small Enterprise Policy (ESEP) project with the help of the Bangladesh Planning Commission, titled "Bangladesh Leather Sector-Strategy for Further Development" recommended, among other things, "...withdrawal of incentives on crust export to assure development of finished leather..." (ibid., p. 111). This recommendation was adopted by the government quite abruptly, resulting in the closure of many small tanneries in Bangladesh.

The next policy change is related to the relocation of Hazaribagh tanneries to the Savar industrial park that occurred in 2002 to 2003 (Rahman, 2012). The Ministry of Industries ordered the relocation of tanneries amid pressure from human rights groups, environmental activists and buyers who were concerned with their hazardous effects on the public health and environment (Environmental Law Alliance Worldwide, 2003). In this regard, the government announced a Tannery Estate of Dhaka (TED)/Tannery Industry Town, which would have 205 plots, 200 acres of land, and 155 industrial units (Ovi, 2017). The government estimated an expenditure of about BDT 6,000 crore to relocate the factories and to start production in the new region. The lead agency tasked with managing the relocation was the Bangladesh Small and Cottage Industry Corporation (BSCIC). The BSCIC, under the Ministry of Industries, signed a trilateral agreement with all the leather/tannery associations in 2003 (i.e. the Bangladesh Finished Leather, Leather Goods and Footwear Exporters Association, BFLLEA,

and Bangladesh Tanneries Association, BTA. The Tannery Industry Town-Savar was slated to be completed by December 2005 (Rabbani, 2009). However, this project was revised to be completed by May 2009 (Shakil et al., 2016).

The new production area at Savar would contain a Central Dumping Yard, a Water Treatment Plant, a Sludge Power Generation System (SPGS), a Common Chrome Recovery Unit (CCRU), and a Sewage Treatment Plant (STP) (Manzur, 2015). This whole relocation process faced serious resistance, not only from the McTs' side but also it was delayed a number of times due to bueraucratic problems. For example, the tender to build the CETP took place four times by government agencies and having failed to secure a proper winner, was awarded to the company (allegedly favoured) of the government's choosing. As a result, the loser of the bid filed a case in court that halted the relocation process for almost six years. However, the case that was filed in the court also mentioned a host of issues pertaining to the relocation process that needed to be resolved prior to relocation. These included a lack of transparency in compensation calculation to tanneries due to relocation, a lack of coordination amongst government, donors, and tanners, a cost that estimated a fivefold escalation of the project cost, no clear picture on how the CETP was to be financed, and a lack of financial resolution on the compensation issues. The High Court ruled in 2009 that by February 2010 all McTs were to be relocated to Savar or they would face shutdown. The relocation plan was again revised and decided for December 2012. A Chinese company was awarded the contract to complete the CETP in 2012, the government again revised the relocation and set it to be completed by June 2016 (Shakil et al., 2016). As of the date of the fieldwork, the CETP was not completed and as per the court order, the water and current lines were cut off and tanneries are being fined on a daily basis until they complete the relocation.

This relocation policy is highly protracted and can be termed as "extreme stakeholder debate and negotiation" that has negatively impacted the McTs in multiple ways (Shakil et al., 2016, p. 131). First, when counting the economic losses and benefits of the three parties (BSCIC, BTA, and BFLLEA), the principal problem centred upon "compensation, CETP cost bearing and other financial aids" on the basis of the government bearing the total cost of the relocation project (ibid.). However, due to the new target date (June 2016) the project cost has soared due to inflation, the time value of money and the price increases in construction materials and technologies. At this point, a host of issues such as compensation packages, the allotment of plots, etc. have not yet been finalized, yet the government went ahead with the relocation plan. The owners unequivocally said that they did not receive the deserved compensation for managing relocation-related expenditures and proper plots at Savar.

Second, one study lists twelve stakeholders that are involved in the relocation process. These are: the European Union, Human Rights Watch, United Nations Industrial Development Organization (UNIDO), Bangladesh Small and Cottage Industries Corporation (BSCIC), Bangladesh Environmental Lawyers Association (BELA), Asociación Cluster de Industrias de Medio-Ambiente de Euskadi (ACLIMA) & Khulna University, Bangladesh Tanners Association (BTA), Bangladesh Finished Leather, Leather Goods & Footwear Exporters' Association (BFLLEA), workers, exposed people, local political leaders, and real estate developers of Dhaka (Shakil et al., 2016, p. 131). This research substantiates the findings of this report as the McT workers are the most affected stakeholders (group) because it is their principal livelihood and they will be powerfully affected economically during and after the relocation. McT employees are physically victimized by the delays in policy implementation and subjected to a threat to their livelihood. Importantly, a complex conflict of interest among at least four stakeholders (owners, employees, real estate fortune hunters and local politicians) was observed. One group of stakeholders did not want to relocate while the others wanted the McTs to be relocated as soon as possible. The respondents also pointed to the political interference involved in the relocation as local political leaders did not prefer relocation. Lobbyists employed by tannery owners also impacted the time of the relocation.

Third, the social dimension of relocation could be profound for the McT owners and employees. People have lived in and around Hazaribagh for four to five decades now and they have created social, economic, cultural, and commercial networks there. Additionally, the backward linkage industries that have been set up over the years will likely vanish due to the relocation. Casual labourers are the most highly impacted group (those who mostly work using the 'job work' model) who live in and around the Hazaribagh area and they cannot afford to move to Savar. In this fieldwork, it was noticed that boarding infrastructure, mosques, shops, and schools have not been set up in Savar to support the relocation of thousands of people from Hazaribagh. At some point, it was learned that some tannery owners use rental buses to shuttle their employees back and forth from Hazaribagh, which increased overhead costs at a significant level. The supervisors who manage casual labourers mentioned that they have not been able to marshall labourers at the Savar area so far to support operations in a tannery. It appears that the McT workers understand that infrastructure at Savar could not be made available under such short notice; however, they were frustrated about the delays that occurred in between, causing them to be caught off-guard. Since 2002 to 2003 they have been assured that nothing would happen by the owners and suddenly, from 2015 onward, they have been pressured to move out. If they would have been made aware that they would have to relocate

back in 2002 to 2003, they would have gradually prepared for the move. The workers reported that many would have left the industry and found jobs elsewhere by then.¹⁰

Within the span of the fieldwork, it could not be determined exactly how many McTs had actually relocated from Hazaribagh to Savar. Nonetheless, no more than 60 to 65 McTs moved out on ground. The respondents referred to a matter that needs attention in understanding relocation-related challenges, which is that McT businesses are often tied to the creation of local networks. For example, in Hazaribagh, the business used to be run centring around Dhaka Tannery – one of the oldest centers of the tannery business (more information is provided at the end of this chapter). At Savar, such a center has not been established as of yet. This has been a traditional way of doing business in the past, where a small firm typically relies on a big firm for a number of reasons such as: to manage their finances (capital management), to get jobs the big firms do not want to do themselves, connect with buyers, and to get psycho-social support to remain worry-free in the business environment. It will take years for them to again create a network at Savar, which will have negative impacts on production, security sales, and the procuring of raw materials.

In addition to oft-quoted challenges such as a lack of a Common Facility Center (CFC), SME cluster development, branding/promoting Bangladeshi leather products abroad, and the backward linkage industry for chemicals/accessories¹¹, this study reveals three policy-related inconsistencies prevailing in the McT sector that impact the McTs' growth and sustainability as shared by the participants. These are illustrated subsequently.

First, McTs are undergoing a crucial transition at this point as a result of the relocation. Recently, the government and judiciary have taken a firm position to finally close all the tanneries and affiliated businesses from Hazaribagh. However, the relocation policy is not a comprehensive one that would allow the three primary stakeholders to mutually resolve their issues (i.e. the owners, workers, and buyers). Not only has the time lapse in the relocation threatened the overall livelihood of the workers. One study at least concluded that the decision to relocate to Savar was highly political. Here is an excerpt from the study:

“The results prove that the project’s target of ensuring environmental sustainability will go in vain because launching and executing this project was merely a political decision, which did not take into account any of those scientific arguments. The upstream location of Savar violates

¹⁰These information were gathered during the research interview and a series of informal dialogue with the workers and technicians during research fieldwork.

¹¹ For details see Sajib, S. A., Hossain, R. & Z. Tanvir (2016): “The leather and leather products industry is in the brinks of huge growth possibilities.” (Retrieved from <https://www.textiletoday.com.bd/leather-leather-products-industry-brinks-huge-growth-possibilities/> on 21.09.2018.)

the agricultural land use as a flood flow zone with flood retention facilities proposed in the Dhaka Structure Plan. This also risks the pollution of the entire surface water sources of Dhaka. The argument of relocating the leather industries to a fringe location proves to be invalid in light of the historic growth trend of Dhaka. 82% of the surveyed leather industry owners is neither willing to move to the proposed location nor willing to pay for the relocation and the effluent treatment sanctioning at the new location. 18% is willing to move under the conditions of expensive subsidies, compensations and government provided effluent treatment facilities...The proposed redevelopment plan of Hazaribagh brown field to a mixed use area after industries' relocation poses further threats to the human health and calculates high hedonic price of the houses..." (Bhowmik, 2013, pp. 1-2).

Such an unsynchronized relocation also left the owners' ability to secure contracts with buyers completely up in the air. The relocation policy also did not take into consideration the social impacts of moving thousands of skilled and semi-skilled people to Savar. McTs at Savar are facing and will continue to face a dual challenge: a lack of skilled employees at the new location and a lack of infrastructure at their disposal to conduct business at full scale.

Second, financial help for the McTs to ease the relocation was not comprehensive and only the McTs are victims here (since the big tanneries have the capacity to absorb shock). Government instructed the financial institutions such as banks to help out the McTs by relaxing their loans, yet McTs need more than credit relief, since by now they have lost a substantial number of their overseas clients. As of the time of this fieldwork, the government and McT owners were still negotiating the monetary settlement. Further, the Chinese company is yet to hand over the finished ETP to its users.

Third, a coherent policy approach was not adopted either from the government or other agencies to rehabilitate the workforce from Hazaribagh to Savar, which has resulted in job losses and potential operations halts for McTs. The Savar area is an industrial hub of Bangladesh as hundreds of RMGs and other factories are already in operation near the vicinity of the planned Tannery District and as such these have already consumed the lion's share of labourers and new tanneries will not be able to find an adequate number of labourers for 'job work'. However, this is not the case for the big tanneries as they transferred their workers and housed them in a nearby township. Since McTs depend mostly on 'job work' and lease out machinery from bankrupted factories, they will be hit hard as they want to continue their operations.

Fourth, in the past, it was observed that government agencies were prompt in imposing fines for the McTs if they violated environmental or labour laws. However, a coherence policy never addressed how these McTs would be able to procure raw materials with relatively fewer problems, store and transport them to Dhaka, and find a buyer and sell them.

7.1.4 Foreign direct Investment, unstable Growth, and changing local circumstances

Foreign Direct Investment (FDI) in the leather sector (including tanneries) is limited despite a report that highlights why investment in the leather sector in Bangladesh is attractive.¹² One study shows that, in 1996, the FDI in this sector was 5.3 million USD, but this number dropped to 0.7 million USD in 2005. However, it gradually increased to 7.2 million USD in 2009 and to 10.5 million USD in 2010. Out of eleven sectors it was third last in terms of attracting FDI (A. Rahman, 2012, p. 30). Although major importing countries of Bangladeshi leather and leather products and footwear (2012 to 2015) include eight nations (based on the volume of import) - Germany, China, Japan, USA, Spain, Italy, France, UK and UAE, all these importing countries have invested hardly any funds in this sector (except for China). Another report shows that at least 51 foreign companies have expressed interest in establishing joint-venture footwear units in Bangladesh. One Chinese-Bangladeshi joint venture plans to invest \$ 21.5 million in a new footwear plant that will employ over 3,000 workers (Suryaningrum, 2012).

The tannery sector has witnessed a period of unstable growth over the past several decades. For example, a UNIDO-sponsored survey of the tanning industry as a sub-sector in 1983 revealed that the installed capacity for wet blue leather was 171 million square feet against a total accessibility of 100 million square feet of hides and skins (Winter, 1983, cited in Khan et al., 2015). This is typical of small business sectors in Bangladesh as the proliferation of any small business occurs if one of them has become successful. Success triggers competition among others who end up opening similar businesses, assuming that they will also do well. In addition to family-owned McTs, the respondents said that they have witnessed the opening of a number of new tanneries since the 1990s. The absence of any regulatory body in Bangladesh to monitor the growth in this sector further compounds the matter. As the tanneries grew in number, so did the demand for raw materials. Concomitant of the changes related to demand and supply, the respondents informed that from the suppliers' side the quality of skins/hides

¹²Leather Goods & Footwear Manufacturers & Exporters Association of Bangladesh (2015): „Investments prospects in Bangladesh leather sector.“ (Retrieved from http://lfmeab.org/images/report/LEATHER_SECTOR_INVESTMENT_BROCHURE_LFMEAB.pdf on 21.09.2018.)

has started to deteriorate. Although this is a highly technical matter, it has a significant impact on business since during the whole process, starting from procurement of the raw skin/hide to it finally being processed as finished crust leather, a certain standard must be maintained (related to the size, texture and tone of the finished leather). The sellers are also cutting corners in the initial preservation of skins/hides by using low quality chemicals and salts. The drop in quality can only be noticed at a later stage of the production, resulting in wastage and a loss of money.

In terms of supply chain management, no quality control mechanism exists at the first step in the process (i.e. purchase). The respondents opined that it is nearly impossible to develop such a system since they purchase skins/hides from all over the country and they rely on human expertise while purchasing them. Consequently, humans may make mistakes and the impact of this is felt at the production level. The McT owners informed that quality is being compromised more often nowadays for two reasons: the sellers of skins/hides started to compromise in maintaining these (i.e. using proper chemical and put in storage facilities) after they procure it and the trusting relationship between a buyer and seller has deteriorated substantially (possibly) due to the notion of making quick profit.

7.1.5 Challenges related to Training, Research, and Development

McTs like any other SMEs produced a good amount of knowledge yet were not able to retain it since there was no conscious effort from the owner's end to retain knowledge. Further, as observed in this research, although the McTs produce a whole range of knowledge, their management and retention are poor. One of the issues that was brought forward during the research by owners was that there were hardly any external agencies available, which could have helped the owners to undertake cross training programs or similar training activities towards 'knowledge management'. Additionally, no deeper exploration was made in terms of researching the needs to be addressed in the future. Given the limited resource base and capacity of the McT owners, the need for external knowledge generating agencies such as KIBS comes into play. In relation to this, scholars noted that "...the importance of knowledge and innovation in modern economies justifies the increasing interest that scholars are taking in studying knowledge-intensive business services (KIBS)..." (Muller & Doloreux, 2007, pp. 4, 5). In broad terms, KIBS provide "knowledge-intensive inputs to the business processes of other organisations" (ibid., p. 4). However, it was reported by the owners as well as by the workers that in the past, two NGOs imparted some training of workplace safety, health issues

and pollution control. However, the chemical technicians receive some formal training nowadays from organizations.

It can be assumed that KIBS could play a significant role in helping these McTs to knowledge creation and retention. For example, the Institute of Leather Engineering and Technology at Dhaka University (ILET) is the only technical education institution in Bangladesh that offers training and certification in leather technology.¹³ It offers four-year undergraduate courses in leather, footwear, and leather goods technology. Recently, the Khulna University of Engineering Technology (KUET) has started offering a B.Sc. degree from its Department of Leather Engineering. Additionally, the Center of Excellence for Leather Skills Bangladesh (COEL) has also started offering training for the skills development of leather workers. COEL is the nation's first institute of its kind. The objective of COEL is to increase and improve the overall skill level of the workforce of the leather sector. The training centre of COEL is situated in Pallibiddut, Chandra, Gazipur, which serves as the hub of COEL's leather skill training programs. For now, this 12,000-square-foot-area has an up-to-date setup to carry out professional training programs for 300 trainees at a time. This is an industry-led public private partnership (PPP) facilitated by the EC-Funded TVET Reform Project, USAID-PRICE, SDC and Iilon in order to enhance workplace learning and productivity through improving the skills of the employees.¹⁴

On many counts, McTs match some of the characteristics of SMEs such as size and employee number and they try to innovate to cope with changes. However, they face a number of obstacles in their efforts to innovate (as opined by one scholar who studied interaction between SMEs and KIBs in developed countries), including: "...1) capital scarcity; 2) management qualification; and 3) difficulties to obtain technical information and know-how required for

¹³ Is the only technical educational institution in Bangladesh exclusively dedicated to the leather industry. It offers four-year undergraduate courses in leather engineering, footwear engineering, and leather products engineering. Aftab Ali Shaikh, director of ILET, told this correspondent: "ILET admits 150 students every year who are equally divided into three streams. The future status of the students of this institute is classified into three categories – 10 percent of the students will go abroad for higher degrees, 60 percent will be employed at different local and multinational leather, footwear and leather product factories, like Youngone, Picard, Timberland, Puma, Decathlon, Nike, ABC Mart, Bata, Apex and others, as quality control officer, technical officer, research officer, product development officer, production manager, merchandiser, factory manager and so on, while the rest (30 percent) may go for government and other jobs, like working at leather research institutes, international testing laboratories (SGS, Bureau Veritas, ITS), and local and international NGOs." (Debnath, B. K., 2017: "Our Leather Industry." Retrieved from <http://www.theindependentbd.com/printversion/details/112906> on 20.09.2018.)

¹⁴Debnath, B. K. (2017):"Our Leather Industry."(Retrieved from <http://www.theindependentbd.com/printversion/details/112906> on 22.08.2018.)

innovation projects...” (Muller, 2012, p. 35). The problems associated with innovation are also tied to “key managerial principals” such as “...efficiency of marketing and R&D and synergies between marketing and R&D...” (ibid., p.35). Here, KIBS can act as an external complementary innovation asset for the McTs by informing the stakeholders about their weaknesses as well as strengths. In this research, I was curious to explore whether there were scopes for KIBS to contribute in the innovation capacity of McTs since KIBS had endogenously developed in capitalism and democratic-economic systems, in terms of “...(i) better integration in the innovation environment; (ii) improved activation of internal innovation resources; and (iii) improved activation of external innovation resources...” (ibid., p. 41).

Similar to a number of manufacturing sectors in Bangladesh, the tannery sector also lacks systemic external support in developing its business and run its operation through research and development. Specifically, neither the government nor the owners actively invest in knowledge generation with the help of outside agencies such as KIBS. Consequently, whatever development has taken place in this sector can be ascribed to two things: a steady increase in leather demand from domestic and foreign buyers, and the closure of tanneries in certain countries such as China. Nonetheless, the respondents mentioned three challenges associated with this apparent reluctance to invest in knowledge generation and its management.

First, the concept of “knowledge” is an abstract term to the respondents because they do not differentiate between their responsibilities (what they ought to do) and instructions (what they are asked to do) to run their daily business. Consequently, they do not think they could do better if they did things differently. For example, the re-arrangement of their factory space (from an organizational routine point of view) and changing workers’ patterns of duties were discussed. They seemed to understand the concept and find value in it. However, at the end of the day, they feel that if they have been able to manage their businesses so far, they will continue to do the same for the future. In this regard, the workers heavily rely on organization routine to perform their assigned tasks that had been set for them and that was developed over the years in their workplace. Although the organization routines have scopes to adapt changes as needed, yet the workers as well as the management team of an McT depend on a workable routine to run their day to day operations.

Second, over the past 4-5 decades, the owners and workers have never encountered any initiatives undertaken by external agencies (including the government) to attempt to understand why they do what they do. Again, this is similar to maintaining a business-as-usual attitude and a lack of drive to innovate. This attitude is difficult to comprehend from the outside because from the perspective of an external observer, this attitude makes no sense. Any business owner

is expected to do whatever it takes to make profit through innovation, yet 80% of the respondents (from the owner category) replied that they are doing well and do not particularly think they have to innovate. However, from the employees' perspective, whatever instructions the line workers receive from their supervisors, they instantly obey them and they find things go well without any problem, further diminishing the need to innovate. Although upon a closer look one would notice various degrees of innovation such as changes in equipment or business models, yet the respondents do not necessarily term these changes as innovation.

Third, knowledge-related improvement and related business practice changes must happen from the top down and the owners are expected to take the lead in reaching out to external agencies to improve their workforce and production. This seldom happens, though most of the workers and technicians reported that when new owners took over a business they tended to employ external parties (meaning external to Hazaribagh area but well within the country) to help them understand how they could improve their businesses. For example, a Scotland-educated son of a tannery business hired a local university team to improve work efficiency and monitor workers performance of his tannery. This approach met with failure eventually. Nonetheless, an overwhelming majority responded that they do not have any initiatives in place to employ a third party for research and development to improve their business.

7.2 Challenges at the Micro-Level

During the fieldwork, I gathered a narrative of one McT worker who has been working in this sector for the last 40 years and explained how he saw challenges in this business. Respondent 13 started as a casual employee at Tannery "Y" immediately after independence. At that time, the tannery was located outside Dhaka, at Narayanganj. A Pakistani person owned it initially and later a Bangladeshi owner purchased it. The new owner decided to move it from Narayanganj to Hazaribagh, where he had his own land and wanted to build a factory of his own. As a young man, he accompanied his team towards Hazaribagh. It was less crowded and the River Buriganga was flowing nearby. At that time, he treated the leather by hand and used to mix salt on the skins directly, without any tools. The number of employees was lower and they had to work from dawn to dusk. He was housed nearby the factory in a small boarding room, which was provided by the owner at a nominal price. After a couple of years of work at this operation, respondent 13 started noticing change. The first thing was the increase in the number of employees. However, by then, he had earned some seniority and started working as a leader of a group in the drum area. He did not understand from where all these people had arrived. The

population of the area became dense and rental prices increased. The amount of income that he was receiving seemed to be inadequate. The next thing he noticed was the change in ownership as the original owner's eldest son eventually took over the operation. He was a young person and came with different ideas to minimize costs, but he did not understand that cost savings do not always yield good profit and often do not help to retain good employees. Many experienced employees at the senior level left. He could not leave because, by then, he was married and did not want to endanger his family life. The next thing he saw was the boom of the industry. For example, when he came to Hazaribagh, there were a handful of factories, but in the next ten years, he saw over 100 new ones open. This adversely affected the environment, as waste was often dumped into the river and surrounding areas. The air quality also got worse. Then came the sudden news that they could no longer export the processed leather directly to foreign buyers. This affected his life because his tannery declared bankruptcy and all of the workers were laid off. It was hard for him for the next eight months. However, he managed to get a job at another tannery due to his reputation. Although the work hours were limited, working there helped him to sustain his family. Finally came the biggest challenge of his life, when he heard that they had to move once again from Hazaribagh to Savar. The news broke straight from the owner's mouth as he called all of them into his office and informed them about his strategy for moving. He also told them that the opportunity for work at Savar is limited due to space constraints and changes in leather processing technology (i.e. Bangla drums to Chinese drums). Although he sounded optimistic, respondent13shuddered inside because he knew that once again his family life would be hampered since his two sons went to a nearby school. He had visited the new location at Savar twice and he was not impressed due to the absence of civic facilities. Moreover, he observed that the tannery space was too narrow. As he spoke to me, I saw a person in his mid-50s who had gone through so many changes in his life becoming wary about the future. Yet, the fascinating part is that he did not leave his workplace (i.e. tannery) that he joined in the past. For better or worse, he thinks he will be able to absorb the changes and adapt. The only thing he informed me about with a long sigh was that his savings become more depleted with every challenge he has to meet in this job.

Once asked whether the participants are willing to relocate to be able to reap the benefits of relocation, 20% of the owners expressed in the affirmative, provided they were compensated accordingly, while the remaining 80% were dead set against the relocation plan. Among the workers and technical persons, 100% were unwilling to move from Hazaribagh to Savar.

In summary, McTs face challenges at the micro-level mainly in two ways: human resource management and working capital, and resource management (for example through bond

capacity). This means the ability of a McT to keep/maintain a collateral to a financial organization (i.e. bank) against which it can import chemicals from abroad. Since chemicals are the most important element in a McT operation, during the fieldwork it was observed that not all McTs had such a capacity. In another way, some of the McTs, which had bond capacity, also stored chemicals and sold them in the local market to other McTs which needed them. Therefore, it could maintain to some extent the essential ‘cash flow’ for its survival. The micro-level challenges for McTs are elaborated subsequently in the following paragraphs.

7.2.1 Challenges related to Human Resource Management (HRM)

Although there is no established human resource management system in place for the McTs yet, the owners and some of the core staff manage their human resources quite innovatively and effectively. According to records from the Bangladesh Tanners Association (BTA), about 3,000 workers are employed in the tanning industry (Burnard & Bhamra, 2011). In addition, there are about 100 qualified technologists, including foreign nationals who are also employed in different tanneries. Mostly a world of men, three categories of manpower are at work in a typical McT: 1) core staff – managers and logistics workers; 2) core staff (technical workers and engineers) – chemical mixing workers; and 3) casual labourers. In addition, some owners manage some *Jachondars* (i.e. middlemen) at remote areas, from whom they purchase skins/hides. This is not a strict employer-employee relationship, as an informal management relationship exists between an owner and a *Jachondar* and much depends on the purchase season because the *Jachondar* ensures the purchase at a reasonable price and a high quality of the skin/hide. Within the factory, although the owner and employee relationship is a centralized system, it was observed that owners often follow a decentralized management system in managing day-to-day operations.

Typically, a drum man gets 300 BDT (3.00 Euro) for Bangla drum operations, and 400 BDT (4.00 Euro) for China drum operations. As a drum man, a casual employee gets a maximum of 700 to 800 BDT (7.00 to 8.00 Euro). A grade above are the hydraulic drum operators, who get approximately 1,800 BDT (18.00 Euro) if they have experience. Most casual employees are those who work as a day labourer and get 300 to 350 BDT (3.00 to 3.50 Euro) per day.

Salaries in the McT sectors are gendered. For example, women get 3000 to 4000 BDT (30.00 to 40.00 Euro) in a month by working twelve hours a day and seven days a week. It was observed that children who worked here also received salaries at this scale. The salary of permanent staff vary and in most cases technicians and engineers get 70,000BDT (706.00

Euro). Another challenge that seems to affect the management is finding adequate numbers of workers when ‘job work’ begins. In relation to this, a separate class of managers came into being who are called labour leaders. Their basic job is to find seasonal labourers and book them for a particular McT during the peak job period.

Another phenomenon noted in the HRM is the use of child labour. For example, it was observed that a substantial number of children aged 13 to 17 years work in the McTs. The troubling part is that many of these children work the night shifts and attend school in the morning. They are also beset with all sorts of health problems and more often than not are malnourished and unable to concentrate in class. When asked, the McT owners seemed to feel sympathy, but they said they had little control over this issue as they are seldom aware of their presence. These children mainly work as a proxy for their parents or elder siblings. It appeared that some McT owners turned a blind eye to this matter and they seemed to be content as long as they have their product ready for delivery on time.

Bangladesh’s Labour Act (2006)¹⁵ states that factories should have adequate lighting, safe drinking water, separate washrooms (for both males and females), and precautions for possible accidents to make the workplace safe for workers. However, managing employees’ health remains a challenge for all the owners. On-ground observation confirms that no systematic plan or procedures are in place for taking care of employees’ immediate health issues. In most cases, it was found that workers did not have sufficient space for movement in their work area, since the machinery is installed in a heavily congested way. Workers were also observed taking their food inside the operation unit as they do not have separate food corners. The leather processing zone where chemicals are mixed was not cleaned either in the morning or evening time.¹⁶ This begs the question, whether the standards were fulfilled or not, since there was no control system in place? It was clear that certain standards were not followed during the operation and the owners informed that they wish they could follow, yet due to resource and capital constraints they could not.

There is no denying that the nature of the tannery operation (toxic chemicals are used in processing the skins/hinds) requires full-time chemical experts and medical team members to handle medical situations. Despite this, none of the McTs in this study had a dedicated medical assistance team, although some have taken chemical experts. Interestingly enough, a first aid

¹⁵ For details see “Bangladesh Labour Act 2006” (retrieved from <https://resource.ogrlegal.com/official-english-translation-bangladesh-labour-act-2006/> on 20.09.2018).

¹⁶ These information came from participant observation made during a number of visits to the tanneries at Hazaribagh.

box inside the operation plants in tanneries could not be found.

A common complaint of stomach aches from some labourers was noted, which is possibly related to sodium bisulfite contamination. A news report showed that workers carrying formic acid containers openly without any protective cover, which can cause oedema and subsequent lung failure.¹⁷ The prevalence of such health issues was also confirmed during the fieldwork. They are essentially left to themselves to deal with this issue. One participant informed that he had heard many times that the government is taking steps to close down tanneries which do not take care of their employees, but they never do. One respondent told me that they often hear about people losing fingers or getting hurt but never receive any compensation. When the owners were asked why they do not care about their employees' health, they initially resisted to give a clear answer, placing the blame on their lack of affordability. When pressed, they informed that they could spend more money on health and safety, but it would increase overhead costs and eventually impact labour salaries. So, they chose not to invest. Rather, they pay more money to their employees so they can take care of themselves. This seems to be a problem because when health and safety are left to an employee – a person who has to live on a small amount of money – he/she will seldom take care of their health issues by spending their own money. In addition, health and safety enforcement are very poor and owners are always able to get off the hook about health and safety matters. Owners seldom provide boots or protective gear to the employees and it was learnt that some of them purchase such equipment on their own. In the peak time, some seasonal workers informed that they start at 7 AM and sometimes work until 3 AM the next morning.

The major challenge the McT owners face in terms of managing employees is managing the high turnover rate, meaning people keep switching workplaces as they find suitable opportunities elsewhere. The most transient group is the chemical workers/technicians and they are considered a rare commodity. Owners and tannery managers commented that they have seen a significant change in their casual workforce over the last decade. In the past, the casual workers used to stick to one tannery for years, but now things are changing and most of them are able to find jobs in different tanneries due to the advent of the 'job work' model. They also informed that there has been a similar transition for engineers and chemical experts, though this has taken place with less frequency, yet the turnover seems to have increased over the past seven years. This trend might be related to two positive factors and one negative factor: 1)

¹⁷ For details see Renton, A. (2012): "Bangladesh's toxic tanneries turning a profit at an intolerable human price" (retrieved from <https://www.theguardian.com/global-development/2012/dec/13/bangladesh-toxic-tanneries-intolerable-human-price> on 20.09.2018).

Work opportunities have increased, signaling that the tannery business is doing well despite external pressures. 2) More skilled/trained persons are getting into the business (for example, graduates from the Leather and Textile University are coming into the business in greater numbers). 3) Due to the limited growth of McTs, most of the skilled employees are leaving (some referred to the booming RMG sector). In this study, qualitative data analysis (respondent as well as participant observations) shows that employee turnover has a negative implication in terms of the McTs' growth. Since the McTs are traditionally knowledge creators such frequent turnover causes poor knowledge retention as experienced workers leave the factories. Whatever knowledge was created is eventually lost. Additionally, the precariousness of employment was also observed, as it was learnt that only a few workers signed an actual contract with their employer and half of those respondent (employees) have no proof of their employment relationship with the employer.

The next challenge is to prepare workers for multiple jobs, which is related to the lack of multi-skilling facilities. Since the new employees do not receive any formal training as they are expected to learn through on-the-job training. This approach is highly subjective as it depends on a willing trainer with high motivation and strong skills, which is often not the case. Further, there is no off-the-job training and as such, the workers remain worried about their job performance and can neither spare time nor focus on learning other than what they are told by their supervisors. Since the tasks of the workers are specific and fixed and no job rotation in the factory takes place, they do not have knowledge about others' jobs. When asked, the owners replied that they were aware of the issues and they wished they could train all the workers up for all the jobs in the factories. Nevertheless, given the limited scope of job type, they had no additional resources to improve upon the current situation. A point to note here is that lack of ability to do job rotation does not preclude the owners hiring the requisite number of workers to run McTs operations. This only refrains them to reap benefit from 'cross training'. For example, if one worker is absent then the other could fill the spot in order to keep a McT operation unhindered. However, given the condition of cheap labour in and around Hazaribagh, it was observed that a substantial number of workers were always available to work in all the sections within a McT.

It is further noted that a lack of civil defense training and related safety measures exists and both the owners and employees are not trained in how to deal with potential disasters (both manmade and natural). Although owners reported that some employees have received civil defense training to manage disasters caused by earthquakes or floods, it was observed that the tanneries do not have any precautions to manage accidents caused by fire or chemical spillage.

Most of the McTs have no fire exit or emergency exit and seldom did I find a fire extinguisher or fire bucket on the factory premises.

The workers mentioned four active trade unions in Hazaribagh, the most prominent of which is the Tannery Workers' Union, which claims to have over 2,500 members. Seeing the high membership, it was inquired about the benefits of being a union member, and most of them replied that they were unaware of the benefits of joining a trade union other than occasionally gathering to discuss government policies and owners' responsibilities. However, during the last two years, they were found to be relatively more organized while arranging protests against the relocation. It should be mentioned here that in comparison with the RMG sector in Bangladesh, the tannery sector labourers are less politically active and thus less anarchy in this sector was noticed.

7.2.2 Challenges related to Financial Capacity Management

Issues with working capital management area major challenge the McTs regularly face. As mentioned in Chapter 5, capital management sometimes becomes challenging since a large part of the business depends on the buyer's willingness to advance the capital. Although banks provide small- to medium-scale loans, the owners often feel the credit crunch. However, given the difficulty in managing capital, the respondents were asked why they did not find some other ways to access funds and it transpired that access to the market and a lack of awareness regarding the importance of marketing tools is a prime reason. Most of the McTs rely on their relationships with a fixed buyer (either locally or abroad) or they rely on buying houses, which brings orders from overseas buyers grabbing a health commission.

McT owners do not use communication tools, as such they are not aware of the changing market in the leather industries across the globe and they remain content with whatever they can manage at present. This resulted into a persistent knowledge gap in marketing or symbolic knowledge of other global markets. However, I observed that this gap is being filled by middlemen who contact overseas buyers and arrange a purchase deal. McTs do not possess any retail spaces to display their products. Consequently, they sell their products based on an established agreement. The bottom line is that McTs have no capability or resources to invest in marketing. Many owners reported that they manage working capital by borrowing from informal investment sources at a high rate of interest.

Government has extended support and provided incentives to the tannery sector in a number of ways so they are better able to manage their finances. For example, it enjoys duty-free imports

for all types of raw materials and machinery and concessional duty on imports of specified machinery. However, this does not help much for the already operational McTs, since they already have their machinery or rent machinery from laid-off factories. As per the government's Export Policy 2015 to 2018, credit rescheduling for ten facilities will be provided to the leather industry through policy support, which again does not help McTs in particular since only a few of them export crust or finished leather directly. Government also extended help by establishing a centralized waste management plant in Savar and installing clean technology to offset the capital investment of McTs.

'Bond capacity' remains as one of the important aspects of McTs day-to-day financial management system. A bond in colloquial (informal) terms is an export-import 'license' that is issued from the National Board of Revenue (NBR).¹⁸ When a McT gets a bond, this enables it to import chemical items without taxes to Bangladesh with the condition that the product made using the chemicals has to be exported. However, not all the McTs have bond capacity and some rely on big tanneries to get chemicals for their own use. Some respondents informed that they work hard and employ many sources to get a 'bond' since it is one of their lifelines to survive. This begs the question: how so? The way the owners explained this, is that through the 'bond' they import chemicals and use some of them in their factories while selling the rest to the open market. This is a standard practice in this business and they do not consider it ethically wrong. Rather, it helps to offset unforeseen costs and helps to generate the operating costs needed to run tanneries. However, it could not be ascertained to what extent and how many of them are doing a similar practice, since many owners were not comfortable with sharing such information.

7.2.3 Challenges related to Technology Management

McT managers in general and owners in particular are averse to adopting modern technology. Although they are aware that managing the day-to-day operations of the business is sometimes difficult without using updated technology, according to their cost benefit analysis, they prefer to run their businesses the old way. The empirical results revealed that although it is unimaginable to compete both locally and globally without adding information technology (IT) in the business, their reluctance is profound. Nonetheless, the aversion by the owners/managers to use IT to boost up their operations *vis-a-vis* business should be understood in a broader

¹⁸O'Shea, B. J. (2015): "Bangladesh Bond Warehouse Regime: Assessment + Recommendations." (Retrieved from http://rangpurvat.gov.bd/files/publication_content/4381455771080t.pdf on 21.09.2018.)

context. For example, most of the owners are not literate enough to operate a customized software or conduct email correspondences, yet all of them use cell phones to communicate using voice and text. So, while understanding the fact that they do not use IT in a manner that is seen in a SME in developed countries, they do take full advantage of the cell phone technology boom in Bangladesh that offers cheap voice call and data capability. This in turn enabled McT owners to check on the market price of the skin/hide during the procurement season, communicate with middlemen to get a buyer, and check on production while they are away from Hazaribab. Hence, such condition helped into McTs adaptability to local conditions and into resilience. However, this research illustrates three reasons for the McT owners'/managers' reluctance to use IT which are explained below.

First, most of the owners consider cell phones, which greatly enhance their communication capabilities, as the only technology they are comfortable with. Voice communication remains their number one priority, though in Bangladesh cell phone penetration is one of the largest in Asia, which includes data use for the internet. Consequently, they are not enthusiastic about exploring other benefits that internet-based services could offer. Second, they are fearful that if they store their business information in computers, others will be able to hack it, causing immense losses to their businesses. Third, managers and owners reported that they do not have the time and energy to invest in learning how to use computers. They believe they would be better off investing this time in their businesses. However, when the wonders of the internet were shown to them, for example, finding a buyer from abroad, checking the quality of raw materials, or viewing the location of their skin/hide purchase in GoogleMaps, they were impressed. Nonetheless, they were not found to be convinced to change the current *status quo* in using computers.

7.3 Value Chain Aspects and the Future of McTs

As revealed in this research, leather is an exclusive commodity in a sense that it is not used to meet up basic needs such as cloths and it links villages with urban centres and at the same time merges traditional practices with new technologies. Simply put, if the purchase goes bad during the procurement of skins/hides, the finished leather cannot be good. Therefore, for Bangladesh, the growth of the tanneries is directly related to rural advancement and socio-economic development.

The product of the McTs (processed leather) is used by the leather industry in Bangladesh to

produce a range of leather goods to meet the needs of the local as well as global markets. Particularly, when the export of wet blue skin/hide was banned, the tanneries had no other choice other than selling its products to the local leather industries. In this sense, McTs comprise one of the most crucial links in the leather value chain since the big firms depend on tanneries for the supply of raw materials. Nonetheless, during field work, owners reported that things have been changing for the last decade in two ways within the value chain. First, big firms started to appear outside Hazaribagh (not including the newly organized location at Hemayetpur, Savar), which started to have their own tanneries. In this case, these firms are not dependent on the local tanneries for their raw materials. Usually these are the results of foreign direct investment done through local collaboration. Second, many new entrepreneurs started to come into the business (in contrast to the traditional ‘family-owned business’ model) with reasonably big investment. In this case, the previous value chain is threatened as these new entrepreneurs tend to buy out small tanneries and assimilate these into a new system under a new organization since they tend to remain independent in terms of raw material supply. In addition, a number of tannery-dependent small businesses were also found at Hazaribagh. Those are threatened due to the ongoing changes.

Scholars as well as experts have noted that “...leather industries have enough scope for both vertical and horizontal expansion in terms of economic return and social benefits...” (Khan et al., 2015, p. 113). One might recall that in 1965, Bangladeshi wet blue (chrome tanned semi-processed) leather made headlines and as such one can conclude that tanneries sustained their businesses in the past and they are expected to do the same in the future. Additionally, the leather sector in general is the second largest foreign exchange earner in Bangladesh. Yet, one should not overlook the fact that if McTs are able to expand their businesses it would mean the generation of substantial employment of hundreds of peoples, skill building, and entrepreneurship development, which would ultimately spread socio-economic benefits.

The clustering of McTs is one of the ways through which the McTs might be able to maintain their resilience in the future. The term ‘clustering’ here is used to denote several micro-tanneries coming together and forming a ‘cluster’ by sharing their resources and business opportunities. In this way, those who lack resources in terms of capital and space in Hazaribagh can be able to continue operations in the future. During the fieldwork, an idea was raised and it seemed that there was stiff resistance to implementing ‘clustering’ in the future.

Two main factors are at play behind such feelings: resistance to share their own profits and resources with others and a lack of like-minded groups with which to form clusters. It is interesting to note that some of the McTs are willing to work with the big tanneries, yet they do not want to cluster with other McTs. Further research is needed to explain such an attitude. In this research, mixed messages were received from the participants. On one hand, some of the participants expressed hopes that they can weather the ongoing turmoil by realigning their business model with the current rules and regulations at Savar. This was strongly felt from those who were running their family businesses. Some of them even went on to say that they have to sustain and continue their business because hundreds of people depend on them day in and day out. If they fail, these poor people willequally fail. On the other hand, some owners expressed deep sorrow and frustration that no one in the government is willing to listen to their problems and offer any mitigation measures. The procrastination of the relocation was so bad that some of the McT owners opined that even if they could somehow continue their business it would take years to balance the budget.

Chapter Eight: Conclusions and Recommendations

The Government of Bangladesh (GoB) has declared the leather industry a ‘thrust sector’ taking into account the potential growth, investment, and export-earning potential. The GoB’s seventh five-year plan (2016 to 2020) focuses on leather, leather goods and footwear as a potential export sector after RMG. Additionally, the inclusion of footwear and other leather goods on the list of exports has opened up the potential for further diversifying the range of leather exports to the European Union (EU) market base. Not only the export sector is growing, as the domestic consumption of leather-related goods has also registered growth, and one survey showed that about 20% of Bangladeshis are buying shoes worth 4,000 Tk (ca. 42.00 Euro) every year (Debnath, 2017).

In this context, on the one hand, many studies as well as media reports on Bangladeshi tanneries only focus on the unabashed environmental pollution and health risks of the employees, while on the other hand, some of the surveys and government reports have noted the leather sector’s continuous growth in recent years. For example, the Bangladesh Investment Development Authority reports that more than 3,500 domestic and more than 110 export-market-oriented shoemaking units are supported by more than 250 tanneries in Bangladesh (Debnath, 2017). This apparent dichotomy initially triggered a curiosity, hence the research into exploring not only the contributions of the McTs to the leather sector in general but also why and how they survive in the business despite all odds.

This research commenced with the overall research question: How do Bangladeshi McTs develop their capabilities to adapt to changing global and local environments and thereby strengthen their resilience? This question has three main components: How do the McTs achieve their capabilities? What is the nature of global and local challenges affecting their capabilities? In addition, what are the nature and dynamics of resilience that ultimately keep these McTs going forward? Nevertheless, in the initial proposition, I started with a list of subsidiary questions in mind: What are the characteristics of Bangladeshi McTs? What do they understand about resilience and what are the factors that contribute to achieving it? What kinds of changes take place in the McTs’ business practices while they adapt to global and local changes? What sorts of knowledge networks are found in McTs’ raw material acquisition, processing, distribution, and human resources management? What are the problems these McTs encounter in adapting to changes? Moreover, how do they overcome such problems? In the subsequent paragraphs, I shall thus attempt to list my findings in light of the overall research question as mentioned in Chapter 1.2.

8.1 Summary of Key Research Findings

First, *the characteristics of Bangladeshi McTs defy many academic and business definitions.* This study reveals a definitional problem with setting the criteria of a McT in Bangladesh. Upon the compilation of several leather-sector-related reports, media reports, and government reports, it was revealed that no proper count of the micro-tanneries actually exists. One of the main reasons is that not all the micro-tanneries are registered with government regulatory bodies such as the Commerce Ministry. Additionally, associations related to leather in general and tanneries in particular, local government offices that issue trade licenses, and in-depth interviews with some owners revealed different numbers of tanneries. However, for the purposes of the research, I adopted a two-pronged approach, focusing on the workforce size and asset holding situation (i.e. bond capacity) of the business. The respondents mentioned that although they have been in the business for decades, due to an absence of reliable and updated census from the government side, the actual number of McTs varied on ground. Despite all the rhetoric that ‘leather is a thrust sector’ in Bangladesh economy and the politics associated with it, the respondents felt their roles in the supply chain were not projected properly and they were voiceless in representing their group as well as in pursuing their rights. One can blame the fact that owners of the big leather firms often dominate the forums of negotiations or roundtable discussions and the workers/owners of McTs are left out in the shadows. Further, over the years, the McTs have adopted different business strategies and changed strategies to manage their assets and, as such, there cannot be any fixed criteria to use to define their characteristics. Such a phenomenon also poses a challenge for banks and other financial institutions because they are obligated to invest only in those that fulfill their definition of a micro-industry (small).

Second, *McTs are highly adaptive to global and local changes and they alter their internal business practices to remain competitive.* Historically speaking, the global demand of leather from Bangladesh is constantly changing. For example, consumer habits (i.e. awareness) in Western countries have significantly changed over the years. The employee and environmental conditions in the source countries matter a lot nowadays. As a result, standards are set by the importing countries, which are passed down to McTs through buyers or importers personally. On the domestic front, local government and NGOs have relentlessly pushed through legislations to enforce McTs to adapt to changes regarding environmental protection and the OHS of employees. Therefore, the McTs face a dual challenge emanating from domestic and international fronts that have motivated them to change their labour practices significantly. For example, the ‘job work’ model is a novel innovation, where the McTs

adopted a strategy to maintain a highly agile workforce, which is only employed when needed. In doing so, this has reduced their management footprint and costs significantly. This is also tied to the situation whereby McTs have found a way to lease out machinery and space from many medium- and large-sized tanneries that closed down their businesses in the past. Financial institutions that invested in the medium- and large-sized tanneries actively help McTs by liaising with the bankrupted industries so at the end of the day there is a win-win situation for all three parties.

Third, *McTs have gained inherent capabilities because of their long-term presence in the leather sector, yet they continuously strive to enhance their capabilities so they can cope with changes.* The majority of McTs are family businesses and have been operating in this sector for over four decades. Having been in business for a long period has naturally endowed them with the knowledge to deal with procurement, management and production. Moreover, the family dynamics of the business also help them to manage the business through social networking with other stakeholders in the business. It is noted in this research that although fundamentally the McTs probably did not change their business practices, successive generations of owners have striven to learn from past practices and use their education to enhance their capabilities to manage changes. This is also true in the cases of the current generation of the workforce, who rely on information and were found to be fast learners. It was found that some exceptions exist where new generation owners failed to continue the family business, but the reasons can be attributed to their intention to make radical changes in the conduct of the business. Two types of capability enhancements were noted: communication capacity (which helps in managing procurement, price negotiation, and outsourcing) and marketing capacity (which helps in securing orders and selling products).

Fourth, *McTs have a nuanced approach towards resilience, which is deeply grounded in the social and economic contexts within which they operate.* At a fundamental level, if resilience is understood as a capacity to withstand crises (emanating from external and local sources) and restore to an original condition after dealing with massive changes, McTs in this sense displayed their capacity to be resilient. For example, in the 1990s, when government banned the export of wet blue, the McTs were not at all prepared to change their business practices. Globally at that time, China and Brazil were producing high volumes of high quality leather and in comparison Bangladeshi exports were minuscule. Additionally, the local consumption of leather goods was also not high. Combining all the challenges in the 1990s, with some exceptions, the majority of McTs survived because these challenges not only lead to changes in production and marketing strategies, but also changed their business model so they could

better sustain global and local challenges. Again, when the relocation initiative from Hazaribagh to Savar was undertaken in 2003, it was not taken seriously by the leather industry as a whole (of which McTs are a part). But when it became a reality from 2015 onward, the McTs again changed their production and marketing strategies so they can sustain their businesses. The relocation created enormous trouble for McTs as their production suffered and they lost buyers (fixed orders), yet the research shows significantly less frustration among the respondents. Hazaribagh provided McTs with a social context in terms of the accommodation of workers, land ownership, backward linkages, informal investment facilities, schooling facilities, and prayer opportunities. A social and economic support system was created over the decades, which is crucial to the sustenance of small industries like McTs. People know each other in Hazaribagh and in times of need they come together to help each other and this social grounding is important in running their businesses. Take the example of the huge amounts of lending that go into the business and that this occurs based on pure trust, since no collateral is ever kept in this process. Nonetheless, the respondents lamented that their uprooting from Hazaribagh would pose some challenges in this aspect, yet they are hopeful that they can create a similar environment at Savar provided they get help from the government.

Fifth, the resilience of McTs is better understood through the interactions of various actors and a limit of resilience exists beyond which a McT tends to lose its fundamental characteristics. A host of actors such as owners, managers, middlemen, buyers, financiers, workers, technologists, and supervisors are identified in this research and grouped within five components (for example, C-1 to C-5) based on their functionalities. These actors continuously interact with each other in the process of knowledge generation (depicted in Figure 6.1) and consequently contribute to McTs' resilience. Resilience is also correlated with the component actors' frequency of interaction, knowledge exchange, trust, performance, willingness to contribute positively in the process, and skillfulness. For example, once an owner secures a contract from a buyer who sets a standard (as conditions), he quickly touches base with a financier (formal or informal). He then coordinates with middlemen to ensure the procurement of raw materials. Once such management is completed, now it is the turn of the manager, supervisor and technologist to take over the production functions. Here, it was observed how trust played an important role in managing resilience because all the functions (except for those done by the buyer, financier, and middlemen) that are carried out by the component actors are based on the assumption that the actors are knowledgeable and skillful enough to accomplish the given task. Seldom in my fieldwork had I observed an owner lingering around the factory premises to oversee the work. Likewise, the supervisors who monitor the workers know the

guidelines that were transmitted orally and deduced whatever else was needed to fulfill the task. Nevertheless, when McTs keep on enhancing their capabilities and making profit (thereby crossing a threshold of positive resilience) they lose their original criteria (such as employee size, workspace, and yearly turnover) and become a macro-tannery. In studying some successful cases in this research, support for such an observation was found. On the contrary, when McTs kept on losing their capabilities and reached a negative resilience threshold, they failed to continue as a business. On five occasions, ex-tannery-owners shared their experiences with me that substantiated research finding.

Sixth, *McTs' owners and older generation supervisors/technologists need to be motivated to learn information-technology-related advantages in order to benefit.* Knowledge enhancement depends on how motivated the actors are and, in the fieldwork, it was observed that many owners and supervisors/technologists were overconfident. Consequently, such overconfidence acts as an inhibitor to upgrade knowledge. In particular, it was found that older generation owners were highly resistant to learning about modern-day business practices, the advantages of information technology, and human resource management. They are mostly concerned that any such new learning would cost them money and time, which they do not have in abundance. Nevertheless, they also expressed that if some external agencies (such as NGOs) helped them, they would be willing to learn new things such as information technology, health and safety awareness.

Seventh, *McTs suffer from an image crisis, meaning that new generation people are not very keen to come into the business.* As mentioned, tanneries are mostly family-owned businesses and this is one of the internal factors that contribute towards their resilience. However, of late, the respondents (mostly owners and supervisors/managers) reported that their children are not very enthusiastic about taking over their profession because they think it is: 1) less rewarding in terms of money; 2) viewed as a low-class job in comparison to RMG; 3) a less socially acceptable profession; and 4) uncertain business prospect (not able to return profit like in the RMG sector). Thus, this begs the question, what shall be done to encourage the second- or third-generation people to continue this business. The respondents suggested that if a proper marketing approach is adopted to highlight the tannery sector's prospects it might draw young people's attention. Coupled with this, they also suggested that the government should come forward with a comprehensive policy to help the industry by providing financial as well as infrastructural help and thereby McTs could avoid uncertainties.

Eighth, *McTs need knowledge-based training support from external actors more than ever to overcome their current weaknesses and remain resilient.* Coupled with the tendency to resist

new learning, a lack of knowledge-based training either from NGOs or from government agencies would heavily affect the McTs' capacity enhancement. Although it is understandable that from an affordability perspective, the McTs would not subscribe to the idea of using CAD (computer-aided design), or CAM (computer-aided manufacturing) or CIM (computer-integrated manufacturing). Yet, some low-level technological help to assist the technologist and supervisors can be made available. The initiative to offer knowledge-based training from the owners' side is likely not forthcoming in the future for the reasons stated in the above paragraphs and, as such, it was found the actors in the management component malleable to the idea that technology would help them better manage their business and make them more competitive. In this regard, some owners were enthralled to witness some of the basic features of accounting software and how browsing through the internet can open up doors to marketing worldwide. Knowledge-based training is also needed in creating awareness about employee health and safety and environmental risk management.

Ninth, McTs faced some of the same challenges in the past as they face now, yet the future of McTs' survival depends on the careful enhancement of their strengths and minimizing their weaknesses through collaborative intervention by external actors. Regardless of the need mentioned in paragraph eight, the respondents also shared their frustration with the complete absence of support from government and non-government agencies (however, the workers reported that the owners were not taking care of their conditions). For example, some owners informed that overseas-funded NGOs organized several workshops and seminars, yet they did not take into account the local realities of the McTs within which they operate. Interestingly enough, some of the seminars were organized in a local hotel, where only the owners and some selected managers could attend, even though the seminar, by design, was meant to improve the health of workers. According to the respondents, a joint stakeholder approach could be a good starting point for collaborative work to strengthen McTs' capacities. As an example, enhancing the knowledge repository can be achieved by sharing knowledge of supervisors, technologists, and owners. Some respondents also opined that workers as well as owners' associations are two effective channels through which training coordination could be done. It would also have a significant buy-in effect from the workers' side.

Tenth, local social-political-economic dynamics affect the McTs more than overseas conditions and, as such, local supports are crucial for McT resilience. McTs are unique organizations in the sense that they are grounded within a local condition (i.e. social, political, economic, and cultural) and they thrive if conditions favour them (meaning it is a path-dependent development). Their interaction with external agencies such as direct buyers and

government agencies was very limited. However, McTs resilience is related to three things: the degree of financial support it receives from the bank or commercial lending agencies, infrastructural support from the government (especially in Hemayetpur, Savar, where all of them were supposed to be relocated), and policy support regarding procurement and selling. As seen at the micro-level, the workers are not unionized, although they do subscribe to some labour associations, and workers' relationships with management at the McT level are healthy. They depend upon each other for their livelihood and a trusting relationship exists between them. However, the workers reported that local political leaders got actively involved in the relocation process and promised them that relocation would not happen and business would be as usual. Such political meddling should not have happened as it impacted the lives of workers more than any others. Believing in the politicians' promises, the workers invested money and signed contracts with foreign buyers, but they did not prepare for change. Now, they see that those leaders have vanished after the Supreme Court verdict was received midway through production. This has caused serious trouble for 75% of the McTs under study. Clearly, local dynamics are very important for McTs' continued business and help them to maintain resilience by keeping them informed of future socio-political-economic conditions so they do not have to dwell on uncertainty.

Eleventh, *those McT owners who took part in this research were deeply religious, and they felt obligated to help poor people by employing them in their industries.* At a superficial level, one might be tempted to conclude that the owners do not care about their workers' health and do not care much about environmental degradation. However, this study shows that while McTs have indeed failed to address environmental and health issues, the McTs' management have the earnestness to improve these situations provided they receive some help from outside agencies. McTs provide employment (including backward-linkage industries) for thousands of people in and around the Hazaribagh area. Without such employment, these people would end up on the street. What is needed to motivate them to invest in environmental and health issues is incentives and policy support so the management teams of the McTs are not tied to the perception that they need a huge investment to improve in those sectors. Take, for example, the ETP, which never existed in Hazaribagh. Policymakers as well as the owners deserve as much of the blame for not having founded one in Hazaribagh, yet the lion's share of the blame goes to the government for not motivating the McTs to have one installed. Therefore, when the relocation was planned, the government jointly invested in the installation of ETP before the tanneries began operations at Savar and, though late, this approach worked well. In sum, the McTs do not have the capacity to resolve environmental and health-related issues with their

own resources and only a multi-stakeholder collaborative approach in the future can enable them to resolve these issues. That is why the respondents unequivocally opined that mere relocation of the industries from Hazaribagh to Savar based solely on environmental reasons would not resolve problems that McTs have been facing for years. However, this research also shows that among the above-mentioned firms, while a number of them could not succeed and went out of business, many of them were added as new entrepreneurs in this sector. This substantiates the fact that factors identified in this research either contributed to these firms going out of business while it was also responsible for the success of others.

8.2 Linking Theories with Empirical Findings

At the backdrop, I had a singular idea and that was to explore how Bangladeshi McTs develop their capabilities to adapt to changing global and local environments and thereby strengthen their resilience. After carrying out initial fieldwork and literature review, I realized that a number of additional questions would lead me to answer the overarching question stated earlier.

The first sets of empirical findings suggest that a number of factors influence the sustainability of McTs in Bangladesh. These factors were categorized as internal and external because some were inherent in the operations of the firms while the others originate outside the firms operational environment. These factors dynamically interacted within the McTs and the firms developed and adjusted their operational accordingly. These observations and findings fit into the SES theory that has been elaborated in Chapter 5. This model sums up how all the components and sub-components (explored as internal and external factors) mutually interacted and set the boundary for the McT operations. Consequently, these were plotted so that a visual mapping can be generated to better illustrate the findings (see Figure 5.3). Most important here was the innovative creation of the ‘job work model’ for McTs sustainability. Additionally, the concept of social capital was the next important theory that could be linked with the empirical findings. First, the aspect of ‘associability’ was very much observed in the case of McTs because many of them worked in a network and it defined their collective goal to survive in the face of profound global and local changes. Although, traditionally to an outsider it might seem unreal that these were competitors to each other. Yet, they cooperated to a great amount to ensure that others also survive. Further, McTs organized a cooperative body within which they postulated their rights and demand to local government. Second, relying on ‘trust’. Amazing was the level of trust that had been reposed upon the owners by

floor workers and technicians. Due to the prevailing trusting environment, people worked together as a team to achieve a collective goal – sustain and continue operation. Lastly, McTs capital management was found to be innovative and that eventually helped to sustain their business operations. Nonetheless, it was worth notable that the McTs mostly generate and manage their fund locally and financial organizations seldom came out to help the McTs out. Knowledge management (KM) was one of the key factors behind the sustainability of the McTs in Bangladesh – the main result of this research. McTs operated in a managed environment which was un-structured and informal and owners despite their good intention many a times failed to provide formal training. However, I observed the knowledge-creating process (i.e. the SECI model) in full display, not only in knowledge creation but also in its diffusion. In this model, ‘socialization’ played an important role in the sharing of ‘tacit knowledge’ between technicians, floor workers and owners through close and repeated interactions. Consequently, this created a joint and shared experience through coordinated activities. Next comes the ‘externalization’ aspect – what is called ‘the articulation and expression of knowledge’. In this case, McTs were found to be highly creative in the sense that the older employees took due care of the new recruits while they taught them during the training period. In the next part, the tacit knowledge in collecting raw materials, processing raw hides in the factory, and treatment are combined (i.e. the ‘combination’) at the explicit side in various new ways. Finally, the ‘internalization’ aspect of knowledge was observed to happen when external factors pushed the stakeholders to enter the knowledge conversion process of individuals in terms of health and safety and environmental awareness.

Numerous drivers and barriers in achieving resilience of McTs were identified in this research. These were categorized at the macro- and micro-level. At the macro-level, changing scenarios at the global level caused McTs to adapt while at the micro-level several push and pull factors also impacted their operation (for example the management of human resources, bond management capacity and management of finance). McTs were subjected to standards and they adjusted accordingly to manage their sustainability through modifying their internal governance mechanism. Although one might surmise that these McTs did not adhere fully to the ILO labour laws, yet my observation confirmed that owners were aware of labour rights and influence of labour union on the workers and technicians was negligible in the industry. In some instances, the owners could not recall when was the last time there was a labour strike resulting in the closure of the firms. Adaptability was explored in this research in order to find out the nuances of sustainability of the McTs. It was revealed that McTs developed its own culture over nearly seven decades of its operations in Bangladesh in general and at Hazaribagh

in particular. For example, the culture of workers who work and live close by the industry, its religious and social adaptation with the surrounding areas and all the stakeholders (i.e. participants) tried to cope with changing environments – in the process, they developed new methods of sustainability.

McTs' tacit knowledge management ability is the key to McTs' resilience. In this regard, McTs successfully exploit the four dimensions of tacit knowledge (socialization, externalization, combination, and internalization) innovatively. One of the important findings is the realization that most of what occurs in a McT's operation is not written. Hardly any rulebook explicitly defines how the workers should work in a factory or even how a technologist should use chemicals for tanning purposes. All they do comes from their experiences and confidence, meaning they are capable of managing tacit knowledge effectively. As component actors interact in knowledge generation, four tacit dimensions were found. For example, socialization takes place based on the type of actors and their membership in various associations. At the components level, the actors informally meet with other actors, and exchange knowledge about products and challenges they face in production or management. Some externalizations were observed in terms of laying down rules in the cases of borrowing money, understanding buyers' conditions and accounting for loss and profit. Some technologists who are new to the job were also found keeping notebooks to maintain a level of knowledge. Whatever knowledge is gained through the actors' exchanges, some are translated into internal rules, which we call internalization. In the case of the SECI model interpretation, I observed the manifestation of internalization quite significantly. Finally, in the combination aspect, the owners mainly responded and informed that they try to combine their past knowledge and new information together if they need to adjust to any changes.

8.3 Contribution of the Research

Primarily, this research contributed towards the knowledge generation of Bangladeshi McTs' resilience with the hope that such knowledge will guide policymakers as well as other interested parties in helping McTs to survive and continue their businesses.

First, a study on McTs' resilience in the Bangladeshi context has never been done. This study shed light on the factors of resilience that need to be understood, both by the respondents as well as by the policymakers who support small entrepreneurs. Knowledge generated from this research is particularly beneficial for all the external actors such as government, NGOs, and leather/tannery-related associations to update their policies. If nothing else, when the

government forecasts the rapid growth of this industry by 2025 and refers to it as one of the ‘thrust sectors’, at least it has information at its disposal about McTs’ strengths and weaknesses upon which it can further build.

Second, this research displayed how innovatively a host of actors in this sector manages knowledge and with a little “nudge” (a term recently popularized by Professor Richard Thaler, a Nobel laureate in economics) in the form of external support it can go a long way in the future.¹⁹ Importantly, McTs use tacit knowledge to manage all aspects of their businesses and all the actors involved in this process are skillful in using such knowledge. This is a remarkable discovery my research has made in exploring how a whole group of McTs manages their businesses (starting from procurement to production and marketing) with minimum explicit rules. However, this study does not prescribe the imposition of explicit rules *per se* on the McTs. Rather, it shows the validity of using tacit knowledge management to succeed in business, which can be extrapolated to other small- and medium-sized industries in Bangladesh. As seen, tacit knowledge management is crucial to enhancing McTs’ capabilities to sustain local and global changes.

Third, McTs’ challenges are manifold, yet they continually battle against all odds and survive. The challenges come from within as well from outside and it is important to map the challenges to be ready for future challenges. While the big factories/enterprises have more space to absorb the shock arising from numerous global and local changes pertaining to this sector, the McTs have less space to maneuver such issues. Nonetheless, this research analyzed two important historical challenges that McTs faced and their successful management so far, which can be attributed to their resilience. Mapping challenges can also help us better understand the vulnerability of small businesses.

8.4 Reflection About the overall Research Process

This research was qualitative and it was undertaken at a critical juncture in the history of McT operations in Bangladesh. During the middle of the fieldwork, the court order to relocate came into full implementation and government employed law enforcement agencies to ensure that all the tanneries were moved out. Naturally, the stakeholders (owners, workers, and technicians) were sad, frustrated and fearful about their future. Nonetheless, I tried to capture

¹⁹For details see Pollard, N., Ringstrom, A. & Gonzales, S. (2017): “We’re all human: ‘Nudge’ theorist Thaler wins economics Nobel.” (Retrieved from <https://www.reuters.com/article/us-nobel-prize-economics/were-all-human-nudge-theorist-thaler-wins-economics-nobel-idUSKBN1CE0X5> on 20.09.2018.)

their original stories in various settings such as meeting them informally out of factories and also carrying out research participants' observations at Hemayetpur (i.e. the new locations).

The owners were found not be very open to interviews as they experienced in the past that only the environmental degradation aspects of their industries were highlighted by researchers as well as by the media and NGOs. So, naturally, there was some resistance in recruiting them for the interview, yet I was successful because I used local connections and assured them by explaining the research objectives and processes. I found the workers and technicians were more open to discussion provided they were not monitored by the owners strictly.

Participant observation helped a lot to explore how knowledge management is actually done on ground. Although it was challenging for me to shuttle between Hazaribagh and Hemayetpur to continue the observation aspects of McTs operations, yet it was worth doing. As revealed, most of the things that the stakeholders (i.e. the participants) carry out are done informally and in an unstructured way. Yet, if one looks deeply, these practices (i.e. organizational routines) have been developed over decades and workers as well technicians are adapt and skillful in carrying out all the aspects of their day-to-day operations without a manual.

I went back to the research participants with findings and they appreciated the research on two counts. They felt that this is the first time someone was interested to know what they do and how they do what they do. This is a profound reflection for me because to my understanding this is the first research on micro-tanneries in Bangladesh that looked into the inherent capacity of the firms to sustain in the midst of global-local changes. In addition, five key limitations of the research are mentioned below:

- a. The tanneries were moving from their current location (i.e. Hazaribagh) to a new location (i.e. Savar) after almost 13 years of negotiation with the government. The forced relocation event created enormous tension amongst the tannery owners as well as their employees, and as a result, access (as expected) to the research participants was difficult.
- b. It remains to be seen how many McTs eventually will go out of business or are able to continue to operate their business (therefore testing the resilience hypothesis) in the future when all of them relocate from the current location. Accordingly, this study only projects the results seen within a particular study period.
- c. The knowledge management dynamics were observed within the selected McTs only and once the relocation is completed, the dynamics might change, depending upon the local conditions. However, it was assumed that the major components will remain unchanged as these were found to be the core of their business operations.
- d. Female participation in this research was minimal due to socio-political conditions and due to their level of employment in McTs in Bangladesh. This is quite a contrast compared to the female

workforce in the ready-made garments (RMG) industry in Bangladesh.

- e. Finally, this research showed that although these McTs were often able to utilize its social capital for sustainability purpose, its capacity was severely impacted due to local factors (e.g. government policy decisions).

8.5 Recommendations

This research pointed out several aspects of McTs' resilience of which it was important to conceive what causes resilience and what limits it. As the research was carried out at an important juncture of time in the tannery relocation context in Bangladesh, it is equally important to suggest the below mentioned recommendations in a broader perspective. This is also to mention that the McTs were navigating through a complex situation at present while they attempt to relocate to Hemayetpur, Savar. While McTs contribute significantly to the leather value chain by supplying the essential raw materials (additionally the often touted claim that it is the second largest foreign currency-earning sector in Bangladesh), yet this research revealed that only a minimum support was rendered to McTs for their smooth transition by keeping their current business model intact. Even no systematic research was carried out to find out whether the current McTs business model would be impacted due to relocation and if so how the relocation would affect the overall leather value chain in Bangladesh. Although some big leather firms had their own tanneries, at least as of the time of the research, such big firms were few. Additionally, it was presumed by most of the owners participating in this research that many McTs would go or had already went out of business because of relocation and, along with it, their decades-old experiences in providing raw materials to the leather industry were lost. However, in this context, three sets of recommendations are made: for policymakers, for McT management teams, and for future research.

8.5.1 For Policymakers

First, policymakers should be innovative and think outside the box if they want to translate the rhetoric of the 'thrust sector' into reality. A special government unit (located within the Ministry of Commerce) should be dedicated to look after the McTs' affairs, at least for the transition period until they establish a foothold in Savar.

Second, the government should offer special financial help for the McTs so that their reliance on the informal money market would be reduced. It should also instruct financial institutions

to revamp their policies so that McTs could fit into some sort of revised funding criteria and thus become eligible to get loans. Capital management greatly impacts McTs' resilience. Therefore, a revised policy to access capital would be effective and help the McTs remain in business. Additionally, such financial help is crucial at this moment as local investors have already invested about BDT 250 crore (ca. 2,590,958 Euro) to shift their tanneries to Savar. However, due to the production break caused by a delayed relocation process, they lost many foreign buyers and with such financial assistance, the McTs would be able to get back on their feet sooner.

Third, the government should attract new entrepreneurs and investors in this sector. In this regard, marketing/promotion of this sector in various national and international forums is deemed necessary.

Fourth, the government also should invest in skill development to increase productivity and growth in this sector. McTs lack training and skill development to a great extent and they need a little “nudge” to boost their capabilities.

Fifth, the government might ponder improving the supply network of raw skins/hides that come from all over the country during the festival time. At present, the whole network remains at the mercy of intermediaries and a host of actors whose influence could be reduced through government intervention. This would have a positive impact on the McTs' resilience.

8.5.2 For the McT Owners

First, owners should be motivated to think holistically about the future of their businesses. They should be made to understand that they have to enhance their management skills to cope with changes both locally and globally so that their resistance to knowledge development can be overcome. However, encouragement should be done in a nuanced way because many of them simply resist the idea of re-training or re-learning.

Second, self-motivated owners are the most likely to make significant changes in their business procedures. They should understand the limit of resilience and should also understand that positive growth is good for their workers as well as for them.

Third, owners should be made aware that they are the keepers of the knowledge repository and their willingness to enhance knowledge in turn influences other actors in various knowledge components to share knowledge. When knowledge is shared it is always increased.

Fourth, the owners should be motivated to get information-technology-related help so they can

take advantage of marketing and record keeping. Their fear of IT should also be dealt with in a skillful manner since they are risk-prone and consider IT matters as unmanageable issues.

8.5.3 Recommendations for Future Research

Future research might be undertaken to explore the role of knowledge-intensive external organizations in achieving McTs' resilience. Further studies can be undertaken to formulate an NGO-government partnership in developing a knowledge platform whereby McT owners can access various knowledge-related resources free of charge. However, similar studies could also be done for small- and medium-scale industries in Bangladesh. Additionally, the role of KIBS in training and sustaining McTs' operation was noted. Thus, this research recommends to explore options for KIBS imparting knowledge in McTs in Bangladesh.

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11. Do you do 'job work'? Do you see value in this business operation model? Since when was it started?
12. What are your hopes and fears for the future?

Appendix 2: Human ethics assurance (Informed Consent Form)

Project Title: “**Understanding Resilience: Bangladeshi Micro-Tanneries (McTs) in a Changing Global-Local Environment**”

Researcher: Nahreen Islam Khan, Philipps-Universität Marburg

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

In an effort to understand the causes and factors of resilience of your firm, I am conducting interviews with micro-tannery owners, floor workers, and technicians in selected McTs. The interviews will be aimed at gathering information related to the **resilience** of micro-tanneries located only in Hazaribagh. In the beginning of each interview session, I will explain briefly the context of the research and the potential benefit that can be derived from this project on completion. It is expected that individuals taking part in the interview will experience a minimum level of risk in terms of 1) political sensitivity of the subject matter and 2) risk of endangering business information.

The interview (with a set of open-ended questions and assisted by the interviewer) might last between 80-120 minutes depending on the participant’s volunteer participation and the participants can withdraw anytime during the interview process and request the already recorded interview materials. Upon request, it will be handed over to the participants. However, the interview data will be kept in digital form (both audio and as transcribed texts) up to one year for preparation of the final report and for publication within scholarly journals. Afterwards, it will be destroyed. No data will be shared with any external agencies. Only the final report and materials related to publication will be generated from the data. In addition, the University of Marburg may look at our research records to see that the research is being done in a safe and proper way.

In order to ensure accuracy in reporting your comments, a digital recording device will be used during the interview. The recorder may be turned off at any time, upon your request. Individuals will be referred to in the final report as “Respondent A”, “Respondent B”, and so on. All

comments from that individual will then be coded, with the identity held separately under lock and key in Nahreen I. Khan's custody. Individuals participating in the interview will also receive draft copies of the report before finalizing and of publications derived from the study to provide assurance of anonymity and comfort. The participants are requested to give consent by ticking the box below for audio recording. If you do not consent, are you willing to allow handwritten notes of the interview, that will be treated in the same confidential manner as the digital information:

I give consent to record the interview in digital format.

I don't give consent to record the interview in digital format.

I give consent to record the interview in note form.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed at your initial consent, so you should feel free to ask for clarification or new information throughout participation.

Signature

Date

If you would like more details about this study, please feel free to contact the researchers:

Nahreen Islam Khan, Phd Candidate
Philipps-Universität Marburg
Phone:
Email:

A copy of this consent form has been given to you to keep for your records and reference.

Annex 3: List of Verbatim Data used in the Dissertation

Respondent's code used in the dissertation	Data	Citation Page no.
Respondent 1	<p><i>-I started my own Tannery business in 1987 after 10 years of experience as a production manager. I had the blessing of my elders and my complete faith in Allah that I would be successful if I adhered to the religious norms and values. The leather business was not so competitive that time. We used to work in Hazaribagh as a single family.</i></p> <p><i>—I only just started my business in 1987 because I had confidence in my experience but was soon hit with this new reality of job loss. My children were still young, and I borrowed money from a local lender with high interest. My future seemed to be bleak if I lost my job. The owner told us that new companies were opening their businesses yet they won't take us and if they were hit with new regulations then they could not make profit and provide subsistence for us.</i></p>	53
Respondent 2	<p><i>—My buyers rely on me to adhere to my commitment. One such Chinese buyer has become my family member, I call him 'Boro bhai' [—elder brother in Bengali]. He always clears my payment on the first day of the agreement. Even I can lend money from him when needed.</i></p> <p><i>- 'bisash koren, taka mair jabe na' (transliterated as, —trust me you won't lose your money).</i></p>	64
Respondent 3	<p><i>—In the 80s, we used to see a different situation at Hazaribagh. At that time, we had small Bangla drums where we used to put raw skin/hide for treatment. We used to need a lot of people to do it as the capacities of the Bangla drum was not very much. In the 90s, gradually the owners started to replace these drums with China drum. These were of bigger capacities yet they need a fewer people to put the skins inside the drum. So on the one</i></p>	65

	<i>hand, the technology of treating skins and hides changed while on the other labourers lost jobs. Moreover, when the cell phone came in, it changed the way we used to communicate with people like the Jachondar, the chemists, and the labour manager. The owners in the 80s used to take limited jobs and we only had some big leather companies which used to make shoes and belts but now things have changed and we see lots of big leather companies. Earlier, only a few people used to come into the business but now a lot of outsiders come in who have little to no knowledge in running a tannery.</i>	
Respondent 4	<i>—After I performed my Holy Pilgrimage at Mecca (Hajj) I worked very hard to avoid bank loans as they attach interest and accepting or giving interest is forbidden (Haram) in Islam. I believe that paying interest to a bank means I have to payback regardless of whether my business is profiting money. Therefore, I never take this forbidden risk, trying hard and soul to run my business by my own ability.</i>	72
Respondent 5	<i>—From the very first day of my work, I have seen these drums are here, exactly in the same place. I never even think of changing it, or never have any question on my mind. Because I believe that, it is a rule and fixed by my owner. I cannot dare to ask him about it.</i>	78
Respondent 6	I asked respondent 6, who has been working in an McT for the last 22 years as he progressed from a line worker to a supervisor, who is responsible for the measurement of the product. He informed me that he has seen gradual changes in the way he works at his particular position. In the past, he used measuring scales to measure the exact length and width of the product and he learnt this technique from his supervisor.	87
Respondent 7	<i>—There has been an influx of a highlighted environmental consciousness prevailing in and around Dhaka city for the last decade that has included environmental activism both by individual and NGOs, consumers, media and regulations. All these efforts at the macro-level are geared to stop environmental degradation and these are noteworthy – at least they appear so from outside.</i>	110
Respondent 8	<i>—Since neither the NGOs, consumers or government came out to help them financially and technologically to stop the factory</i>	110

	<i>pollution, they had no alternative but to continue their operations as usual.</i>	
Respondent 9	<i>-We can feel the pitch of quality-control-related challenges for some time and as a result we had to up-grade our factory equipment and we are now enforcing quality control more earnestly as it impacts our business continuity.</i>	110
Respondent 10	<i>—We have to rely on the purchase power of customers because if they sell their products at a high price and buyers can still buy them, then there is a ripple effect, as the benefits will trickle down to make improvements to employees' health and working conditions in the tanneries.</i>	111
Respondent 11	<i>—The fact is that foreign buyers and companies' insistence on maintaining standards has had a positive outcome by improving the conditions in the RMG sector, but in many respects the tannery sectors lacks it as no such pressure exists there.</i>	111
Respondent 12	<i>—We see a lot of European, Chinese buyers coming to buy our products. On many occasions I told them that why don't they do something to improve the tannery conditions. I also told them, we buy your chemicals, we comply to your production guideline but still you say we are not hygienic. So why don't you give us hygienic chemicals and you know that we can use vegetable methods for tanning and you just have to let us use them.</i>	111
Respondent 13	<i>Interviewee 13 started as a casual employee at Tannery "Y" immediately after independence. At that time, the tannery was located outside Dhaka, at Narayanganj...</i>	121

Eidesstattliche Erklärung

(gemäß § 10, Abs. 1c der Promotionsordnung vom 15.07.2009)

Ich versichere an Eides statt, dass ich die von mir eingereichte Dissertation selbstständig angefertigt, alle Quellen oder Hilfsmittel vollständig angegeben, vollständig oder sinngemäß übernommene Zitate als solche gekennzeichnet habe. Diese Dissertation wurde noch an keiner Hochschule zuvor eingereicht und war noch nie Bestandteil eines Promotionsverfahrens.

Marburg, 10.10.2021

Nahreen I. Khan