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Exploring the Confluence of Knowledge and Local Practices to Comply with Global Standard: A Case Study on Selected Small and Medium Scale Bangladeshi Leather Industries

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Abstract: In the last few decades compliance and adherence to International standards or Global standards has become essential with consumers global supply and business sustainability. Global standards dominate business sustainability and continuity, economic, political, and even social relationships to the extent that even individual consumers decisions, choices, preferences, are influenced not by families, peers, or colleagues but by the international standards. This paper mainly dealt with 'How confluence of knowledge in the small and medium scale Bangladeshi leather industries (SMLI) manage indigenous knowledge creatively and employ such knowledge in effectively managing their day-to-day operations. It also explores the nature of knowledge management for the SMLI in the Bangladeshi context. In doing so, this qualitative research is based on semi-structured interviews and participant observation that aimed at identifying key knowledge keepers, mapping knowledge topography, and exploring the management of tacit knowledge while negotiating local-global pressure. 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 SMLIs.

This research also attempts to explore how knowledge dynamics are tied to SMLIs' 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.

Keywords : Global Value Chain (GVC) , Global Standard (GS) , SECI Model, Tacit Knowledge, Knowledge Dynamics

1. Introduction

Bangladesh meets 0.5% of world's leather trade and domestically its leather industry ranked fifth in the export earning sectors (Paul, Antunes, Covington, Evans, & Phillips, 2013). Yet Bangladeshi Small and Medium Sized Leather Industries (SMLI) not only weathered all the previous global economic meltdowns as well as fragile political and economic governance locally, it consistently grew over the past years as well as crossed $1 billion mark in annual export in 2014 (A-Muti & Ahmad, 2015). Data compiled from the Export Processing Bureau (EPB) of Bangladesh clearly support such a trend and forecast that "…the country's leather product export earnings were forging ahead due to

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growing international demand for Bangladeshi leather products, mainly for quality and cheaper prices" (Export Promotion Bureau, 2014 cited in Khan, Hossin, & Akbor, 2015). Nevertheless, having proven a track record of sustainable growth these industries were, nevertheless, subjected to global pressures in terms of complying with value standards as consumers in the global North became more aware about local conditions where goods are produced. Consequently, the importing firms at the global North insisted to implement Corporate Social Responsibilities (CSR) by setting standards to improve labor, environmental, and governance related issues at the suppliers end. As a result, local standards and supply chain dynamics in Bangladesh also have undergone substantial change over the years. Among the primary factors that ushered changes including but not limited to the global-local demands for ethically produced goods and effect of globalization that enabled firms located in the global North to be able to access a wide range of production markets, which eventually triggered an intense competition.

According to Leather Sector Business Promotion Council (LSBPC) of Bangladesh, SMLIs employ around 100,000 people directly or indirectly and this sector has all the basic elements to provide a sustainable business (Nun, 2006). However, amidst all the above mentioned pressures, the SMLIs, in fact, showed a remarkable strain of resilience and continued its business by contributing not only nationally but also improving local economies to a great extent. Researchers in this field observed that there was no "negative growth" in this sector over the past years since its inception (Nun, 2006). This phenomenon begs several intriguing questions, which are appended in the form of research questions subsequently.

2. Main and Subsidiary Research Questions

The main research question stands 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.

Following are the subsidiary research questions:

i. What are the primary and secondary drivers of knowledge dynamics?
ii. How indigenous knowledge is produced when heterogeneous actors and their interests collide at the micro (local industries, workers union), meso (industrial associations) and macro (global importers) level within a value chain?

3. Theoretical concepts and their interconnectedness

SMLIs on the one hand respond to GS in order to survive while on the other hand these are also subjected to a host of local and internal pressures for value chain's standards compliance. Within this complex dyadic milieu, SMLIs must generate indigenous knowledge for not only its survival but for its growth. Subsequently, such a nature of knowledge might influence its existing institutions and might act as driver for a new kind of institution (which can be compared as neo-institutions) in the future.

3.1 Main Theoretical approaches

i. Global Value Chain (GVC), Global Standard (GS).
ii. Nature of knowledge dynamics and the SECI model for tacit knowledge creation, management, and flow for indigenous knowledge creation.

3.1.1 Global Value Chain (GVC), Global Standard (GS) in shaping the SMLI businesses

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, Humphrey, & Sturgeon, 2005, p. 78).

A dual pressure is noted between the global north and south that shapes value chain and set the tone of various standards as explained here: "despite spatially diverse production systems and the fragmented owner- ship 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'…These dual processes of continued high rates of consumption in the affluent world and expanding economic opportunities for value chain participation elsewhere in the world have provided the bedrock for the attendant models of global economic organization" (Neilson, Pritchard, & Yeung, 2014)

Value chain management especially from the 'global south' perspective and setting up GS to regulate these are understood as "governance" and it remained "…at the heart of much of the literature on globalization and GVCs …[and] globalization has resulted in an extensive distribution of global production, which requires more intensive organization of ties within global production networks ('industrial' governance, 'inter-firm' governance or 'value chain' governance)" (Nadvi, 2008, p. 2).

"The second observation about global governance around standard setting is the increasing importance of private actors. 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).

3.1.2 Nature of Knowledge dynamics

"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. Knowledge dynamics are 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. This includes many activities like: employment of knowledge workers; education; training; consulting; in- and out-sourcing. A result of knowledge dynamics may be an innovation in, for instance, a new or improved product (good or service), organisation or process" (Halkier, Dahlström, James, Manniche, & Olsen, 2010, p. 6)

Scholars 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" (Mandruleanu, 2008, p. 117).

"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 et al. identified that every organization (firms) has two types of knowledge: individual and organizational and within the 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). My research captures tacit knowledge in understanding the knowledge dynamics of the SMLIs.

3.2 The SECI model for tacit knowledge creation, management, and flow

I used the following model (Figure:1) to analyze how knowledge is created within the SMLIs and then it is diffused (Nonaka, Hirata, Kohlbacher, & Toyama, 2008, p. 19).

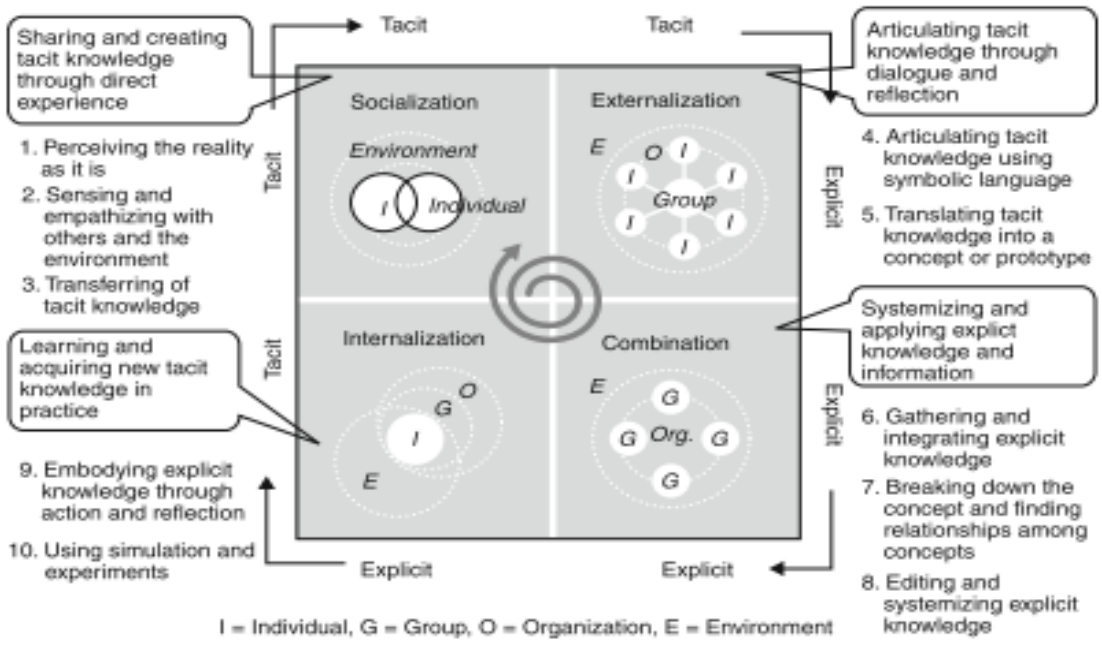

Figure 2.1 The knowledge-creating process: SECI model

Figure: 1 The SECI Model (Source: Nonaka et al., 2008, p. 19.)

SECI is an acronym for socialization, externalization, combination, and internationalization. Socialization describes the sharing of tacit knowledge between individuals through their close and repeated interaction. 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. Often described as 'learning by doing' (Nonaka & Takeuchi, 1995), internalization is thought to describe a process of building up the capacity to perform tasks through repeated practice. The SECI process is located in teams of individuals who are work in Ba/spaces throughout the organization (Krogh et al., 2013).

As an outcome of SECI, people also capture knowledge assets that become a resource for the organization to create new knowledge and innovate across time and space (Nonaka & Konno, 1998). A 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 "how 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).

3.3 Knowledge dynamics and its link to innovation for sustainable growth

Scholars studying the growth of SMLIs in Bangladesh contend that "the contribution of the sub sector [SMLIs] 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 "values" to the goods is to generate new ideas in the business and translate such ideas in to product.

"A brilliant departure of Ikujiro Nonaka was to 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).

"This continuous innovation requires a well-planned system of knowledge management that enables the firm to excel in technological, market and administrative knowledge creation. Innovation and knowledge creation are two concepts that have a strong but complex relationship that is not often examined. This article reviews both concepts in an attempt to show how they are fundamentally different yet deeply connected" (Popadiuk & Choo, 2006, p. 302).

One of the first issues which emerge from research in 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. A second issue emerges when consideration is given to the actual conduct of research that is undertaken. It would appear that researchers may explicitly or implicitly state their methodological stance but subsequently appear to have difficulty in implementing the methodology in their primary research (Kane, Ragsdell, & Oppenheim, 2006, p. 143).

Scholar 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, Janz, & Mohnen, 2008, p. 1)

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).

4. Detailed Description of the Research Approach, Strategy, and Method.

In this section, I shall attempt to justify why I adopted a qualitative methodology for this research in general and ethnographic approach in particular. Later on this section shall also describe how this approach helps us in unearthing knowledge dynamics as shared by the research participants.

As aforementioned, a qualitative research strategy was used in this research since it is based on the characteristics of such methods that focus on the potential for a more in depth understanding of the nature of knowledge dynamics, of the interests and needs of the research participants (i.e. SMLI owners), of relationships among the stakeholders. A qualitative research strategy uses a certain way of knowledge construction where reality is subjective and fundamentally depends on the context, thus, understanding can only be gathered from the perspective of whomever and whatever is being studied (McMillan & Wergin, 2006, p. 94). Moreover, some scholar opined that since qualitative research produces data that is rich in its description of people, places, conversations, and behavior (Bogdan & Biklen, 2007; Creswell, 2007; Marshall & Rossman, 2011).

Within the broad qualitative strategy, I use ethnography because it is the centerpiece of qualitative inquiry that has been derived from anthropology and qualitative sociology (Marshall & Rossman, 2011). I decided to use this research technique as a method because as researcher I wanted to observe and/or interact with research participants in their real-life environment. Since understanding the knowledge dynamics in sustainable growth was the principal aim of this research, ethnography seemed to be the ideal method. As an ethnographer and a curious observer, I was keen to observe and interpret the behaviors of various SMLI owners in their natural setup in order to gain a deeper understanding of their motivations for knowledge production, management and use. In doing so, I not only observed but also participated in events to ensure the sights and sounds of the research participants were grasped with maximum accuracy. Most importantly ethnography research for 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).

The aspect of adopting ethnographic research approach is the process of the negotiation of self-vs. context what Herbert Blumer (1966) (expanding on Mead's theory) explained as an understanding of "self" in relation to "society" through symbols and meanings that play a significant role in anthropological research (Cited in Robben and Sluka 2007, 110). However, this method was important because it compels the researcher to self-reflect and challenge his/her own perceptions while examining knowledge dynamics (Robben & Sluka, 2007, p. 110).

Semi-structured one-on-one interviews was carried out in location of the research participants. The following are the data sources: Interviewing (35 one-on-one interviews, one interview was dropped from the study); participant observation; analysis of policy documents. Triangulation has done using data from in-depth interviews, participant observations, and open access policy documents.

5. Discussion

SMLIs 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 SMLI'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, this research found four tacit dimensions are on full display. 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. 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.

5.1 The Knowledge Keepers of the SMLIs

Three stakeholders in the SMLIs create knowledge networks: owners, machine operators, and technical persons. These groups manage the total operations of a SMLI 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.

Most of the SMLI employees have received their knowledge over time while working on a particular station in the factory. They acquire the technical know-how 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 paper, 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 SMLIs 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 SMLIs' 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.

5.1.1 Indigenous Knowledge and Heterogenous actors within the Knowledge Network

Individual employees, managers, supervisors and owners co-create a knowledge network through their interaction in various phases of SMLIs' 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 2 is a modified version of the original model of Nonaka 2008.

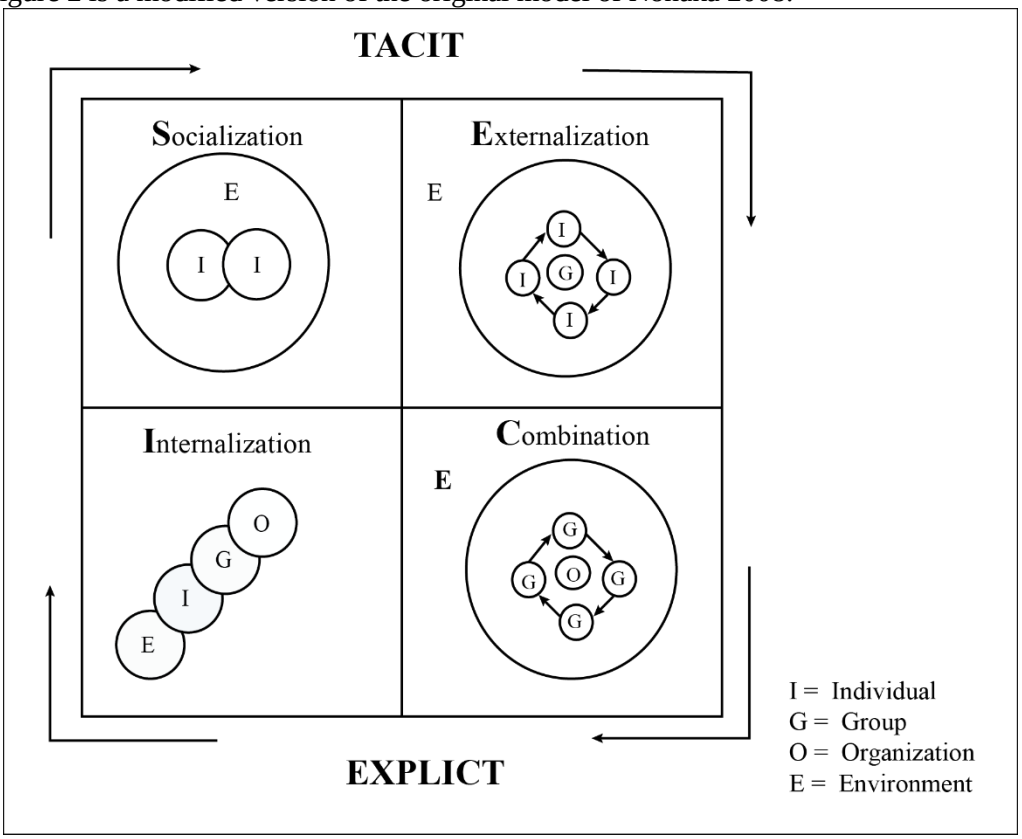

Figure 2: Adopted with modification SECI model.

In the Figure 2, the top left quadrant depicts interaction of a number of individuals (in this case the workers) within a SMLI 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. SMLI), 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. SMLI) where knowledge is gathered systematically to create explicit knowledge. Here several routine aspects (such as production, collection, and marketing) of running a SMLI business are combined within an overall SMLI environment. In a typical SMLI, 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 3 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.

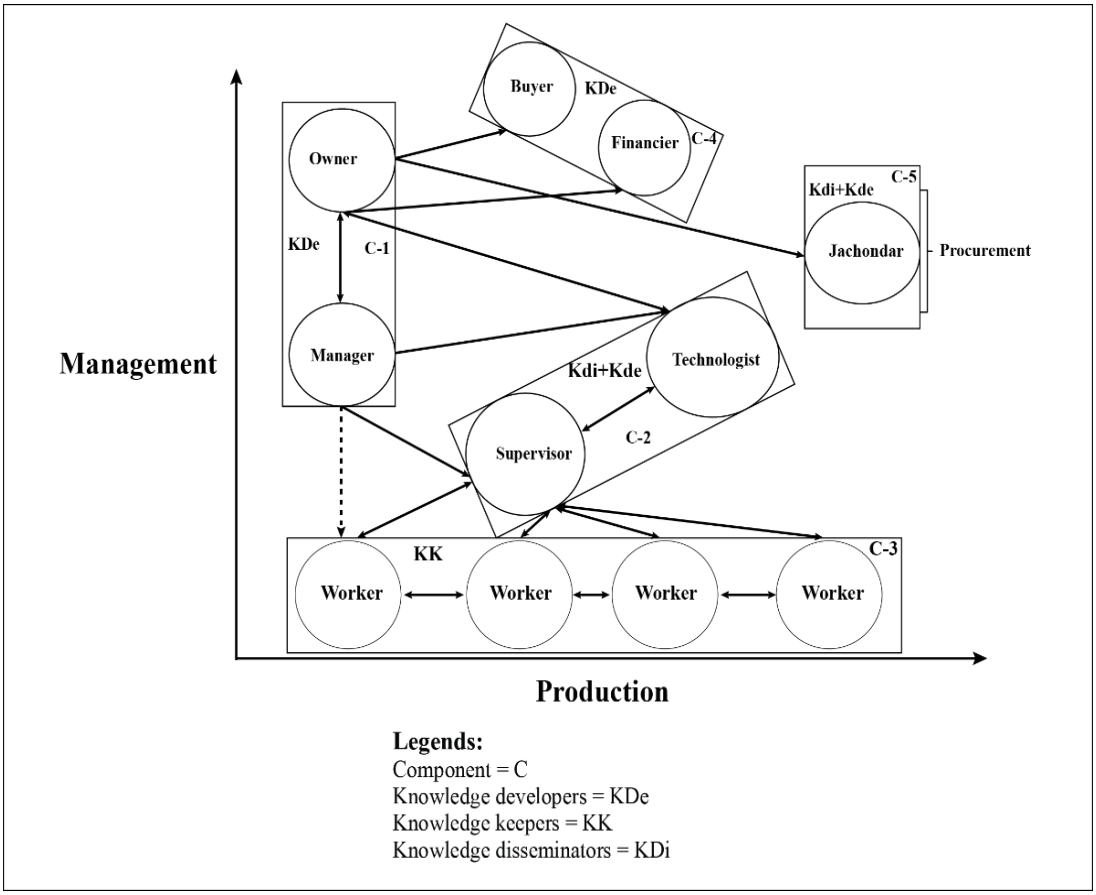

Figure 3: Knowledge network topography.
(Source: Author)

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 SMLI. The actors of this component develop knowledge by virtue of their roles in the overall SMLI 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. 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 4, 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.

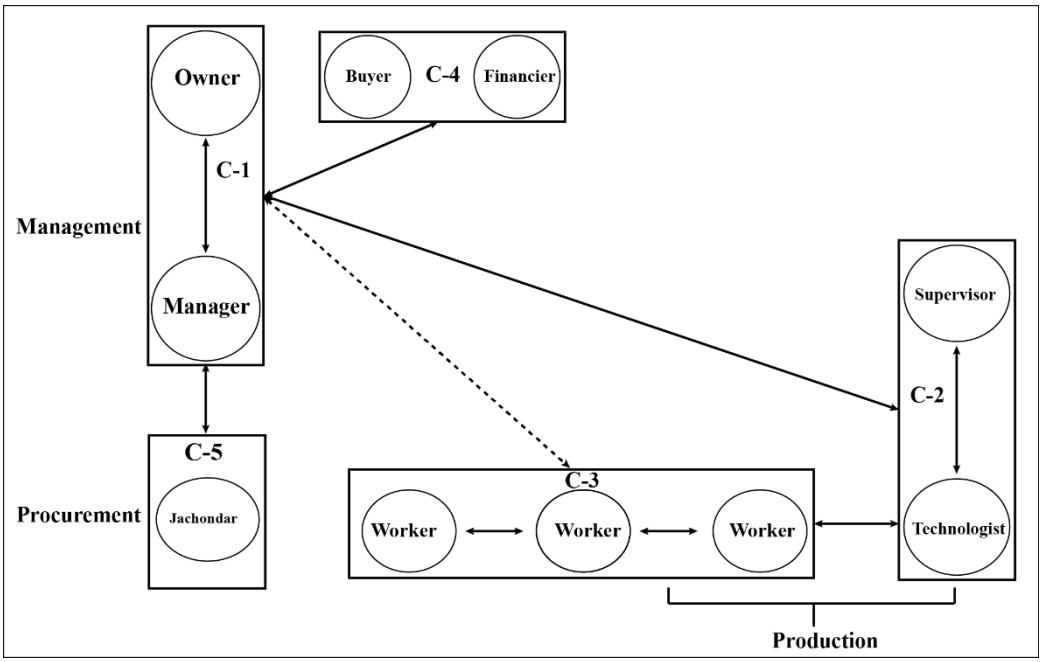

Figure 4: Component interactions (C), knowledge generation, and diffusion. (Source: Author)

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 SMLI (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 SMLIs 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 SMLI 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 SMLI, 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 SMLIs 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 2 and 3 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 SMLI 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 SMLI 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 SMLIs 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 SMLI 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 SMLIs (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.

5.1.2 Knowledge Impediments – Justification and Belief Cycle

In this research, it was noticed that the actors in C-1 (Figures 2 and 3) 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 SMLI 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 SMLI 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 SMLI 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 SMLI. Moreover, if the necessity to take advantage of technology is not felt at the C-1 level, how then will innovations in SMLIs' 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. Conclusion

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

Furthermore, 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.[1] Importantly, SMLIs 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 SMLIs 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 SMLIs. 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 SMLIs' capabilities to sustain local and global changes.

Finally, this research shows that although these SMLIs are often not thought of being able to undertake Corporate Social Responsibility (CSR), yet these are very much aware of the fundamental philosophy of "social business" (i.e. to help the poor) and it routinely commits its resources to do so. This research also demonstrates how "social business" concept is not only perceived by these SMLIs but also re-interpreted as a whole new concept in this sector.

[1]For 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.)

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