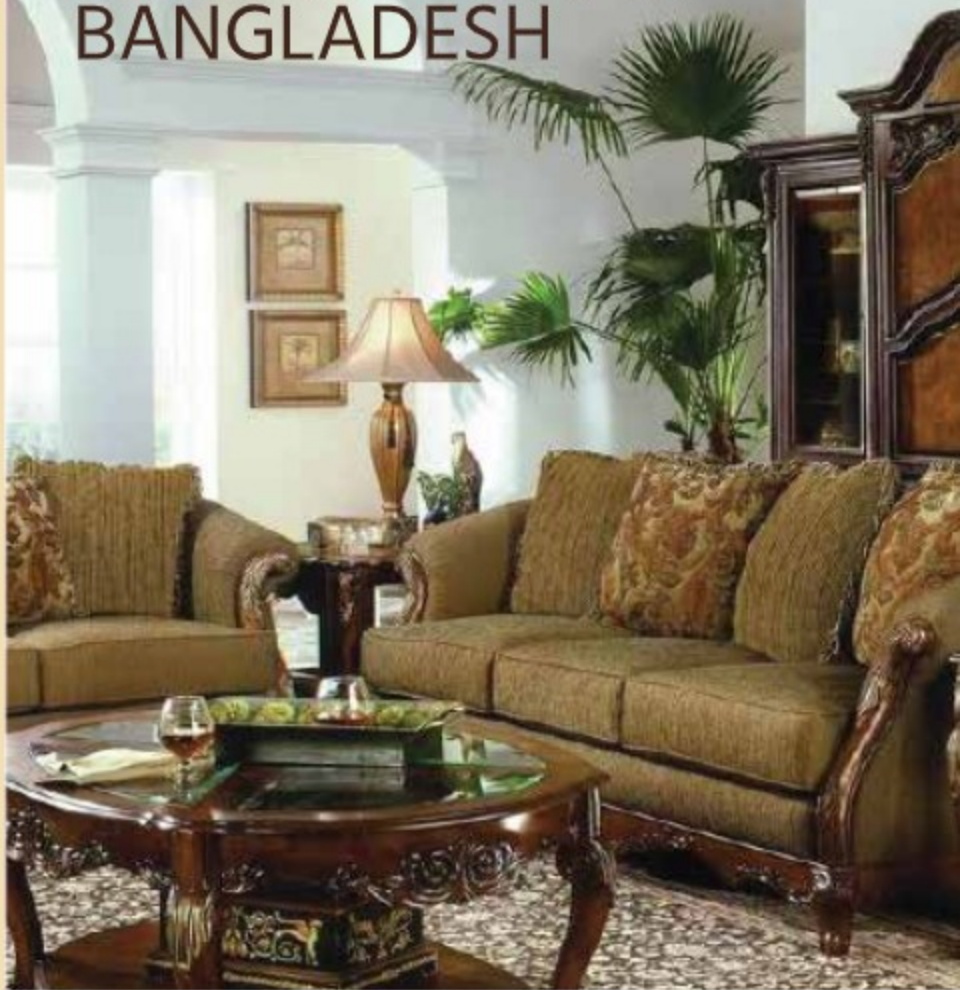


FURNITURE SECTOR STUDY IN BANGLADESH



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Furniture Sector Study in Bangladesh



Small and Medium Enterprise Foundation

Parjatan Bhaban, Level: 6 & 7, E-5/C-1

Agargaon Administrative Area,

Sher-e-Bangla Nagar, Dhaka-1207

Phone: 41024108, 41024109, 41024110

Website: www.smeff.gov.bd Email: info@smeff.gov.bd

Furniture Sector Study in Bangladesh

Researchers:

Muhammad Shariat Ullah, Ph.D.

Professor and Chairman

Department of Organization Strategy and Leadership

University of Dhaka

Muhammad Ismail Hossain, Ph.D.

Professor

Department of Marketing

University of Dhaka

Mohammad Thoufiqul Islam, Ph.D.

Professor

Department of Management

University of Dhaka

Abdullah Al Mahmud, Ph.D.

Professor

Department of Banking and Insurance

University of Dhaka

Gazi Mohammad Hasan Jamil, Ph.D.

Professor

Department of Finance

University of Dhaka

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Foreword

Small and Medium Enterprises (SMEs) are recognized for their inherent contribution to economic growth and creating employment opportunities globally. Both developed and developing countries embrace that SMEs have become one of the key instruments to achieve sustainable economic growth. SMEs represent about 90% of business and more than 50% of employment worldwide and formal SMEs contribute up to 40% of national income (GDP) in emerging economies. Small and Medium Enterprise Foundation (SMEF) was established with a view of creating an enabling environment for the SME sector development to alleviate poverty, generate employment and thereby accelerate economic growth.

The significant activities of SME Foundation are executing the SME policy strategies adopted by the Bangladesh Government, policy advocacy and intervention for the development of SMEs, easing the way of getting financial supports for SMEs, providing skill development and capacity building training, facilitating adaptation with appropriate technologies and access to ICTs, providing business support services etc. Besides, the foundation is administering wide-ranging support to the existing and potential women entrepreneurs with a view of bringing them into the mainstream business community.

Nowadays, Furniture has become indispensable products for our home and office use. The recognition of the furniture sector as a priority sector in the Industrial policy-2016 and as an export diversification sector in the Industrial policy-2022 highlights the importance of this sector in the country's economy.

Realizing the importance of this sector, SME Foundation have conducted this Furniture Sector Study. The completion of the furniture sector study is a significant step towards identifying the challenges faced by this sector and designing appropriate intervention programs to address them.

The objective of this study is to explore the comprehensive scenario of the furniture sector as well as to identify possible initiatives to address the key challenges of this sector. This study covered various issues of possible interventions like policy advocacy, capacity building, access to finance, access to Information and Communication Technology, technology development, up-gradation and transformation, business support services etc. for the development of this sector. Hence, the SME Foundation felt the need to publish the study report to disseminate the findings to the stakeholders in order to design appropriate interventions/programs of the sector.

Finally, I would love to say that, this Furniture Sector Study and publishing the findings is really a good effort. I hope this publication will be useful to the policymakers, practitioners, academician, researchers, and relevant stakeholders in reviewing the existing constraints and policies for the development of this sector. And last but not the least, a heartfelt thanks to all related to this publication for their contribution.

Dr. Md. Masudur Rahman
Chairperson, SME Foundation

Acknowledgement

Every sector has unique features and requires insights from all relevant stakeholders. Keeping the sectoral variation in consideration and to uncover the in-depth scenario of the Furniture Sector in Bangladesh, this study is implemented by the SME Foundation. First of all, we express our profound gratitude to the Research Working Committee of the SME Foundation. Producing this book would have been absurd without cooperation from the members of the SME Foundation, and we thank them for their involvement. They have been very instrumental and supportive throughout the study period. We also thank the representatives from industry associations, furniture firms, the National Board of Revenue, Central Bank, and Commercial Banks for their active engagement in data collection, critical insights, and thoughtful comments during the validation workshop.

We convey our heartiest thanks to the participants in the survey, focus group discussion, interviews, and consultation meetings. We also express our gratitude to the data collection team from the University of Dhaka for their dedication and sincerity.

Research Team

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List of Abbreviation

BBS	Bangladesh Bureau of Statistics
BDT	Bangladeshi Taka
CSIL	Centre for Industrial Studies
FGD	Focus Group Discussion
GDP	Gross Domestic Product
HS	Harmonised System
KII	Key Informant Interview
MSME	Micro Small and Medium Enterprise
NBFI	Non-Banking Financial Institution
NGO	Non-Government Organisation
SME	Small and Medium Enterprise
SMEF	Small and Medium Enterprise Foundation
ToR	Terms of Reference
VAT	Value Added Tax
VER	Voluntary Export Restraint

EXECUTIVE SUMMARY

The furniture industry in Bangladesh makes multifaceted contributions to the economy, including value addition, employment generation, export earnings, import substitution, and poverty alleviation. Besides, this is one of the few industries in Bangladesh with high growth potential in local and global markets. Hence, the Industrial Policy 2016 has classified Bangladesh's furniture sector as one of the 'Thrust Sectors'. However, this industry requires more support for hard and soft resources from the government and other related stakeholders. Real-time information relating to this industry is hardly evident, making it challenging to frame time-befitting policies and allocate resources to this industry. The current research aims to serve this end by conducting a sector study under the financial support of the Small and Medium Enterprise Foundation (SMEF). A team of researchers from the Faculty of Business Studies, University of Dhaka, conducted this sectoral study based on the ToR prepared by SMEF.

This research aims to offer a comprehensive scenario and identify possible initiatives in the furniture sector to respond to some of the key challenges currently affecting the industry. In particular, this study intends to unearth the demand and supply scenario, current market performance, market growth, global business trends, barriers, prospects, technology, human resource development status, and value chain and then provide action plans for stimulating the development of this sector.

This study collected both primary and secondary data. The primary data were collected through a survey, focus group discussion (FGD), and key informant interviews (KII). As many as 426 firms from 47 upazilas across the eight divisions were used as sample response units for the survey. A questionnaire was used as an instrument, which was pre-tested and distributed for collecting data. This study also conducted 8 FGDs in 8 divisional cities through developing an FGD protocol. The FGDs included diverse industry stakeholders, furniture manufacturers, related and support service providers, associations, supply chain partners, representatives from commercial banks, and policymakers such as the Export Promotion Bureau, Bangladesh Bank, and the National Board of Revenue. This study also conducted 15 key informant interviews. Secondary data were used from premier data sources such as the Bangladesh Bureau of Statistics, Bangladesh Bank, SMEF, Export Promotion Bureau, and Bangladesh Investment Development Authority. This study also consulted books, journals, and other published materials to substantiate its findings.

One of the major aspirations of this study was to determine the market size of the furniture industry. Undoubtedly, it was a major challenge for this study as no structured data was available from public sources. This study thus accommodated insights collected from the survey, KII, FGD, and some available published sources from the EU, IDLC, association leaders' remarks in publications, and government authorities. Considering all the primary and secondary data from these diverse sources and consequent meticulous analysis reveals the furniture market size as BDT 25,000 crores,

and the total number of firms stands to be 70477. This study also shows that the number of micro furniture enterprises having an employee number of 5 or less decreased. In contrast, enterprises with more employees increased over the years. However, around 40 percent of furniture enterprises suffer from the availability of their showroom.

From the raw material sourcing point of view, this study finds that the sector can primarily be classified into five segments: solid wood, processed wood, plastic, metal, cane, and rattan. Products from the customer usage category can be categorized as office furniture and home furniture. Except for solid wood, producers in other segments are found to be highly dependent on imported raw materials. Modular, multi-purpose, and space-saving furniture are becoming popular in the global market and the urban areas of Bangladesh, but the opportunities have yet to be explored adequately in Bangladesh. This study also assessed the value chains of the major furniture categories. The analysis reveals that only 22.8 percent of respondents adopt sub-contracting. It is thus apparent that the sector still has opportunities to broaden its scope and follow an efficiency model to extract more value from the current value chains. Considering Porter's five forces model, this study finds that the bargaining power of buyers and suppliers is high, entry barriers are low, substitutes are growing, and competition is also at a high level. The attractiveness of this industry from the entrepreneurial lens is thus not high; however, offering meaningful differences in product offerings can still make a profitable space for new entrepreneurs.

This study finds that the share of furniture exports in Bangladesh's total export earnings is insignificant. In 2018-19, furniture exports accounted for only 0.18 percent of Bangladesh's total exports. The export destinations were the US, Canada, Australia, the UK, the Middle East, Gulf countries, and other Asian countries, like India, Japan, Taiwan, Singapore, Thailand and Vietnam. In the office furniture segment, there is a vast market potential in the USA and Japan. Even though China captures 31.7 percent of world exports, rising labor costs in China may change the export scenario and offer more space to new furniture exporters. Since the industry is labor-intensive, Bangladesh can explore the opportunity. Using an autoregressive model, this study finds that furniture exports from Bangladesh are likely to reach 100 million USD by 2022.

Regarding technology adoption, this sector is still dominated by hand tools (i.e., 50 percent of firms), and only 5 percent use heavy machinery. Some commonly used machinery are bits, joints, randa, circular, drill, bending, welding, and cut saw. Some modern machines used by medium-sized firms are surface planer, thickness planer, combination machine, table saw, spindle moulder, router, CNC, and mortise. To acquire modern power tools, small firms find the hurdle of financing from commercial banks. Entrepreneurs claimed that high-interest rates, excessive requirements for documents, long processing times, and requirements for collateral are some of the key impediments to obtaining a loan from banks. Therefore, many entrepreneurs have a low intention to avail bank loans, and some intend to take loans from NGOs. Besides,

mechanization of the production process requires many new skills, which are currently very scarce in Bangladesh's labor market. Therefore, inter-firm mobility of employees is very high. Most workers enter this sector as an assistant or day labor (DL) and gradually gain on-the-job skills and experience, which, in the long run, start their businesses. There is a shortage of skilled labor in licker, polishing, welding, painting, CNC operation, product designing, and quality control. The average monthly salary of unskilled labor in the furniture industry is BDT 6,000 to 8,000, which can substantially increase if they possess some basic soft and hard skills. Labor unrest was found to be very low in the furniture industry, which is one of the most encouraging aspects of this sector. However, there are some problems in the working environment, such as (a) unplanned factory location, (b) lack of proper fire protection, (c) lack of proper factory environment and safety measures, (d) presence of excessive dust and particles, (e) low-level of compliance practices and (f) low level of employee knowledge on the protection of body parts. This study found evidence of wastage in solid wood, processed wood, metal, cane, and plastic categories. In the solid wood category, 66 percent of respondents said that wastage is high in various production sections like the sawmill, production unit, and distribution stage. From the FGD and KII of this study, it was found that there is meagre progress in the case of digitization and automation in manufacturing units. Only a few medium to large companies, such as Hatil, Akhter, Partex, Otobi, Brothers, Nadia, and RFL, have started automation at different manufacturing stages. Strategic alliance and collaboration are also found to be very low across and within the industry, which resonates that the furniture sector does not have adequate understanding and preparedness for the 4th industrial revolution.

This study identified some of the significant barriers hindering the progress of this industry. The furniture industry lacks a skilled labor force to deal with design, use modern machinery, provide technical solutions, and manage local and global marketing challenges. Other significant barriers include but are not limited to shortage of capital, inadequacy of showrooms, warehousing difficulties, absence of quality certification, negligible forest endowment, low-quality transportation and infrastructure, lack of research and training, and high import tariffs. Facilitators such as banks, government authorities, and related stakeholders thus need to extend their helping hands around these areas. One example of policy advantage and its impact can be seen in Governments' cash incentive programs that encourage some owners to explore the international market. However, only a few owners have enjoyed this facility; thus, we need to reach out to more owners across different segments of furniture manufacturers. This study proposed specific action plans to be undertaken by specific implementing agencies. Successful implementation of the plan would surely give Bangladesh's furniture industry a chance to be a significant player in the world furniture market.

CHAPTER 1 INTRODUCTION

1.1 Study Background

The furniture industry in Bangladesh was primarily developed as a cottage-based industry at its beginning. Since the 1990s, this industry has been gradually transforming from cottage to mechanized production by incorporating modern technologies, innovative designs, and the use of diverse materials. At present, it is considered a full-fledged industry, and the Government of Bangladesh has declared the furniture industry as a 'Thrust Sector' in the Industrial Policy 2016 by considering its contribution to the economy in terms of value addition, employment generation, export potentials, import substitution, technology upgradation and so forth. The local manufacturers have started exporting to many international markets in Asia, Africa, Europe, and North America. The average growth of furniture export has been about 17% annually for the past ten years. Bangladesh's main concentration of furniture manufacturers is mostly evident in the city centers of different urban, semi-urban and peri-urban areas. Some regions or clusters with a sizable number of furniture firms are Dhaka, Chittagong, Sylhet, Comilla, Tangail, Gazipur, Narayanganj, Jessore, Faridpur, and Bogra. Among these cities, Dhaka and Chittagong have the biggest concentration of industrial manufacturing. As per the SME Foundation cluster study report (SME, 2013), the furniture (both steel & wooden) clusters are located in different parts of the country namely Dhaka, Chittagong, Madaripur, Faridpur, Jhenaidah, Kishoregonj, Khulna, Pabna, Gopalganj, Jhalokathi, Habigonj, Pirojpur, Lakshmpur, Feni and Comilla. The main varieties of furniture manufactured in these clusters and other areas of Bangladesh are made of solid wood, processed wood, metal, cane & rattan that are used as home furniture, kitchen furniture, office furniture, hotel and restaurant furniture, hospital furniture, school furniture, factory furniture, outdoor furniture, children furniture, and ship furniture.

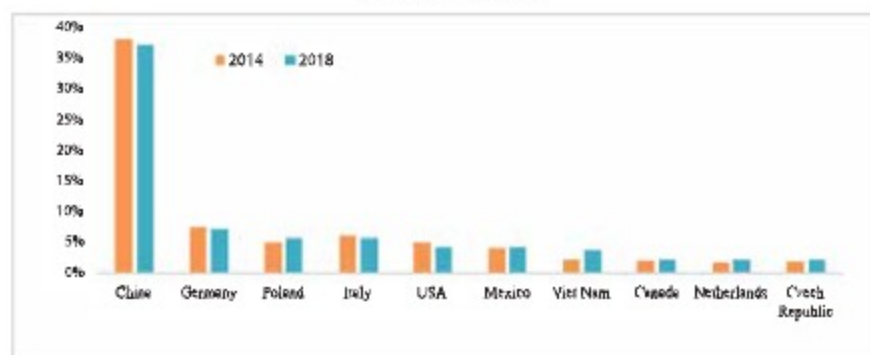
The furniture industry of Bangladesh, although it has been evolving steadily, still appears to be one of the tiniest players in the world furniture market concerning production volume and export. Furniture exports in the world in 2018 were \$259.59 billion (International Trade Center, 2019)¹.

International Trade Statistics reveal that the major furniture producer in the world market is China, which accounted for 37.1% of world furniture exports in 2018. Other major furniture manufacturing countries are the United States, Germany, Italy, India, Poland, the United Kingdom, Japan,

¹Furniture export includes all products under HS 94. International Trade Center (2019), International Trade Statistics: Online.

Canada, and the Republic of Korea (Center for Industrial Studies, 2017).² The evolution of furniture production by geographical region in the past ten years outlined some major issues: from 2007 to 2016, production in Asia and the Pacific more than doubled, while changes in other regions were comparatively minor. Therefore, over half of the world's furniture production occurred in Asia and the Pacific in 2016. The leading furniture importers are the United States, Germany, the United Kingdom, France, and Canada. In the last few years, the increase of imports in the USA (from US\$ 55 billion in 2014 to about US\$ 72 billion in 2018) was the main engine of growth in the international furniture trade. China is the main furniture exporting country, followed by Germany, Italy, Poland, and Vietnam. Figure 1.1 and Figure 1.2 presents a summary statistic of the top 10 furniture exporting and importing countries.

Figure 1.1: Top ten furniture exporting countries and their share in the world market in 2014 and 2018

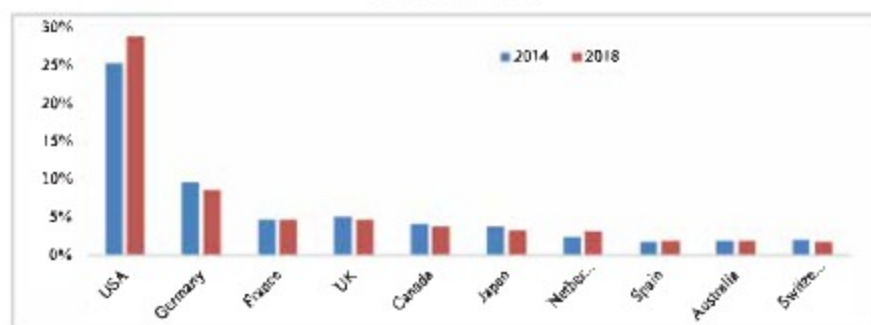


Source: Authors' calculations based on the International Trade Center database

A significant new development in the world furniture market is the declining trend in furniture exports from the USA. Furniture exports from China also dropped in 2016 and 2017. However, China achieved positive growth in furniture exports in 2018. Vietnam has been showing remarkable growth in furniture exports; its share in the world furniture market has increased from 2.1% in 2014 to 3.7% in 2018. Countries like Vietnam, still recovering from its long-lasting war and rebuilding the nation, can be Bangladesh's leading example and inspiration. If Vietnam could achieve a strong presence in the international furniture market within this short span of time, there is no reason for Bangladesh to fail to emerge as a major furniture exporting country in the world.

²Center for Industrial Studies (2017). World Furniture Outlook 2017/2018 New 100 Countries Edition. Centre for Industrial Studies. Retrieved from: <http://www.csilmilano.com>

Figure 1.2: Top ten furniture importing countries and their share in the world market in 2014 and 2018



Source: Authors' calculations based on the International Trade Center database

The worldwide average consumption per capita of furniture is US\$ 72 per year. Total world furniture consumption was US\$ 396 billion in 2016. The number of users in the Furniture and homeware segment is expected to be 785.6 million by 2022³. The fastest-growing region continues to be Asia and the Pacific, although growth in China is slowing down. Prospects for North America are more favorable than for Europe. South America remains to be in a phase of recession. Overall, the international furniture market is growing steadily.

Demand for furniture in Bangladesh is growing due to the economic and social upgradation of mass people. Besides, the booming real estate sector in the country and the rising demand for furniture in the world market contribute to the expansion of the furniture industry in Bangladesh. Nonetheless, the backward supply-chain of this industry heavily depends on imports with a high tariff rate that, in turn, decreases efficiency and competitiveness in international markets. Therefore, expansion and value-chain integration of this industry is essentially required for employment generation and to substitute massive imports of component-parts and get a strong foothold in the lucrative world furniture market.

1.2 Rationale of the Report

SME Foundation is working to create innovative entrepreneurship in different sectors, including furniture. One of the major objectives of the SME Foundation is to identify and report policy anomalies and market and institutional failures that are prejudicial to the legitimate interests of SMEs, based on in-depth research and stakeholder consultations. In light of this objective, this research is initiated to find out the current status of the furniture sector, including but not limited to exploring the number of firms,

³The Statistics Portal, Furniture and Home ware. Retrieved from: <https://www.statista.com/outlook/255/100/furniture-home-ware/worldwide#market-users>

total employment, and contribution to the GDP, barriers towards development, and recommendations to overcome those along with identifying market opportunities and global business trends of this sector. The study's findings are expected to offer impetus to SME Foundation in their advocacy in favor of this sector to the government for making necessary arrangements to ensure sustainable growth.

1.3 Structure of the Report

The rest of the report is structured in the following way: Firstly, the remaining subsections in Chapter 1 presents the objectives and methodology of the study as outlined in the ToR. Chapter 2 provides an estimation of the size and growth of the furniture market. Chapter 3 discusses various segments and products of markets locally and internationally. In chapter 4, the value chain of different furniture sub-sectors is presented. Technology upgradation and labor supply in the age of the fourth industrial revolution are discussed in chapter 5. Chapter 6 presents barriers to the development of the furniture sector in Bangladesh. Lastly, Chapter 7 provides a framework for an action plan for harnessing the development of the furniture sector.

1.4 Objectives

1.4.1 Broad Objective

This study aims to explore the present status and prospects and formulate an appropriate growth strategy for the furniture sector of Bangladesh.

1.4.2 Specific Objectives

The specific objectives of the study are to:

- 1) Determine the current size of the furniture industry (including but not limited to the total number of enterprises, number of employments, investment, contribution to GDP, yearly turnover, etc.) in Bangladesh;
- 2) Present details on different types of product segments and raw materials of the furniture industry;
- 3) Prepare the list of products with the harmonized system (H.S.) code this sector offers.
- 4) Analyze performance and market trends of this sector during the last five years at home and abroad.
- 5) Understand the demand-supply scenario of the furniture industry at home and abroad.
- 6) Explore shares of different product segments of the overall market.
- 7) Describe the overall market and growth of different product segments.
- 8) Determine market size at home and abroad with special emphasis on the market potential/opportunities compared to other countries;
- 9) Analyze global business trends in this sector with future forecasting;

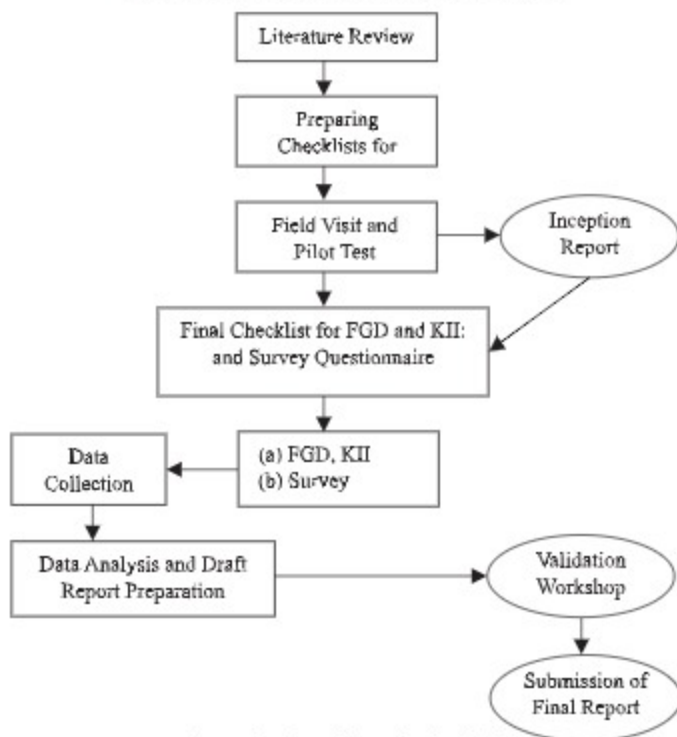
- 10) Identify barriers (tariff and non-tariff barriers, marketing barriers, information barriers, financial barriers);
- 11) Explore technology upgradation, human resource development, and product development;
- 12) Investigate prospects of developing new entrepreneurship in this sector;
- 13) Discuss government policies, incentives, and initiatives;
- 14) Identify policy anomalies, market failures, and institutional barriers;
- 15) Examine the scope of sub-contracting and value chain opportunities regarding national and global perspectives;
- 16) Explore the scope of Innovation in the furniture sector
- 17) Sectoral contribution in meeting the related Sustainable Development Goals (SDGs)
- 18) Find the status of Energy Efficiency (EE) and Resource Efficiency (RE) in the furniture sector;
- 19) Ascertain major issues hindering the growth of this sector;
- 20) Recommend the way forward to mitigate identified barriers with a short, mid, and long-term time-bound action plan.

1.5 Methodology

1.5.1 Research Design

This study has followed the flowchart given in Figure 1.3. The details of each step are described accordingly.

Figure 1.3: Flowchart of research design



Source: Furniture Sector Study (2019)

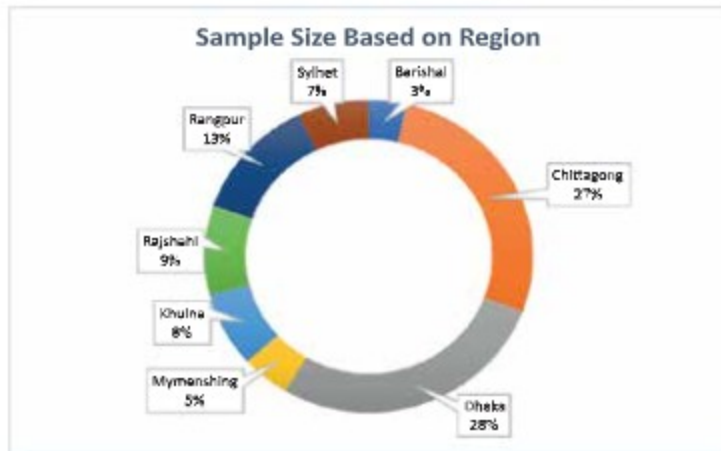
1.5.2 Data Collection and Analysis

This research followed qualitative and quantitative approaches and used primary and secondary data. Primary data were collected by conducting Key Informant Interviews (KII), Focus Group Discussion (FGD), and survey. For the survey, a questionnaire was developed, pre-tested, and modified as per the comments on the inception presentation. The questionnaire is attached in the appendix. A case study on a successful entrepreneur is also presented in the report. Data were analyzed using descriptive tools (quotations, conversations, syntax, charts, cross-tables, etc.) and multivariate techniques.

1.5.3 Population, Sample Size Determination and Sampling Technique

The primary sampling unit was division, the secondary sampling unit was district, and the tertiary unit was upazila. To estimate the number of samples for the survey, this study followed Cochran w.g. (1963) sampling technique. In counting the population, this research has considered micro, small, medium, and large firms while excluding cottage firms. The population was 21,493 (BBS, 2015), and the estimated sample size was approximately 400. Thus, a survey was conducted on 426 firms across 47 upazila in 8 divisions. The distribution of sample firms by Division is presented in Figure 1.4.

Figure 1.4: Division-wise distribution of sample firms (in percent)



Source: Furniture Sector Study (2019)

Survey locations by upazila/thana were selected considering the concentration of furniture firms in the respective Division. Survey locations by district are depicted in Exhibit 1.1, while Table 1 provides the distribution of sample firms across the divisions along with the names and numbers of upazila/ thana.

⁴The formula propounded by Cochran (1963) is as follows: Where, n is the sample size; N stands for the population size; and e denotes the level of precision (95%: $e = 0.05$).

Exhibit 1.1: Location map of the firms surveyed



Table 1.1: Distribution of sample firms across divisions and upazila

Divisions	Upazila/Thana	(Total number of firms in the Division) and the Number of Sample Firms
Barisal	<ul style="list-style-type: none"> • Barisal Sadar-Upazila • Jhalokathi • Neşarabad (svarupkati)-Upazila • Mathbaria Sadar-Upazila 	(680) 20
Chittagong	<ul style="list-style-type: none"> • Chandpur Sadar-Upazila • Kasba Upazila • Feni • Double Mooring Thana • Hathazari Upazila • Mirshari Upazila • Debidwar Upazila • Adarsha Sadar- Upazila 	(5874) 104
Dhaka	<ul style="list-style-type: none"> • Badda Thana • Jatrabari/ Kadamtali • Mirpur • Savar Upazila • Shyamnagar Thana • Gazipur Sadar- Upazila • Kaliakair Upazila • Sengair Upazila • Narayanganj Sadar • Faridpur • Madaripur • Kishoregonj 	(6964) 130
Mymensingh	<ul style="list-style-type: none"> • Mymensingh Sadar • Durgapur Upazila 	(865) 20

Khulna	<ul style="list-style-type: none"> • Bagerhat Sadar • Khulna Sadar • Jessore Sadar • Alamdanga Upazila • Abaynagar Upazila • Daulatpur Thana • Jhenaidah 	(1665) 45
Rajshahi	<ul style="list-style-type: none"> • Bogra Sadar Upazila • Pabna Sadar • Pachbibí Upazila • Ishwardi Upazila • Baoliá Upazila 	(1953) 25
Rangpur	<ul style="list-style-type: none"> • Aditmari Upazila • Dinajpur • Gaibandha • Kurigram • Lalmonirhat Sadar Upazila • Mithapukur Upazila 	(2803) 54
Sylhet	<ul style="list-style-type: none"> • Habiganj Upazila • Kulaura Upazila • Sylhet Sadar Upazila 	(1544) 28
Total		426

Note: The total number of firms in the Divisions was collected from BBS (2015).

1.5.4 Focus Group Discussion (FGD)

Eight FGDs were conducted in eight divisions. The locations of FGD were Dhaka, Mymensingh, Feni, Sylhet, Barisal, Chuadanga, Rangpur, and Pabna. FGDs were conducted with diverse stakeholders, including furniture manufacturers, related and support service providers, representatives from commercial banks, and policymakers, including representatives from the Export Promotion Bureau, Bangladesh Bank, and the National Board of Revenue. Altogether, 86 respondents participated in the FGDs. The type of participants by their professions is shown in Table 1.2, and the list of participants is provided in Annex 1. A discussion guide for the FGD participants was prepared and shown in Annex 2. This research used audio devices and the recorded output for transcription purposes. A summary of the FGDs is presented in Annex 3.

Table 1.2: List of FGD participants by profession

Profession of the Participants	Number of Participants	in (%)
Proprietors	51	59
Managers	4	5
Members of the Industry Association	5	6
Representatives from Commercial Banks	13	15
Representatives from the Central Banks	2	2
Representatives from the NBR	1	1
Others (Logistic partners, experts)	10	12
Total	86	100

Source: Furniture Sector Study (2019)

Among the participants in FGD, 59% were owners, and 5% were managerial-level employees. 15% of the participants were from commercial banks who work in various capacities. About 3% came from the policy-making institutions, including Bangladesh Bank and the National Board of Revenue.

1.5.5 Key Informant Interview (KII)

KII was conducted as part of the primary data collection and validation. Altogether, 15 KIIs were conducted. In KIIs, several notable stakeholders were interviewed, and their opinions were sought using a KII checklist. Table 1.3 summarizes KII participants, and Annex 5 shows the list of participants.

Table 1.3: KII participants

Category	Number of Respondents
Owners / Managing Directors of Furniture Firms	8
Members of the Industry Association	2
Institutional Representatives (NBR, Bangladesh Bank, EPB)	5
Total	15

Source: Furniture Sector Study (2019)

1.5.6 Interview Procedure

The interviews were semi-structured. Questions, including tentative follow-up questions, were prepared in advance, and adjustments were made as the situation arose during the interview. Interviews were digitally recorded and noted on paper with the permission of the interviewees. A detailed interview protocol was prepared to ensure digital recording, written consent, and assurance of confidentiality. The interviews were conducted over eight weeks during the last quarter of 2018.

CHAPTER 2 FURNITURE MARKET SIZE AND GROWTH

2.1 Estimation of Bangladeshi Furniture Market Size

Researchers worldwide generally adopt primary and secondary research to estimate the demand for or market potential of goods or services. Compared to primary research, they rely more on secondary research due to the cost and simplicity of implementing the estimation technique (Waheeduzzaman, 2008; Stuart et al., 2014; Curtis and Bradshaw, 2017). Nonetheless, no estimation technique is flawless, irrespective of the robustness in estimation, the model's predictive power, design and implementation feasibility, and the cost/benefit of the research. Improvisation and adoption of creative measures resulting in suboptimal solutions (Amine & Cavusgil, 1986; Armstrong, 1970) need to be accepted especially if there is a dearth of market-related information.

Currently, there is hardly any primary data representing Bangladesh's furniture industry. This is one of the first attempts to determine the market size of this industry. However, the inadequacy of the number of collected data compared to the total number of firms operating in this industry forces this study to rely on secondary data to estimate the market size of the furniture industry. This study collected some market size-related data from its employed qualitative tools. Therefore, it will use qualitative (primary data) and quantitative (primary and secondary data) data to estimate the market size of Bangladesh's furniture industry.

According to the European Union (EU) technical report (2012), the furniture industry market was valued at 67 billion in 2012, and the number of firms was around 71034. Taking into account the value of the market at that time, we can calculate the present value of the market with the help of the following formula.

$$FV = PV \times [1 + (i/n)]^{(n \times t)}$$

Where:

FV = the future value

PV = the present value

i = the interest rate or growth rate

t = the number of years to take into consideration

n = the number of compounding periods of value per year

The relevant information relating to the furniture industry, as presented in the EU technical report (2012), can be used to calculate the current market size. The relevant information for that purpose is as follows:

FV = the future value

PV = 67 billion

$i = 19$ percent

$t = 7$

$n = (1 \times 7)$

Applying the formula in the current context, the present value of the 67 billion with a 19% annual growth rate is $67(1+.19)^7$ or BDT 226.41 billion or BDT 22,641 crores from 71034 enterprises. Based on an in-depth interview with one of the officials of the National Board of Revenue, this study finds that around 125,000 furniture manufacturers are operating in Bangladesh. Considering new information, the furniture market stands at BDT 398.41 billion or BDT 39,841 crores. However, this figure is inconclusive unless we cross-validate with other secondary data, which is done in the following.

IDLC Finance Ltd. (the market leader in providing non-banking financial services in Bangladesh) (2017) in their study found that around 75000 enterprises are involved in the furniture industry. This study conducted FGDs across all the divisional cities of Bangladesh and thus can be considered comprehensive, at least in terms of coverage from the perspective of qualitative research approach. According to the FGD participants and the quantitative data we have collected across all the divisional cities, 65.7% of the furniture manufacturers of their respective divisions are non-branded and are micro-level firms with an average monthly production value of BDT 2,50,000 or less. It is found that another 14.1 percent of the manufacturers have an average monthly production of BDT 3,75,000. These two groups (non-branded and micro enterprises) of firms can be considered micro-level organizations. Another 9.6 percent and 4.5 percent of the organizations have an average monthly production value of BDT 7,50,000 and BDT 25,00,000, respectively. Our study found that 0.7 percent of furniture manufacturing organizations in Bangladesh have an average monthly production value of over BDT 50,00,000. About 5.4 percent of the survey respondents did not disclose their average monthly production information. Accommodating these qualitative and quantitative insights of this study, the market size of Bangladesh's furniture industry can be calculated. Nonetheless, as there are discrepancies in the number of furniture manufacturing organizations, as evident in the IDLC report, NBR prediction, and the prediction made by the EU, we are calculating the market size by considering all these predictions.

This study presented the estimated market size based on the EU technical report in the preceding paragraph. Next, the market size would be estimated based on the following information: (a) This study estimation is based on the (i) prediction of the number of firms by IDLC and (ii) data collected for this study on the average monthly production of firms. (b) This study estimation

is based on the (i) prediction of the number of firms by NBR and (ii) data collected for this study on the average monthly production of firms.

- (a) Market size estimation as per IDLC prediction of the number of furniture manufacturers and monthly production data collected in this study.

Table 2.1: Market size estimation based on IDLC prediction and monthly production data collected in this study

Categorization (in terms of number of employees)	Number of firms		Monthly average production	Total monthly production
Micro Firms (5 or less)	65.7% of 75000 firms =	49,275	125000	616 crores
Micro Firms (6-10)	14.1% of 750000 firms =	10575	375000	396 crores
Small Firms (11-15)	9.6% of 750000 firms =	7200	750000	540 crores
Small Firms (16-20)	4.5% of 750000 firms =	3375	2500000	843 crores
Medium Firms (21-50) and more	0.7 % of 75,000 firms =	52	5000000	26 crores
	Total no. of firms = 70477 firms		Total monthly production = 2421	

Source: Furniture Sector Study (2019)

Therefore, the yearly production value is $2421 \times 12 =$ BDT 29,052 crores.

- (b) Market size estimation as per NBR prediction of the number of furniture manufacturers & this study data

Table 2.2: Market size estimation based on NBR prediction and monthly production data collected in this study

Categorization (in terms of no. of employees)	Number of firms		Monthly average production	Total monthly production
Micro Firms (5 or less)	65.7% of 125000 firms =	82125	125000	1026 crore
Micro Firms (6-10)	14.1% of 125000 firms =	17625	375000	661 crores
Small Firms (11-15)	9.6% of 1250000 firms =	12000	750000	900 crores
Small Firms (16-20)	4.5% of 1250000 firms =	5625	2500000	1406 crores
Medium Firms (21-50) and more	0.7 % of 125,000 firms =	875	5000000	437 crores
	Total no. of firms = 118250 firms		Total monthly production = 4430	

Source: Furniture Sector Study (2019)

Therefore, the yearly production value stands at $4430 \times 12 =$ BDT 53,160 crores.

If we consider all the above estimations, we find divergence and proximities among the estimations. In particular, when we take the estimation of NBR regarding the number of firms operating in the furniture industry (i.e., 125,000) and this survey data (i.e., percentage of firms falling in a particular category such as micro, small, medium, and their average monthly production value data) we find the market size as around BDT 53,160 crores. Compared to other estimated market size (i.e., estimation through the prediction of EU and IDLC), this size is way beyond the reasonable limit. Nonetheless, we have taken expert opinions about these estimations for cross-validation.

The related stakeholders of the industry outright reject the estimation based on NBR's prediction of 125000 furniture manufacturers in Bangladesh. We then approached NBR to provide support against their claim that the market has 125000 furniture manufacturers. Unfortunately, the NBR has no fact-based data to support its claim. Meanwhile, this study's estimation of the market size based on EU and IDLC data seems more acceptable to industry-based stakeholders. For example, in one of our key informant interviews, the former BFIOA President Mr. Aktaruzzaman predicted that the market size is 25000 crores. Based on the average market size using IDLC and EU data, it is found that the market size is around BDT 25,000 crores.

Therefore, accommodating all the different estimations done in this study, we conclude that the market size of the furniture industry of Bangladesh is around BDT 25,000 crores.

2.2 Furniture Industry: Growth of Market and Product Segments

The furniture industry has grown a lot, particularly from being a small cottage industry to a full-fledged industry in Bangladesh. Although this study collected data from only over 400 furniture manufacturers of different sizes out of the around 75,000 (EU, IDLC) manufacturers, we still can make some reasonable predictions. We acknowledge that it is difficult to make accurate predictions due to small data size, but for a baseline number, the data seems reasonable. Nonetheless, the data analysis reveals that the size of the enterprises in terms of the number of employees over the years has increased. In particular, the number of firms that employed 5 or fewer employees has decreased from 69 percent to 52.6 percent. On the contrary, the number of firms employing 6 to 10 employees has increased from 18.1 percent to 24.9 percent. This pattern is also evident for firms employing a higher number of employees. Table 2.3 presents a comparative scenario of the changes in the number of employees engaged in furniture enterprises.

Table 2.3: Past and present scenario of furniture manufacturing enterprise in terms of number of employees

Number of Employees	Past		Present	
	No. of Respondents	Percent	No. of Respondents	Percent
5 or Less	294	69.0	224	52.6
6 to 10	77	18.1	106	24.9
11 to 15	24	5.6	37	8.7
16 to 20	1	0.2	14	3.3
20 to 50	9	2.1	21	4.9
More than 50	1	0.2	7	1.6
Did not respond	20	4.7	17	4.0
Total	426	100.0	426	100.0

Source: Furniture Sector Study (2019).

The industry's growth is also evident if we consider the change in their selling premises (Table 2.4). It is primarily assumed that small and micro-level furniture manufacturers primarily dominate the industry, so they hardly have showrooms for showcasing and selling their products. We find a different reality relating to this. This study finds that around 52.1 percent of the respondent furniture manufacturers did not have any showroom in the past. At present, 39 percent of the furniture manufacturer surveyed did not have a showroom for showcasing and selling their products. This drop in percentage clearly shows that the industry is growing significantly, such that the small and micro enterprises also need a showroom to showcase and sell their products.

Table 2.4: Changes in the selling premises over the years in the furniture sector

Availability of showroom	Past		Present	
	No. of Respondents	Percent	No. of Respondents	Percent
Yes	201	47.2	240	56.3
No	222	52.1	166	39.0
No response	3	0.7	20	4.7
Total	426	100.0	426	100.0

Source: Furniture Sector Study (2019).

Regarding the amount of capital invested or used to establish a furniture manufacturing enterprise, this study reveals that around 89.2 percent of the enterprises invested BDT 10,00,000 or less to establish the enterprise (Table 2.5). Now, this percentage drops down to 74.4 percent. In contrast, the rate of firms investing a higher amount of capital (BDT 5 million or more) has substantially increased in the past. In particular, the percentage of firms investing BDT 10,00,000 to BDT 20,00,000 increased from a mere 2.1 percent to 9.4 percent. The rate of firms investing BDT 20,00,000 to BDT 50,00,000 has also increased from 2.3 percent to 7.3 percent. The percentage of firms investing more than BDT 50,00,000 has risen however, the growth

rate in that strata is not as high as seen in earlier strata. Table 2.5 presents a comparative scenario relating to this.

Table 2.5: Changes in the amount of capital invested over the years in establishing furniture manufacturing enterprise

Amount of Capital (BDT)	Past		Present	
	No. of Respondents	Percent	No. of Respondents	Percent
1000000 and less	380	89.2	317	74.4
1000001 to 2000000	9	2.1	40	9.4
2000001 to 5000000	10	2.3	31	7.3
5000001 to 10000000	4	0.9	7	1.6
More than 10000000	6	1.4	10	2.3
Do not response	17	4.0	21	4.9
Total	426	100.0	426	100.0

Source: Furniture Sector Study (2019)

The furniture industry also seems to grow, relating to their arrangement of funds for investment. In the past, they primarily relied on their personal sources of funds for their business's funding requirements. The reliance on private sources is still dominant but decreased to a significant percentage. In particular, the rate drops from 55 percent to 44 percent. In contrast, the reliance on personal sources and bank loans regarding arranging funds for their business increases from 13 percent to 22 percent. Although this is promising, it is still far from this industry's sustainable development.

This study also collected data on the furniture manufacturing enterprises' historical and present average monthly income. The data analysis reveals that around 66.4 percent of the surveyed enterprises had an average monthly income of BDT 25,000 or less. However, such a percentage drops down to 36.2 percent today. On the contrary, the percentage of firms having an average monthly income of BDT 25,001 to BDT 50,000 increased from 21.2 percent to 39 percent. A similar pattern is also evident for firms earning a monthly average income of BDT 50,001 to BDT 1,00,000 and more than BDT 1,00,000. In particular, the percentage increased from 7.8 percent to 16.1 percent and 4.6 percent to 8.7 percent, respectively. Overall, it can be conceived that the monthly income of firms in the furniture industry has increased over the period. Table 2.6 presents the changes in income of furniture manufacturers over the years.

Table 2.6: Changes of income of furniture manufacturers over the years

Average Monthly Income	Past		Present	
	No. of Respondents	Percent	No. of Respondents	Percent
25000 and less	273	64.1	146	34.3
25001 to 50000	87	20.4	157	36.9
50001 to 100000	32	7.5	65	15.3
Above 100000	19	4.5	35	8.2
Do not response	15	3.5	23	5.4
Total	426	100.0	426	100

Source: Furniture Sector Study (2019)

This study asked sample organizations to reveal data relating to their monthly production, profit margin, and net profit to get a detailed financial picture. This study finds that about 66 percent of the furniture manufacturers' average monthly production value is about BDT 250,000 or less (Table 2.7). The percentage of manufacturers manufacturing monthly up to BDT 10,00,000 worth of furniture stands around 24 percent. This percentage goes down to only 0.7 percent if we consider the furniture manufacturer that produces BDT 50,00,000 or more monthly.

Table 2.7: Average monthly production of furniture manufacturers

Monthly Production (Value in Tk.)	No. of Respondents	Percent
250000 and less	280	65.7
250001 to 500000	60	14.1
500001 to 1000000	41	9.6
1000001 to 5000000	19	4.5
More than 5000000	3	0.7
Do not response	23	5.4
Total	426	100.0

Source: Furniture Sector Study (2019)

Regarding the profit margin enjoyed by the manufacturers, around 34 percent of the respondent furniture enterprises are enjoying a profit margin of 5-10 percent, while approximately 31 percent are enjoying a margin of 10-15 percent (Table 2.8). Around 14 percent of enterprises earn a 10-20 percent profit margin, and 9 percent achieve more than 20 percent profit margin.

Table 2.8: Profit margin of furniture manufacturer

Profit Margin	No. of Respondents	Percent
5-10%	144	33.8
10-15%	131	30.8
10-20%	60	14.1
More than 20%	40	9.4
Loss	3	0.7
Do not response	48	11.3
Total	426	100.0

Source: Furniture Sector Study (2019)

Regarding monthly net profit, the study revealed that around 43 percent of furniture manufacturers earn a net monthly profit of BDT 25,000 or less (Table 2.9). Approximately 24 percent of the respondent furniture manufacturers make monthly net profits between BDT 25,001 to BDT 50,000, while around 9 percent earn a monthly net profit between BDT 50,001 to BDT 1,00,000. Only about 2 percent and 1 percent of the respondent furniture manufacturers make a monthly net profit of over BDT 1,00,000 and BDT 2,50,000, respectively. Overall, the furniture manufacturer seems to be not enjoying a hefty profit from their operation. Regarding the financials as presented, we acknowledge that people are skeptical about disclosing their financial information.

Table 2.9: Monthly net profit earned from operations by furniture manufacturers

Monthly Net Profit	No. of Respondents	Percent
25000 and less	183	43.0
25001 to 50000	103	24.2
50001 to 100000	37	8.7
100001 to 250000	7	1.6
More than 250000	3	0.7
Do not response	93	21.8
Total	426	100.0

Source: Furniture Sector Study (2019)

Regarding ownership of furniture manufacturing entities, this study finds that half of the furniture businesses do not have a factory (Table 2.10). This resonates that these furniture businesses are sourcing their furniture for sale under any subcontracting arrangement. It could be a sale-based subcontracting where a manufacturer uses a commercial showroom to sell their products. This study reveals that almost 41 percent of furniture businesses do not have a showroom to showcase their products (Table 2.11). It could be manufacturing-based subcontracting, where the showroom received an order for particular furniture and then subcontracted that to a manufacturer. Nonetheless, half of the industry relies on subcontracting for sourcing and selling their products.

Table 2.10: Ownership of factory in furniture industry

Ownership of factory	No. of Respondents	Percent
Yes	211	50.0
No	211	50.0

Source: Furniture Sector Study (2019)

The industry has evolved significantly relating to the target market served by them. This study finds that in the past, furniture manufacturers were primarily serving the needs of household customers. In particular, this study finds that 89 percent of the surveyed furniture manufacturers were serving the needs of household customers. The percentage of firms serving primarily

household and some office furniture requirements was only 4 percent. This scenario has changed significantly in recent times. Among the surveyed furniture manufacturers, 45 percent of the manufacturers are fulfilling the needs of only household customers while 55 percent serve the needs of both households and offices.

Table 2.11: Ownership of showroom in furniture industry

Availability of Showroom	No. of Firms	Percent
Yes	240	59.1
No	166	40.9

Source: Furniture Sector Study (2019)

2.3 Review of Current Policy

2.3.1 SME Policy 2019

In 2019, the government devised the SME policy with an appropriate action plan to ensure supportive policies, a conducive environment, access to finance, and business support services for SMEs and potential entrepreneurs. As the furniture sector is one of the significant representatives of the country's SMEs, SME policy 2019 is designed to boost this sector like other SMEs.

To support the development of the furniture sector, effective policies are designed in SME policy 2019 to ensure business and related supporting services, for instance, access to finance, enhancing appropriate marketing channels for furniture products, increasing the use of information, communication, and other technologies and innovations, designing appropriate skill development training program, and so on (SME Policy, 2019).

To ensure the robust development of the furniture sector and its entrepreneurs, SME development strategies have been devised based on three key features: ensuring appropriate policies and a supportive environment, effective and sustainable organization, and providing financial and business-related support services to potential underprivileged entrepreneurs (SME Policy, 2019).

Chapter four of SME Policy 2019 articulates ten strategic goals under implementation strategies for the development of SMEs, including the furniture industry, i.e., improving business and investment environment while simplifying legal and administrative framework, rationalizing tax policy, and giving incentives for export-centric companies, increasing scope of access to finance with the reduced interest rate, enhancing competitive capacity while supporting its products into the markets, improving cluster-based network and infrastructure development, promoting the use of information and other communication technologies, introducing appropriate entrepreneurial education and skill development training and program

including a special training program for women entrepreneurs, and finally, establishing effective linkage industries for this sector (SME Policy, 2019). This chapter also considers establishing an environment-friendly industrial waste management system for SMEs and institutionalizing SME statistics by conducting research and development, and indeed, the furniture sector is also under these strategies.

2.3.2 Tariffs and Duties of the Furniture Sector

Under chapter four of export diversification in Export Policy of 2018-2021, the furniture sector is included for the afterward benefits and facilities to be provided as the highest priority sector, i.e., advancing loans at the reduced interest rate, tax rebate, financial benefits, and subsidiaries for utility services, export credit with the lower interest rate on soft terms, priority basis air transportation facilities, bond facilities, facilities for setting ancillary industries, duty-free import of equipment for setting up compliant industry and providing assistance for production and marketing of products. It also endorses the assistance of exploring global markets and attracting foreign investments (EPB, 2018).

However, importing raw materials from foreign countries is becoming the prime backlog of the furniture sector. According to the furniture industry owners, around 60% of raw materials are imported from different countries. The export policy declares assistance in developing backward linkage industries of the furniture sector, but it will take time, so the sector needs to depend on imported inputs. There are usually two types of wood used as raw materials by furniture manufacturers: solid and processed timber. To become sturdy and aesthetically appealing, the solid wood needs to be seasoned, but there are very few seasoning plants available in Bangladesh, which some specific furniture manufacturers own. Oppositely, the processed wood needs a good Lacquer/coating facility, which solely the mid-high-tier furniture manufacturers have. For this, the rest of the manufacturers need to depend on imports for these woods. Besides woods, other raw materials are laminated board, wrought iron furniture, processed wood & medium density fiber wood, rattan bamboo, and particle-board. However, most of these raw materials must be imported from different countries. Of the woods, barmatic wood comes from Myanmar, and hardwood comes from Africa. However, tariffs and import duties on these raw materials are excessively high. The import duty on all solid wood is 10.72%, and the duty on particle wood is 92.3% (Rahman, 2016). The duty on solid timber is low, but considering the cost and environmental reasons, the use of solid wood furniture has recently been reduced worldwide, while processed wood is becoming the primary raw material to produce furniture in the global market. But the import duties on processed wood are quite high. Therefore, high import tariffs on different types of raw materials may hinder the furniture sector from gaining competitiveness in the global export market.

2.3.3 Tax and VAT Policy of the Furniture Sector

Certain goods and services were exempted from Value Added Tax in 2020-21 after passing the Finance Act of 2020 due to promoting a particular sector and devoting to the country's export basket diversification. These VAT-exempted goods and services 2020-21 are mentioned in the first schedule of the Value Added Tax and Supplementary Duty Act 2012. For its massive potential of the furniture sector, under heading number 4401.31.00 and 4401.39.00 of 41.01, wood in chips or particles; sawdust and wood waste and scrap, whether or not agglomerated in logs, briquettes, pellet, or similar forms are exempted from VAT. Wood in the rough, whether or not stripped of bark sapwood or roughly squared, is also exempted from VAT under the heading of 44.03 (Rasel, 2020). Therefore, the VAT exemption facilities may gear the development of a highly potent furniture sector.

Particleboard is subjected to 20% Supplementary duties under heading no 44.10. Similarly, oriented strand board and similar board, fibreboard, hardboard, plywood, veneered panels, and similar laminated board are also subjected to 10% SD under the heading of 44.10 to 44.12 (Rasel, 2020). The furniture-selling showroom is also subject to 7.5% VAT under the heading of S024 (Rasel, 2020).

However, according to Bangladesh Customs (NBR), the total tax incidence for fuelwood in logs, billets, twigs, faggots or similar forms, coniferous and non-coniferous, coniferous and non-coniferous wood in chips or particles is 32.4%. Similarly, wood pellets, sawdust, and wood waste and scrap other than wood pellets have a total tax incidence of 10%. Sawdust and wood waste and scrap are not agglomerated, and wood charcoal (including shell or nut charcoal), whether or not agglomerated, are subjected to 32.4% of total tax incidence (NBR, 2020). Thus, the rate of total tax incidence is progressively high, which may hinder the development of the furniture sector in Bangladesh. The concerned authorities, therefore, need to consider decreasing the total tax incidence rate incrementally and help the furniture sector to emerge as the RMG sector.

CHAPTER 3 PRODUCTS AND MARKETS

3.1 Product Segments

Furniture products can be classified into several segments in terms of their function, application, use of raw material to manufacture them, etc. According to Dell'Era, Magistretti, and Verganti (2018), product innovation greatly helps the furniture industry survive despite the effect of globalization felt by countries across the globe. For example, artistic acumen helps the Philippines to be among one of the world's best manufacturers of fine furniture which include but not limited to traditional, casual contemporary and highly experimental furniture. One of the secrets of their success is the type of wood they use to manufacture the furniture called narra. The use of narra in manufacturing specific furniture, such as kitchen cabinets, made it world famous because of its durability, the beauty of its grain, and the beautiful finish it offers (Sedliačiková et al., 2015). In addition, narra is used to manufacture high-quality furniture, peels and veneers, paneling, and parquet floors. Arts and crafts items are also increasingly using this kind of wood. Using such wood gives the Philippines a competitive edge over its competitors. Bangladesh is not as good a player as the Philippines regarding its furniture portfolio. However, it can certainly follow the path the Philippines chose, which is for product offerings to be based on some positively differential resources or skills.

Furniture can be classified in many ways. In one form, furniture is classified as leg items, including chairs, tables, and beds; and the main products include cabinets, desks, wardrobe cases, drawers, dressers, and kitchen storage units. The furniture industry of Bangladesh primarily supplies most of these items, and to manufacture these items, diverse raw materials are used: solid wood, plastic, cane, metal, and processed timber. Sometimes manufacturers also use a combination of these materials to manufacture the furniture; for example, processed wood is used with metal to manufacture beds.

This study finds that most of the surveyed firms in the country produce solid wood furniture. Table 3.1 reveals that out of the 426 firms across 8 divisions, 203 make furniture from solid wood, while 61 make furniture from processed wood. Firms using processed wood are mostly located in Dhaka and Chittagong. Among the firms surveyed, 130 firms manufacture products using a mix of raw-materials. Firms that use a mix of raw-materials are also mostly located in Dhaka and Chittagong. Only 3 surveyed firms were found to use primarily plastic, and 7 firms use cane as raw materials. Cane furniture manufacturers were based mainly in Mymensingh, Sylhet, and Dhaka division.

Table 3.1: Distribution of sample firms by use of materials

	Rajshahi	Rangpur	Mymensingh	Dhaka	Khulna	Barisal	Sylhet	Chittagong	Total
Solid Wood	10	28	5	64	25	10	5	56	206
Processed Wood	2	6	10	20	6	-	3	13	61
Plastic	1	-	-	-	-	-	2	-	3
Cane	-	-	4	1	-	-	2	-	7
Metal	-	2	-	8	2	-	2	5	19
Multiple	9	18	1	37	12	10	14	28	130
Total	22	54	20	130	45	20	28	104	426

Source: Furniture Sector Study (2019)

3.1.1 Sources of Raw Materials (import status)

The furniture industry of Bangladesh is shifting its focus to reducing the dependency on timber/solid wood for raw materials to processed wood. The furniture manufacturers are sourcing processed wood primarily from international and local sources. Furniture manufacturing also requires other tools and ingredients, primarily sourced from overseas. In particular, around 60% of raw materials in the furniture sector are imported from different countries. Timber, wood coating materials, hardware & accessories, world-class fabrics, etc., are major importable items (The Daily Star, 2015).

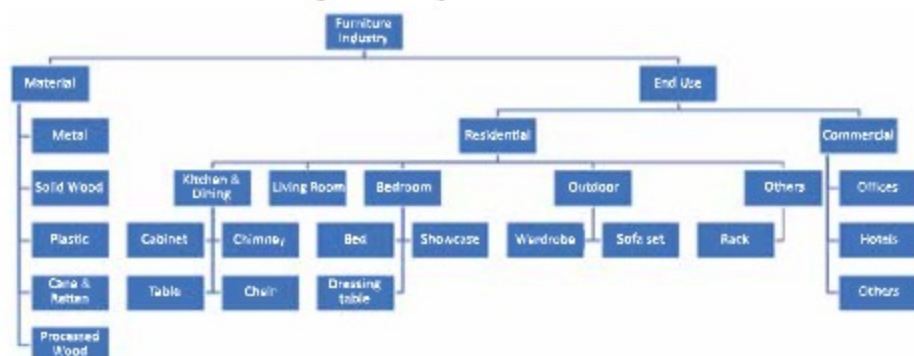
Table 3.2 unveils that among all the firms surveyed in different districts, the firms in Mymensingh district are not usually dependent on imports. They use their resources for the manufacturing and finishing processes. The firms in Sylhet have the highest penetration of using imported materials, whereas firms located in Rangpur have the lowest importing records. As firms in Sylhet mainly manufacture furniture using mixed materials, they must use foreign machines, fabrics, metals, and accessories. Because of the availability of resources, most of the firms in the Dhaka district rely less on imported materials.

Table 3.2: Raw materials import status

	Don't Import	Import	Total
Rajshahi	14	8	22
Rangpur	53	1	54
Mymensingh	20	-	20
Dhaka	109	12	121
Khulna	39	6	45
Barisal	11	9	20
Sylhet	11	17	28
Chittagong	92	11	103
Total	362	64	426

Source: Furniture Sector Study (2019)

Figure 3.1: Segments of furniture



Source: Furniture Sector Study (2019)

As most of the surveyed firms still depend on local sources, it would be worthwhile to look at the forestation status of Bangladesh. Forests are the main sources of solid wood supply for Bangladesh's furniture industry. Bangladesh has about 2.6 million hectares of forest land area, of which 1.6 million hectares are under the control of the Forest Department, and another 0.73 million un-classed state forests are now under the control of district councils (FD, 2010; 2016). Bangladesh also has privately owned village forests with an area of 0.27 million hectares. The state-owned forests are mostly seen in concentrated areas, particularly in the 12 districts in the eastern and south-western regions of the country, representing over 90 percent of the state-owned forests (BBS, 2016). About 84 percent of the forest area is considered natural, while the remaining 16 percent is considered plantation forest. It was presented in Tables 3.1 and 3.2 that firms from Chittagong mostly use solid wood in furniture production, and they import less than 10 percent of their solid wood requirements from overseas. This is because of the existence of the largest hill forest in the country in that region (i.e., the Eastern part of the country has 0.67 million hectares of hill forest). Firms in Dhaka that manufacture solid wood furniture also collect their supplies mostly from domestic sources. Their sources are primarily from 2.6 million hectares of forest land and 0.27 million hectares of village forest.

3.2 Products by Types of Material Usage

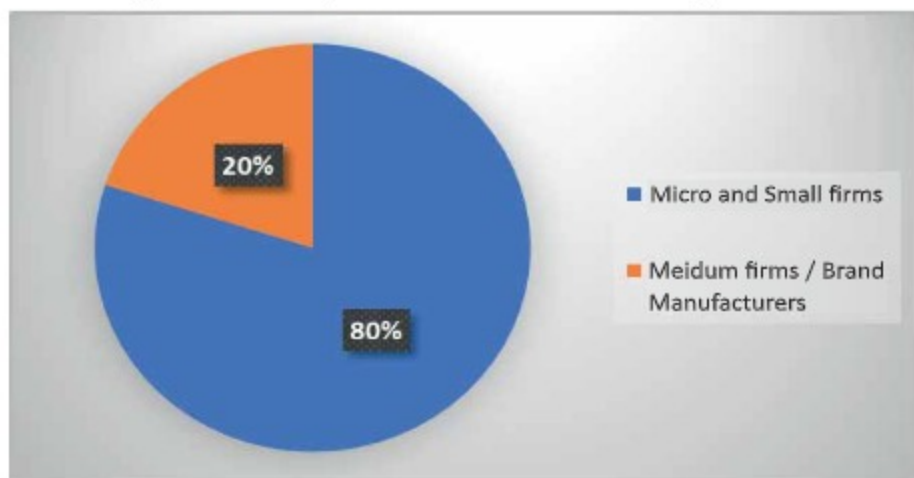
It was very common in Bangladesh that furniture would be made out of wood however, it is not necessarily the case today for all types of furniture. New raw materials of different classes, such as metal, plastic, leather, glass, etc., are increasingly used today to manufacture furniture. Figure 3.1 outlines that furniture products can conveniently be classified based on materials used in production and end-use of the furniture. Based on materials, the industry uses all types of materials that are historically used to manufacture furniture across the globe. In particular, furniture manufacturers use solid wood, processed wood, melamine board, Medium Density Fiberboard (MDF), particleboard, steel, rattan/bamboo, and wrought iron.

The furniture manufacturers of Bangladesh use different materials to manufacture the finished products. However, across all these materials based finished furniture, they face competition from foreign furniture. For example, our manufacturers use processed wood to manufacture doors, whereas processed wood-based doors manufactured overseas are imported into the country. Apart from plastic furniture, almost all other types of furniture manufacturers are facing competition from foreign furniture manufacturers. In addition, certain emerging furniture products, such as modular, multi-purpose, and space-saving furniture, are primarily imported from overseas. Recently, some local manufacturers have started manufacturing this furniture and are slowly entering the market. However, in terms of sophistication and finishing level, they are pretty far from the imported furniture of these types.

3.2.1 Solid Wood Furniture

According to Zweig (2011), solid wood is wood cut into boards from tree trunks, making up most of the wood in furniture. The type of wood you choose determines the beauty and strength of the finished piece. Solid wood is Bangladesh's primary and most extensively used material for furniture. Except for some selected medium-scale firms, solid wood furniture is primarily produced by Bangladesh's micro and small firms. Figure 3.2 outlines the share of solid wood furniture by firms of different sizes.

Figure 3.2: Share in production of solid wood furniture by firm size



Source: Furniture Sector Study (2019)

Micro and Small firms manufacture over 80 percent of solid wood furniture, while branded furniture manufacturers supply the remaining 20 percent. The local furniture firms produce a range of solid wood, including beds, chairs, tables, Almira, sofas, dressing tables, wardrobes, showcases, and dining tables.

Table 3.3: Distribution of firms by major types of solid wood furniture

Solid Wood Products	Number of firms	Percentage
Bed	214	70.4
Chair	175	57.6
Table	185	60.9
Almira	142	46.7
Sofa	103	33.9
Household Furniture	28	9.2
Wardrobe	85	28.0
Cabinet	22	7.2
Doors and Windows	76	25.0
Dressing Table	83	27.3
Showcase	73	24.0
Dining Table	40	13.2
Rack	19	6.3
All Types	16	5.3

Source: Furniture Sector Study (2019)

Table 3.3 presents the major types of furniture manufactured out of solid wood. It reveals that solid wood is mainly used in making beds, chairs, and tables. As the population of Bangladesh is increasing, these products are mostly favored if made out of wood; thus, the demand for such solid wood-based furniture is increasing. Higher demand for land, greater emphasis on multiple usage of raw materials, reduced wastage, and environmental protection have pushed forest management and wood product production to be highly efficient and ecologically healthy. Domestic lumber firms primarily fulfil the supply of solid wood. Out of the surveyed 426 firms, only a few firms import wood from other countries, as outlined in Table 3.4.

Table 3.4: Sources of raw materials for solid wood furniture

Source of supply	Percentage of sourcing	Number of Firms
Import	50 and above	14
	30-50	7
	Less than 30	14
Local	100	227

Source: Furniture Sector Study (2019)

Table 3.4 presents the solid wood sourcing practices of the surveyed furniture manufacturing firms. It shows that 262 firms have reported their sourcing of solid wood. Among them, 35 companies use imported solid wood in various proportions, while 227 manufacturers collect solid wood only from local suppliers.

3.2.2 Processed Wood Furniture

The processed wood is made out of tree branches. These woods are used as a material to make weapons or armour. Others include processed board or sheet materials such as plywood, strand board, hardboard, and chipboard, which are collectively known as panel products and are made up of wood in the form of strips, veneers, chips, strands, or fibers (Rusu-Tanasa, 2014). Consumers, particularly Bangladesh's urban customers, have been moving

towards slim, lightweight furniture for the last decade. To meet the emerging demand, processed wood furniture manufacturing is increasing. However, rural customers, particularly those residing in various districts and towns, also accept this type of furniture, forgoing their traditional demand for furniture made out of solid wood. The primary reason for this shift is the low cost and lightweight nature of these types of furniture. Almost all solid wood-based furniture mentioned in Table 3.3 can also be made with processed wood. In particular, processed wood is heavily used for manufacturing office furniture.

Table 3.5: Distribution of firms by types of processed wood products

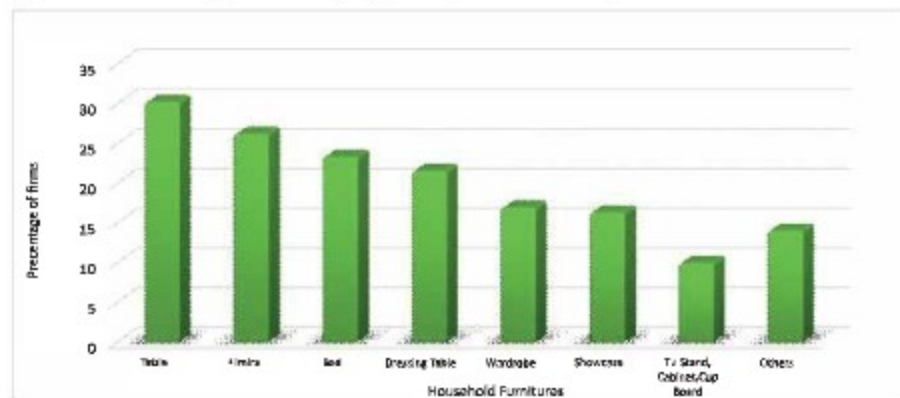
Processed Wood Products	Number of firms	Percentage
Table	52	30.2
Almira	45	26.2
Bed	40	23.3
Dressing Table	37	21.5
Wardrobe	29	16.9
Showcase	28	16.3
TV Stand, Cabinet, Cup Board	17	9.9
Others	24	14

Source: Furniture Sector Study (2019)

Some selective manufacturers in Bangladesh, namely Partex, HATIL, Akter, Nadia, and Brothers Furniture, manufacture solid or mixed wood furniture. The demand for processed wood is higher for bed, table, and almirah manufacturing. Moreover, with the rise in income, the demand for processed wood furniture is also growing as people tend to change furniture regularly, particularly in urban areas.

Figure 3.3 presents the most common types of household furniture that are manufactured using processed wood. It is evident from the figure that most firms produce tables, almirahs, beds, and wardrobes, while a few produce cupboards and cabinets.

Figure 3.3: Percentage of firms by types of processed wood products



Source: Furniture Sector Study (2019)

The raw materials for processed wood come from both local and foreign markets. However, only a few firms import processed timber, as shown in Table 3.6. Forty-two manufacturers have reported the use of imported raw materials in various proportions. Among them, 15 producers use more than 50% of imported raw materials, while 27 firms use less than 50% to produce processed wood furniture.

Table 3.6: Sources of raw materials for processed wood furniture

Percentage of import	Number of firms
Less than 30	7
31-50	20
51-70	6
70 and above	9

Source: Furniture Sector Study (2019)

3.2.3 Plastic Furniture

Another booming furniture sub-sector is plastic furniture, which was primarily non-existent in Bangladesh a decade back. Plastic furniture is gaining popularity in the commercial sector and the lower strata household segment (Asaduzzaman, 2019). The widespread use of plastic furniture, mainly recycled ones, is becoming a great way to use these earth-saving processes and materials. Plastic furniture is convenient to use without thinking much about damage caused by the environment to this type of furniture. For example, plastic furniture can be left outside in summer and winter without adversely affecting the furniture and the environment. These benefits and the cost-effective nature of such furniture convince the people of the lower strata of Bangladesh to go for plastic furniture. Almost 16 firms in Bangladesh specialize in producing plastic furniture, of which chairs, tables, doors, racks, and sofas are the most demanded plastic furniture (Figure 3.4). This sector has seen tremendous growth due to the penetration of one of Bangladesh's largest industrial conglomerates, the Pran RFL group (Asaduzzaman, 2019). Other manufacturers, like Bengal Plastic, Esquire Plastic, etc., follow them. However, plastic furniture manufacturers primarily depend on imported raw materials to manufacture their products. One of the significant products of this segment is the chair. However, some brand plastic manufacturers are extending their product line and offering furniture like almirahs, chests of drawers, tables, kitchen cabinets, etc.

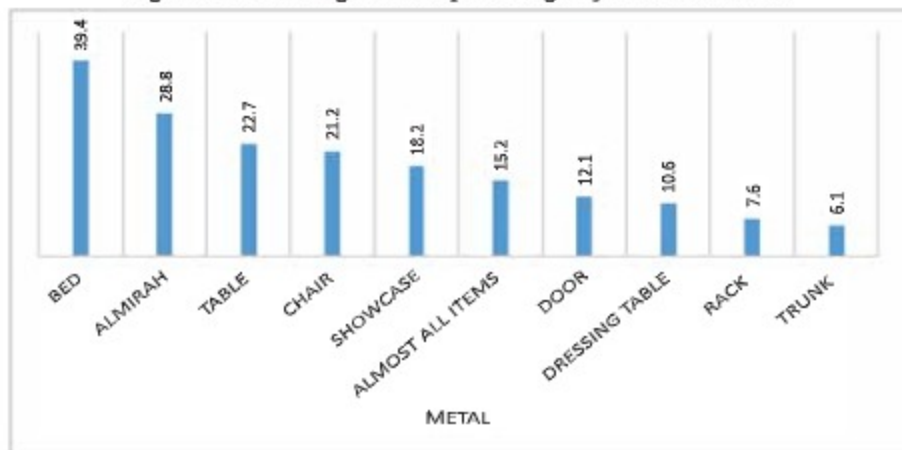
The quality of plastic products, including furniture, is dependent on the quality of the raw materials that are the chips. However, all plastic furniture manufacturers primarily use imported raw materials. This study finds that among the surveyed firms, 75 percent source 100 percent of their raw materials from overseas, while a single company sources only 10 percent of their raw materials from local sources.

3.2.4 Metal Furniture

Steel, aluminium, and wrought iron are used to make metal furniture pieces. The characteristics of metal furniture are: long lasting almost with minimum maintenance due to not having a rusting effect. This type of furniture offers a traditional as well as a classic look to the room and the functionality; therefore, such furniture is impressive (Zweig, 2011). MSME manufacturers primarily make this type of furniture; no big brand is available in this furniture sub-sector. The raw materials of metal furniture are mostly imported. This furniture manufacturer is producing mixed furniture that mixes metal and wood.

Metal furniture has been used for some time, and the demand for this type of furniture has recently increased because of new designs. Quite a few firms are manufacturing metal furniture. Otobi Ltd., M.S. Engineering Works, Partex group, Sunrise Thai Aluminium, A. Salam Metal Industries and Amjad Metallic (Pvt.) Ltd. are some of the prominent ones. Figure 3.4 shows that the main products of this sub-sector are beds, almirahs, doors, windows, racks, file cabinets, trunks, etc. As mentioned earlier, the demand for this type of furniture is increasing. However, it is primarily growing in the commercial sector but not that much in the household segment (Asaduzzaman, 2019).

Figure 3.4: Percentage of firms producing major metal furniture



Source: Furniture Sector Study (2019)

Regarding sources of raw materials used by the metal furniture sector, this study finds that out of the 19 surveyed companies, 17 firms source 100 percent of their raw material from overseas. In contrast, other manufacturers use local and imported materials in various proportions.

3.2.5 Cane and Rattan Furniture

Cane and rattan furniture were once considered classy, and the educated section of society was the primary user of this type of furniture. Rattan furniture is suitable for the sunroom, porch, or living area. Extremely strong, rattan wicker furniture is stylish and lasts for many years. The benefit of rattan and wicker is that each piece is fully

assembled, a sign of superior quality furniture. These include tables, armchairs, chairs, entryways, rattan baskets, sofas, stools, shoe racks, bookshelves, cabinets, beds, couches, recliners, etc. No machinery except fire lamps is used in the entire production process of cane furniture. Therefore, it is considered to be completely handmade furniture. However, the golden era of cane and rattan furniture is gone, and this subsector hardly survives. Bangladesh used to export cane furniture to the overseas market; however, after 2010, cane furniture exports stopped. Local demand for locally manufactured cane furniture is also decreasing. In the 1980s, there were about 30-40 shops in the Panthapath area in Dhaka city, whereas currently, only seven shops are operating in this area.

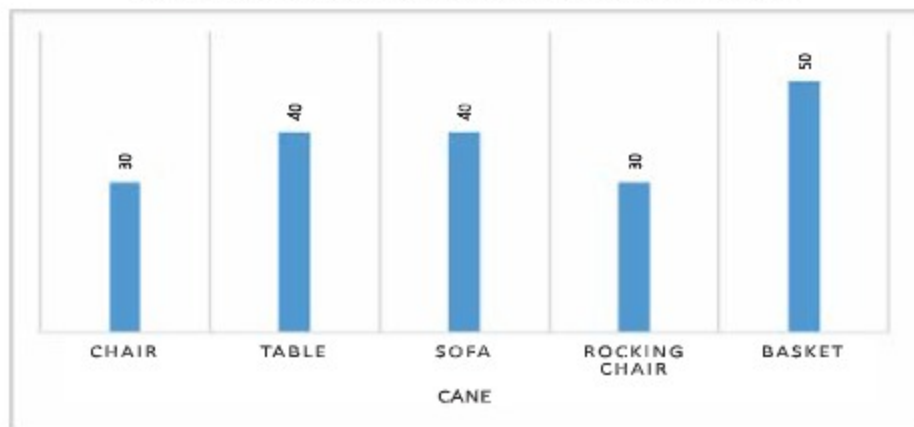
Table 3.7: Distribution of firms by types of cane products

Types of Cane Products	Number of firms	Percentage
Regular Chair	3	30
Table	4	40
Sofa	4	40
Rocking Chair	3	30
Basket	5	50

Source: Furniture Sector Study (2019)

This study finds that because of lower demand, the number of firms manufacturing cane and rattan furniture has decreased, and it comes down to only a few firms. These firms are surviving because of their sustainable strategies and fashionable designs, which some fashion freak consumers demand. The demand for cane-made baskets and rocking chairs still encourages firms to produce more quality products.

Figure 3.5: Percentage of firms producing major cane furniture



Source: Furniture Sector Study (2019)

Shortage of raw materials, lack of skilled workers, and declining demand are some of the main reasons for the near survival state of this sub-sector. Although there was a supply of homegrown sources, Bangladesh now imports raw materials from Africa, Indonesia, and Vietnam and entirely depends on such overseas sources.

Cane furniture manufacturers now produce a limited range of products: chairs, sofas, swing seats, and tea tables, as shown in Figure 3.5. No prominent manufacturer is evident in this furniture sub-sector, and the raw materials of these types of furniture are primarily imported from overseas sources. Since environment-friendly products are becoming popular globally, this type of furniture may have higher demand in the future.

Table 3.8: Sources of raw materials for cane furniture

Percentage	Import
Less than 30	2
70 and above	3

Source: Furniture Sector Study (2019)

The frequency of using local raw materials instead of overseas sources is higher for cane furniture producers. As the demand is low, most firms are reluctant to import high-cost materials from outside. Among the surveyed firms, this study finds that three firms import more than 70% of raw materials from overseas sources.

3.3 Products by Usage

By usage, furniture is produced for homes and offices like corporate offices, academic institutions, hospitals, restaurants, and various projects. To serve the needs of residential customers, furniture manufacturers produce furniture for kitchens and dining, living rooms, bedrooms, outdoors, and others. For a more personal domain, such as one's home, the preferred raw materials are solid wood, a combination of solid wood with other materials like cane, rattan, laminated boards, plywood, and MDF. Materials like plastic, MDF, laminated boards, and wrought irons are preferred for office furniture.

In the past, customers mostly preferred furniture made out of solid wood, namely shegun wood, due to its durability and outlook. Around 70% of the total domestic produce is home furniture, and the rest 30% is office furniture (IDLC, 2017). This study reveals that the percentage of firms catering to household furniture needs is still dominant if we consider the furniture manufacturers' portfolio. The demand for commercial furniture influences manufacturers to shift their focus from domestic to commercial furniture. Table 3.9 demonstrates this changed scenario.

Table 3.9: Target customer

Percentage of firms	Percentage of	
	Official Customers	Household Customers
Less Than 20	53.4	0.7
21 to 40	25.8	1.0
41 to 60	15.2	12.1
61 to 80	2.8	28.1
More than 80	2.8	58.1
Total	100.0	100.0

Source: Furniture Sector Study (2019)

3.4 Emerging Furniture Products

3.4.1 Modular Furniture

With the advent of modern technology, commercial production of customized, flexible, and space-saving furniture products is becoming more popular, particularly



Source: Internet

among the well-off market segments. Among the various types of emerging products, modular furniture is one category. It is one kind of ready-made furniture that can be used according to the requirements and be adjusted to the available space in a room (Buehlmann and Schuler, 2009). It's easy to install and dismantle whenever needed and gives a modern look to a home or office. Scott (2006) notes that modular office furniture has the advantages of being customized, accessible and convenient, and therefore, modular furniture is trendy in modern workplaces. Chairs, desks, workstations, conference tables, storage, partitions, filing cabinets, and cubicles are the most popular furniture presently preferred by most professionals.

Modular furniture is very useful in saving space when space is limited in an apartment or flat. Modular furniture is less expensive in comparison to its utility. These pieces of furniture are flexible enough to arrange according to choice. Modular furniture is also available in various colours and designs. The most popular modular furniture for homes is a modular kitchen. Modular bedrooms, living rooms, shelves, Almira, and cupboards are other commonly used modular furniture. Modular furniture is produced in Bangladesh by only a few branded furniture companies. Although wood furniture makers traditionally make custom-made furniture, their production process is only a job-shop. In contrast, modular furniture production allows mass customization that boosts the firms' efficiency.

3.4.2 Multi-purpose Furniture

Another category of furniture that is increasing in supply is the multipurpose furniture. Multifunctional or multipurpose furniture solutions offer a combination of versatility, function, and style so that every square foot at home or office can beautifully perform like one twice – or even three times – its size (Margareta, 2014). This Furniture has travelled the globe sourcing the most innovative, space-maximizing solutions possible for the bedroom,

living room, guest room, and throughout a home. The use of such types of furniture has become prevalent in developed and developing nation offices and homes. In Bangladesh, some products in this category are imported.

3.4.3 Space-saving Furniture



Source: Internet

A wide variety of space-saving furniture options are coming to the world markets, such as home beds, wardrobes, and dining tables. This furniture can take raw materials like wood, metal, and rattan/wicker as well as modern, and antique. According to Alibaba, there are 19,433 space-saving furniture suppliers in Asia. The top supplying countries or regions are China, Taiwan, and India, which supply 97%, 1%, and 1% of space-saving furniture, respectively (Margareta, 2014). Space-saving furniture products are most popular in North America and Western Europe. These items are also gaining popularity in some urban families of Bangladesh.

3.5 Factors Contributing to the Growing Demand for Furniture

Some significant factors contributing to the sustained growth of the furniture industry, as revealed in this research, are presented in the following:

- 3.5.1 **Growing Domestic Demand:** According to the latest BCG report on the growing consumer class, the Middle and Affluent Class (MAC) population currently stands at 11.7 million and is expected to triple by 2025. These emerging classes have increasing disposable income which is being spent on consumer durables, including furniture.
- 3.5.2 **Access to Credit:** Bangladesh has more than 60 banks vying to capture the retail banking segment. Many banks offer credit cards and consumer loans easily accessible to the MAC segment. Preferential credit card terms simplify purchase decisions for users planning to buy furniture (Schiller and Martin-Schiller, 1997).
- 3.5.3 **Improving Supply-side Capabilities:** Part of this growth can be attributed to a stylistic shift in the furniture design. The country's carpenters have recently begun incorporating styles from their foreign

counterparts, increasing the options available for consumers looking for one-of-a-kind aesthetics. This has resulted in consumers regularly changing their furniture (Margareta, 2014).

- 3.5.4 Inexpensive Labor: The shift can also be attributed to the presence of inexpensive labor in the industry, which is labor intensive (Aiping et al., 2010). In most countries where furniture is produced, labourers are paid more than \$120 a month, while Bangladeshi laborers are paid between \$37-120 a month (EU, 2012).
- 3.5.5 Backward Linkage: Around half of the raw materials used by the furniture industry across all product categories are supplied by the local market. Forests in Chittagong Hills and the Sundarbans are the country's largest sources of quality timber. Some notable expansion in particle board manufacturing and the establishment of big plastic furniture manufacturing plants also resemble the existence of suitable backward linkage in Bangladesh's furniture sector.

3.6 Analysis of Market Forces

This study uses Porter's five forces model to analyze the market sentiment towards the furniture industry of Bangladesh. The findings of the analysis are presented in the following:

- Bargaining power of buyers – The Industry has around 75,000 enterprises exhibiting monopolistic competition traits. In monopolistic competition, firms take the prices of their competitors, with limited pricing power; hence, the bargaining power of the buyer is very high (Gazo and Quesada, 2005). However, the top 6-7 firms catering to the top segment of the market tend to have higher bargaining power over buyers.
- Bargaining Power of Suppliers – Due to the recent reforestation efforts, the supply of raw materials from the domestic market has decreased. This leaves furniture manufacturers with fewer choices when choosing a suitable supply source. However, the choices abroad are still abundant. Countries like Myanmar, India and countries in Africa are reliable import sources with specific reference to solid wood-based raw materials (Drayse, 2008).

Figure 3.6: Industry attractiveness using Porter's model



Source: Furniture Sector Study (2019)

- Threat from substitutes – There are no direct substitutes for furniture. Although alternative furniture is made out of steel or plastic, they are not popular enough to pose any major threat to the market for wood-processed furniture. (Schuler and Buehlmann, 2003).
- Threat from New Entrants – The market is already crowded and probably will grow even more due to the lack of entry barriers. However, these new entrants will not threaten existing enterprises' market share due to intense competition and razor-thin margins. The top segment could be disrupted by the entrance of a big brand, e.g., Ikea, since Bangladeshi consumers are more biased towards foreign brands.
- Rivalry – We can see now that the rivalry among the existing enterprises is fierce due to the sheer number of enterprises in the market and the threat from the possible entrance of big foreign brands. (Schuler and Buehlmann, 2003).

3.7 Furniture Export Scenario

The export of furniture and allied products from Bangladesh started during the mid-1990s (The Daily Star, 2015). Table 3.10 presents the volume of furniture export and growth of furniture export as well as the total export growth of Bangladesh from 2009-10 to 2017-18.

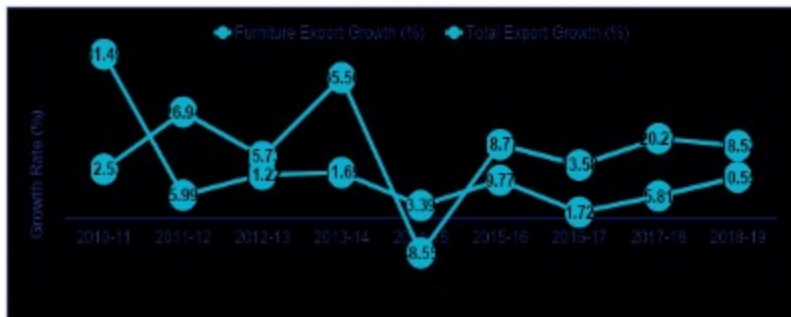
Table 3.10: Furniture Export and Export Growth

Year	Furniture Export (Million USD)	Furniture Export (% of Total Export)	Furniture Export Growth (%)	Total Export Growth (%)
2009-10	19.00	0.12	-	-
2010-11	21.38	0.09	12.53	41.49
2011-12	27.14	0.11	26.94	5.99
2012-13	31.41	0.12	15.73	11.22
2013-14	42.58	0.14	35.56	11.69
2014-15	38.94	0.12	-8.55	3.39
2015-16	46.25	0.14	18.77	9.77
2016-17	52.53	0.15	13.58	1.72
2017-18	63.18	0.17	20.27	5.81
2018-19	74.88	0.18	18.52	10.55

Source: Export Statistics, EPB, and Authors' Calculations

The share of furniture export in comparison to total export is not significant. In 2018-19, the share of furniture exports was 0.18% of Bangladesh's total exports. However, the furniture sector is moving forward and achieving substantial demand from foreign nations by showing its increasing trend of export growth in the last five years. Explicitly, the export growth rate in the furniture sector is 8%, which is more than the total export growth. Therefore, furniture has good prospects among the exportable items of Bangladesh and industry experts argue the same.

Figure 3.7: Furniture export growth against the total export growth from 2010-11 to 2018-2019

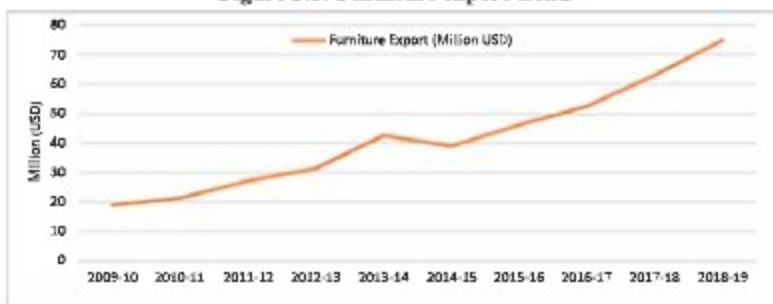


Source: Furniture Sector Study (2019)

According to the Bangladesh Furniture Industries Owners' Association (BFIOA), the furniture products are exported to the US, Canada, Australia, the UK, the Middle East, Gulf countries, and other Asian countries, like India, Japan, Taiwan, Singapore, Thailand and Vietnam. In the office furniture segment, there is a vast market potential in the USA and Japan.

Figure 3.7 demonstrates the furniture and overall export growth from 2010-11 to 2018-19. Furniture export has maintained positive growth except for the year 2014-15. Furniture export has also been growing at a higher rate than the national export growth of Bangladesh. However, the share of furniture in the total export earnings is still meagre. In 2018-19, the share of furniture exports in Bangladesh's total exports was only 0.18%. Industry experts argue that many opportunities exist to increase exports and raise the share in total export earnings of the country. Nonetheless, this is contingent on how sophisticated the local furniture market would be.

Figure 3.8: Furniture export trend



Source: Furniture Sector Study (2019)

3.8 Furniture Industry: Global Trends and Future Outlook

The global furniture market is expected to grow at a compound annual growth rate (CAGR) of 5.1 percent by 2025, resulting in the market size settling at USD 718.3 billion (Grand View Research, 2019). Apart from the demand for household furniture, the commercial segment, including hotels, offices, and other public and private buildings, holds a market share of more than 30 percent

and is expected to grow as per the abovementioned CAGR. Table 3.16 represents the top 10 furniture exporting and importing countries. It is evident from the table that China is the unprecedented market leader in terms of furniture export in the world market. Although the USA is among the top 10 furniture manufacturers of the world, they export only 1/10th of exports from China. One of the main reasons for such a low percentage of exports is that the manufacturers in the USA are hardly equipped to meet the local furniture demand. If we look at the import data, we find that the USA is the largest furniture importer in the world's market. Some European countries, in particular, the countries of the European Union (EU), are also importing a good percentage of furniture from the world market. Almost 20 percent of the world's furniture imports are consumed by some EU countries (Table 3.11). If we consider Bangladesh's imports, it is placed among the top 25 furniture-importing countries of the world, with import growth of 123.5% throughout 2013-2017 (World Richest Countries, 2019).

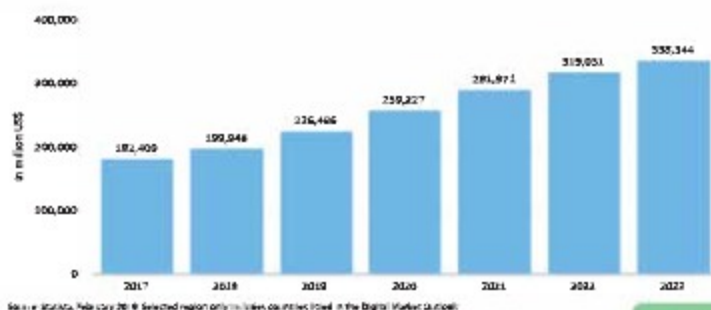
Table 3.11: Top 10 furniture exporting and importing countries

Top 10 Furniture Exporting Countries	Percentage of World Export	Top 10 Furniture Importing Countries	Percentage of World Import
China	31.7	USA	31.4
Germany	8.9	Germany	7.1
Italy	8.6	UK	6
Vietnam	6.9	France	5.2
Poland	5.1	Canada	3.6
USA	3.5	Japan	3.2
Canada	3.3	Netherland	3.1
Malaysia	2.2	Switzerland	2.5
Spain	1.8	Australia	2
Denmark	1.7	Austria	1.8

Source: International Trade Centre (2019)

The revenue to be generated from the Furniture and Homeware segment is expected to hit US\$226,486 million in 2019 (Statista, 2019). This increase would be supported by an annual growth rate of 10.6%, which will take the market volume to reach US\$338,344 million by 2023 (Figure 3.9). The average revenue per user (ARPU) currently amounts to US\$ 317.98.

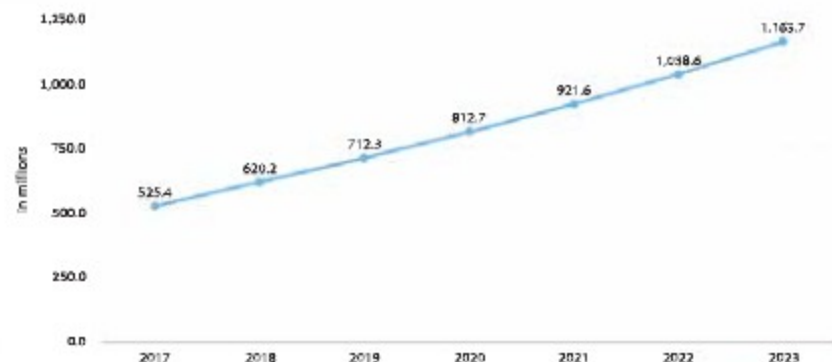
Figure 3.9: Revenue to be earned from the furniture industry 2017-2023.



Source: Statista (2019)

If we compare the most prominent beneficiaries in terms of global revenue earned from furniture, China is considered the unprecedented market leader. It is expected to generate a revenue of US\$ 78,728 million in 2019. The number of furniture users across the globe is increasing. It is expected to increase further in the coming years as the world GDP is likely to increase significantly in the developing regions. The number of furniture users globally is projected to reach 1163.7 million by 2023 (Figure 3.10). However, this data is a bit conservative as it includes only those countries of the region listed in the digital market outlook.

Figure 3.10: Number of furniture users across the globe 2017-2023.



Source: Statista, February 2019. Selected region only (includes countries listed in the Digital Market Outlook)

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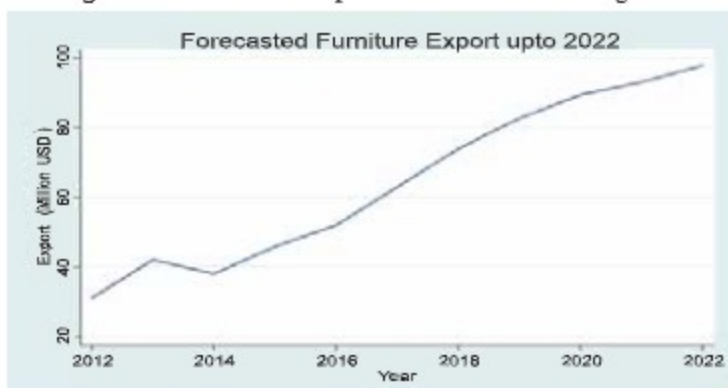
Source: Statista (2019)

3.9 Forecast of Furniture Export from Bangladesh

Besides local sales, the furniture industry earns by exporting. Export from this sector has been steadily growing over the last few years. This study used an autoregressive model to predict sales till 2022. An Autoregressive (AR) model regresses its lags on it. To model the furniture export and forecast the future export of furniture, an AR(2) model shows that two years lags have predictive power on the current export in the furniture sector.

$$y_t = \phi_1 y_{t-1} + \phi_2 y_{t-2} + \epsilon_t,$$

where ϵ_t obeys our usual assumptions $E[\epsilon_t] = 0$, $E[\epsilon_t^2] = \sigma^2 \forall t$, and $E[\epsilon_t \epsilon_{t-s}] = 0 \forall t$ and $s \neq 0$.

Figure 3.11: Forecasted Export of Furniture from Bangladesh

Source: Furniture Sector Study (2019)

The above figure shows that furniture exports from Bangladesh are likely to reach 100 million USD by 2022. Thus, increasing the production capacity of furniture manufacturers will boost Bangladeshi furniture manufacturers' export potential globally.

3.10 Furniture Exports Under HS Code

To explore furniture export from Bangladesh, we use HS classification at the 8-digit and 4-digit provided by the Export Promotion Bureau of Bangladesh (EPB) and UN COMTRADE. Table 3.12 summarizes the list of HS 4-digit products exported to various destinations. It is evident from the table that Bangladesh mainly exports home furniture to abroad.

Table 3.12: List of products exported from Bangladesh

HS Code	Product label	Export value (in '000 USD)			
		2015	2016	2017	2018
'9404	Mattress supports (excluding spring interiors for seats); articles of bedding and similar furnishing	28,678	34,440	44,413	56,567
'9401	Seats, whether or not convertible into beds, and parts thereof	118	8391	14185	24,696
'9403	Furniture and parts thereof	10,597	1,504	2,910	2,605
'9405	Lamps and lighting fittings, including searchlights and spotlights, and parts thereof, n.e.s.; illuminated	181	686	839	1,106
'9402	Medical, surgical, dental, or veterinary furniture, e.g. operating tables, examination tables	0	14	2	206
'9406	Prefabricated buildings, whether or not complete or already assembled	246	59	40	1

Source: ITC calculations based on UN COMTRADE statistics.

There is an increasing export demand for mattress supports (excluding spring interiors for seats), articles of bedding, and similar furnishing materials. Mattress support products are the highest exportable item; compared to last

year, the export growth for this item is 27.37%. In recent times, the export demand for seats and their related items outperformed any of the previous years, and compared to last year, the export of seats is around 74%. The demand for Furniture and parts is following a decreasing trend, and compared to last year, this item export has fallen short by 10.48%. However, there is an increasing trend for lamps and fittings and Medical, surgical, dental, and veterinary furniture. Table 3.13 provides the HS 8-digit classification of furniture products.

Table: 3.13: HS code of furniture and allied products

SL	Code	Details
1	94014000	Seats other than garden seats or camping equipment convertible into beds.
2	94015100	Seats of cane, osier, bamboo or similar mate
3	94016100	Seats with wooden frames, upholstered.
4	94016900	Seats with wooden frames, other than those upholstered.
5	94017900	Seats with metal frames, not upholstered
6	94018000	Seats, Nes
7	94019000	Parts of seats
8	94031000	Metal furniture of a kind used in offices
9	94032010	Metal wardrobes, being furniture
10	94032090	Metal furniture, n.e.s., other than those of a kind used in offices
11	94033000	Wooden furniture of a kind used in offices
12	94034000	Wooden furniture of a kind used in the kitchen
13	94035000	Wooden furniture of a kind used in the bedroom
14	94036000	Wooden furniture, nes
15	94036010	Microscope tables, laboratory benches, with glass cases, gas nozzles & tap fitting, of wood
16	94036020	Clothes stand, being furniture, for placing on floor, of wood
17	94036090	Wooden furniture, n.e.s. other than cabinets for pharmaceutical use & for wash basins
18	94037000	Furniture of plastics
19	94038100	Furniture of other materials
20	94038900	Furniture of other material, including cane
21	94039000	Parts of furniture, n.e.s.
22	94041000	Mattress supports
23	94042100	Mattresses of cellular rubber or plastics
24	94043000	Sleeping bags
25	94049000	Articles of bedding, stuffed, etc (excl. mattress)
26	94051000	Chandeliers & other electric ceiling or wall lighting fittings, excluding those of a kind used for lighting public open spaces or thoroughfares
27	94054010	Lamps for exterior lighting (for example, street lamps, porch & gate lamps & public gardens lamps)
28	94054030	Solar energy operated lamps
29	94054040	LED tube light or LED bulb
30	94054042	LED lamps, bulbs and tubes without fittings
31	94054049	LED tube light or LED bulb
32	94054090	Other electric lamps & lighting fittings, n.e.s.
33	94055090	Non -Electrical Lamps & Lighting Fitting.
34	94059100	Parts for heading 9405, of glass.

SL	Code	Details
35	94059900	Parts for heading 9405, other than of glass or plastic.
36	94059910	LED lamp parts imported by VAT registered
37	94059990	LED lamp parts excluding imported by VAT registered
38	94060010	Sandwich panel with or without cold room
39	94060090	Prefabricated buildings of other materials other than those of plastics, wood, iron, aluminium or of fibreglass

Source: Export Promotion Bureau

To identify the major items of furniture export, this report further presents export items at 8-digit HS codes from 2016-17 to 2018-19. The export share of key furniture products is shown in Figure 3.12. Among the 39 furniture products at 8-digit HS codes, sleeping bags (HS Code 94043000) categorized under mattress supports, mattresses, and quilts still contribute a significant portion of furniture exports. However, the relative share of these items has decreased from 57.9% in 2016-17 to 46.4% in 2018-19. These items are mainly exported to European countries, as shown in Table 3.14. The second major furniture item in the export basket is parts of seats (HS Code 94019000), which shows an upward trend and contributed 23.8% of total furniture exports in the year 2018-19. Japan is the sole export destination for parts of seats. China is the primary export market for furniture parts (HS code 94039000), which shared more than 8% of furniture exports in 2017-18. However, exports of this item declined in the subsequent year.

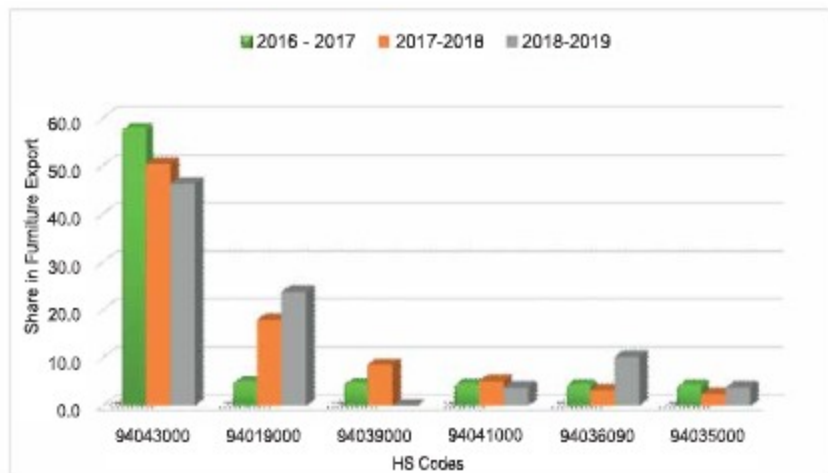
Table 3.14: Country-wise export of the major furniture items for the year 2016-17

HS Code	Product Description	Percentage of total furniture exports in the year 2016-17	Export Destinations	Percentage share of the items exported in 2016-17
94043000	Sleeping Bags	57.9	Spain United States Germany Canada Norway	34.22 19.73 9.28 9.21 6.29
94019000	Parts of seats	5.1	Japan	100%
94039000	Parts of furniture	4.9	China United Kingdom, Hong Kong, United States	98.8 1.0
94041000	Mattress supports	4.8	China Malaysia	94.89 5.11
94036090	Wooden furniture, n.e.s. other than cabinets for pharmaceutical use & for wash basins.	4.6	Congo Mali Cameroon	48.47 33.75 17.42

HS Code	Product Description	Percentage of total furniture exports in the year 2016-17	Export Destinations	Percentage share of the items exported in 2016-17
94035000	Wooden furniture of a kind used in the bedroom	4.5	India United Kingdom United States Pakistan Germany Canada Belgium Turkey	12.10 10.10 9.20 6.80 6.52 5.92 5.29 4.17

Source: Authors' Compilation from EPB data

Figure 3.12: Share of major furniture items in export earnings: 2016-17 to 2018-19



Source: Authors' Calculations based on the data from the Export Promotion Bureau

In the wood furniture category, the volume of exports is still relatively small, such as wooden furniture other than cabinets for pharmaceutical use & for wash basins (HS Code 94036090) and wooden furniture of a kind used in the bedroom (HS Code 94035000) shared 10.3% and 4.3%, respectively of total furniture export in 2018-19. Although the export share of wood furniture is still low, there has been a growing trend in the export of such furniture. For instance, the export share of wooden furniture besides cabinets for pharmaceutical use & wash basins (HS Code 94036090) increased from 4.6 % in 2016-17 to 10.3% in 2018-19. The major export markets of wooden furniture besides cabinets for pharmaceutical use & for wash basins (HS Code 94036090) are the African countries, including Congo, Mali, and Cameroon. On the other hand, the major export destinations of wooden furniture used in the bedrooms (HS Code 94035000) are dispersed across Asia, Europe, and North American regions.

3.11 List of products imported by Bangladesh at 4 Digit HS Code

Table 3.15 represents four-digit HS-Code products imported by Bangladesh. Among the many different importable items, the top import items consist of lamps and lighting fittings, prefabricated buildings, furniture and parts, seats, medical, surgical, dental, and veterinary furniture, e.g. operating tables, examination tables and mattress supports, and articles of bedding. In recent years, most of the uppermost importable items have exhibited a decreasing trend, except prefabricated buildings and medical and surgical items.

Figure 3.12: Share of major furniture items in export earnings: 2016-17 to 2018-19

HS Code	Product label	Imported value in 2015	Imported value in 2016	Imported value in 2017	Imported value in 2018
9405	Lamps and lighting fittings, incl. searchlights and spotlights, and parts thereof, n.e.s.; illuminated ...	20208	96997	112739	99885
9406	Prefabricated buildings, whether or not complete or already assembled	22002	33805	31501	40931
9403	Furniture and parts thereof, n.e.s.	17931	51206	38717	34530
9401	Seats, whether or not convertible into beds, and parts thereof, n.e.s. (excluding medical, ...	7048	34929	32537	28817
9402	Medical, surgical, dental or veterinary furniture, e.g. operating tables, examination tables, ...	6106	5853	7650	8683
9404	Mattress supports, articles of bedding and similar furnishing, ...	931	4494	5559	4999

Source: ITC calculations based on UN COMTRADE statistics.

CHAPTER 4

VALUE CHAIN OF FURNITURE SECTOR

4.1 Value-Chain

The value chain is the set of activities in which a firm splits the production process, and then a lead firm carries out part of the value creation stages while outsourcing some other stages to outside vendors. Sturgeon (2001) states that a chain maps the sequential arrangement of events vertically to deliver, consume, and maintain goods and services. Value chain activities range from the conception of a product idea to the delivery of a product to final consumers. At the most basic level, value chain analysis systematically maps the actors participating in a particular product's production, distribution, marketing, and sale (ESCAP, 2011). Michael Porter has introduced and popularized the notion of value chain. Porter (1985) has defined the value chain as a diagnostic tool for disaggregating the value-added activities of a firm. According to Porter (1990), a value chain consists of primary and support activities competing in a particular industry. The primary activities of the value chain include production, marketing, delivery, and servicing of the product, while support activities are related to providing purchased inputs, technology, human resources, or overall infrastructure functions like general management and finance. Since Porter conceived of the value chain, its conceptual framework has broadened significantly over the years.

On a theoretical note, Sturgeon (2001) introduced various nomenclatures of value chains, including alternative names, scale, and value-chain actors. According to him, value chain can be identified with alternative names, including supply chain, commodity chain, production chain, activities chain, or product pipeline (Sturgeon, 2001). The scale of value-chain can take a spectrum from local (industrial district/ specialized industrial cluster) to domestic (national production system), to international (international production network), to regional (regional production system/ network), and finally to global (global commodity chain/ global production network). Referring to the value chain actors, Sturgeon (2001) has identified five major ones: (1) integrated firm/modern corporation (a firm that engages in the entire range of value-chain activities); (2) retailer/ marketer (a firm that carries sales and marketing activities); (3) lead firm (a firm that initiates the flow of new products through the value chain); (4) turn-key supplier/system supplier (a firm that supplies complex parts and services); and (5) component supplier/ subcontractor (a firm that supplies discrete parts). Schmitz (2005) points out that the lead firm in the chain usually wishes to control and govern the relationship.

A salient feature of the present-day value chain is the value-chain integration at a global scale, where a firm tends to specialize in value-creation segments that are built on its distinctive competencies and integrate with global vendors that possess competitive advantages in other stages of the value chain. In this connection, value-chain integration refers to the inter-firm linkages within a particular industry.

Thus, value chain integration intends to reveal the structure or organization of firms in an industry and the intensity of inter-firm connectivity. Furthermore, analysis of industry value-chain integration identifies the actors/ players of the industry, linkages or connectivity between firms of various sizes, and their relative strengths and weaknesses. Integration of SMEs into the global value chain through linkage with large firms or with other SMEs can boost value-added activities in international business, facilitate entry into regional and global markets, and accelerate socio-economic development and poverty reduction of many smaller economies in Asia, including Bangladesh (SECAP, 2011).

Apart from the many alternative ways through which firms can learn, such as licensing, reverse engineering, employee mobility, learning by exporting, and spillover from foreign direct investment (Lall, 1996; Navaretti and Venables, 2004), participation in the global value chain has emerged as a key avenue for developing countries to get access to foreign technology through the inclusion of their firms in the global value chain (Marchi et al., 2018). Hence, researchers and development practitioners have widely adopted value chain analysis to conceptualize global production systems. It also serves as a tool to analyze different aspects of chain coordination and governance (ESCAP, 2011).

4.2 Value Chain of Furniture Industry

To capture the value chain of the furniture industry, this study separately provides a holistic value chain for the entire industry and also a value chain for various segments of furniture production based on the inputs used, such as solid wood, processed wood, metal, cane, and plastic.

4.2.1 Value Chain: Overall Furniture Industry

Figure 4.1 Value Chain: Overall Furniture Industry



Source: Furniture Sector Study (2019)

4.2.2 Value Chain: Solid Wood Furniture

Figure 4.2 Value Chain: Solid Wood Furniture



Source: Furniture Sector Study (2019)

4.2.3 Value Chain: Processed Wood Furniture

Figure 4.3 Value Chain: Processed Wood Furniture



Source: Furniture Sector Study (2019)

4.2.4 Value Chain: Metal Furniture

Figure 4.4 Value Chain: Metal Furniture



Source: Furniture Sector Study (2019)

4.2.5 Value Chain: Cane Furniture

Figure 4.5 Value Chain: Cane Furniture



Source: Furniture Sector Study (2019)

In the furniture industry, some firms tend to be vertically integrated, where they carry out entire value-chain activities with the help of imported raw materials. This is one of Bangladesh's few industries where large firms undertake their production and perform forward integration. Whereas in backward stages, firms heavily depend on imports. In the case of both forward and backward integration, this study finds little evidence of formidable integrated relationships among the lead and follower firms operating in the furniture industry of Bangladesh. Large and medium firms produce in their factories and sell the finished products in their outlets, while small and micro firms primarily operate on a made-to-order basis since they lack storage space. In various districts, it has been found that one/two firms own some machines, and small and micro firms get some part of the product design, cutting and finishing tasks from those firm/s. In some districts, it was also reported that one firm imports wood, and small firms that operate nearby buy from the importer. However, the development of specialized firms to perform some specific value chain activities has not been found around the country.

Local supplies from backward industries like medium-density fiberboard (MDF), particle board, melamine board, small tools and fittings, fabrics, leather, steel, and metal are inadequate and of poor quality. Around 60 firms supply MDF, particle, and melamine boards, covering around 25% of domestic demand. Moreover, the quality of domestically available raw or finished inputs is hardly of international standard, which consequently deters export-oriented furniture manufacturers from sourcing those inputs from local suppliers. Few large firms, including Partex, Hatil, and Akter Furniture, produce their required backward materials, but such firms don't supply those materials to other manufacturers of finished products. Brand furniture producers also claim that the supply of tools by the light engineering sector and fabrics from the textile sector don't meet quality standards for exporting furniture in the international market.

The furniture sector strongly depends on imported raw materials. On average, 60% of raw materials in the furniture sector are imported from different countries (Quamruz-zaman, 2014). Timber, wood coating materials, hardware & accessories, world-class fabrics, etc., are major importable items. In this study, Chapter 3 discussed the import of solid wood, processed wood, metal, and plastic as raw materials for producing finished furniture.

4.4 Scope of Value Chain Integration

An unexplored scope of value chain integration remains in the backward and forward stages. Firms in the furniture sector can invest in the backward value chain to supply raw materials for making processed wood furniture. Since China and Malaysia are moving to more capital-intensive industries, Bangladesh can take more share in the international furniture market. Thus, future demand for materials for making processed wood furniture is expected to rise.

The furniture sector also needs to develop strategic partnerships with the light engineering, plastic, and textile sectors to ensure the development of a quality supply of tools, steel, metal and plastic accessories and fabrics. Wood furniture manufacturers claim that they import light-engineering tools and accessories from China since domestic suppliers cannot deliver high quality and wide variety of tools.

Similarly, plastic furniture manufacturers argue that they import virgin raw materials from China without a quality supply of recycled raw materials in the local market. All types of chemicals are also imported. Because of the high import dependency on required raw materials, plastic furniture production is costly in Bangladesh compared to its competing Asian countries. The export of plastic furniture is also less competitive in the international market. Thus, the plastic sector can develop the capacity to produce quality recycled materials and chemicals to feed the plastic furniture manufacturers. This will harness the price competitiveness of plastic furniture in the international market. Another critical value chain-related friction furniture manufacturers face, especially the small ones, is the supply of technically sound workers, designers, and machine operators. Furniture production will shift to modular production, demanding a high degree of automation and a skilled labor force. Therefore, developing technical and vocational institutes is essential to ensure the growing demand for non-managerial people with appropriate technological know-how. It is a must if we are to create an international standard seamless value chain in the furniture sector of Bangladesh.

4.5 Sub-Contracting and Value Chain Opportunities

Globalization of production, technological breakthroughs, and cost pressure increasingly promote sub-contracting and value-chain integration among firms within and between industries. During the last few decades, firms around the globe have been gradually embracing subcontracting by moving away from vertical integration. In many instances, SMEs serve as the key players in the sub-contracting and value chain integration process since large firms generally concentrate on the core functions. SMEs also help the lead firms to remain competitive by boosting efficiency from economies of scale and improving quality that results from specialization. The subsequent section presents the scenario of sub-contracting and value-chain integration in the furniture sector of Bangladesh.

4.5.1 Subcontracting Scenario in SMEs

According to Uddin (2014), there are three types of sectors in Bangladesh where SMEs play an active role as subcontractors: (a) machinery and equipment, (b) chemicals, electrical and electronic products and transport equipment, and (c) textiles, furniture and food processing industries. Taking the lessons from Japan and the Republic of Korea, subcontracting scheme in Bangladesh was launched by BSCIC in 1986, under which BSCIC undertook the following activities: (a) identify the small and cottage industries that are complementary to medium and large firms; (b) establish linkage between subcontracting firms and lead firms; (c) facilitate signing of memorandum of

understanding between them; (d) provide promotional services to subcontracting firms like technical assistance to participate in tender for orders; and (e) assistance in marketing. Under the patronage of BSCIC, 30 memoranda of understanding relating to subcontracting have been developed. To promote subcontracting, a gazette notification was issued in 1989 that described rules and regulations of the linkage stating that machinery and spare parts made of any metals, plastic, and ceramics can be supplied to the State-Owned-Enterprises (SOEs) by the Small and Cottage Industries under subcontracting scheme. Under the jurisdiction of this gazette, the enlisted light engineering industries in BSCIC supply various products such as spare parts, equipment, and small & capital machinery under a subcontracting scheme. Under these subcontracting agreements, Small and Cottage Industries supply their products to the agriculture sector, automobile sector, gas sectors (Titas, Bakhrabad, Jalalabad gas company), Sugar & Food Industries Corporation, Bangladesh Railway, BRTA, BRTC, BIWTA (for ferry), BIWTC, Port Authority, WASA, T&T, PDB, Public Health Engineering, Civil Aviation, Bangladesh Biman, garments factory, pharmaceutical industries, all fertilizer & chemical industries under BCIC, industries under Engineering Industries Corporation, all industries under BTMC, Jute Industries Corporation, paper & cement mills, other small, medium & large industries, equipment for various laboratories, R&D institutes, etc.

The survey of the 426 furniture manufacturers found that about 23% of firms engage in sub-contracting activities. Small firms subcontract if they get an order of a large quantity at a time, particularly furniture for official use and if they lack the necessary resources for completing an order like cutting and designing. In a global context, subcontracting by large firms/brand furniture producers facilitates the development of SMEs. However, the spread of subcontracting by large firms is almost absent in the furniture industry of Bangladesh. Large firms argue that small firms do not qualify as quality suppliers for any backward integration.

Out of different categories of furniture manufacturers, solid wood manufacturers, especially micro and small business owners, depend on subcontracting. This study found that various small furniture businesses work as subcontractors at Satarkul, Dhaka. They purchased CNC machines and are fulfilling the demands of other business houses accordingly. Medium business owners express dissatisfaction regarding this phenomenon.

Table 4.2: Subcontracting status

Status of Subcontracting	No. of Firms	Percent
Yes	97	22.8
No	304	71.4
No response	25	5.9
Total	426	100.0

Source: Furniture Sector Survey (2019)

CHAPTER 5

TECHNOLOGY UPGRADATION AND LABOR SUPPLY IN THE AGE OF 4TH INDUSTRIAL REVOLUTION

This chapter covers various aspects such as technology upgradation, human resource development, and resource & energy efficiency in the furniture sector of Bangladesh. Contents of this chapter are compiled from the findings of the survey, FGD, and KII, in addition to the relevant concern literature.

5.1 Status of technology used in the furniture sector

The Industrial Statistics Guidelines (UNIDO, 2010) classified technology under three tiers, namely:

- a) Medium-high and high technology
- b) Medium technology
- c) Low technology

UNIDO refers to the industries spending high on research and development classified as medium-high category, and relative expenditure compared to the output is the measure to classify the industries in terms of technology. UNIDO (2010) characterized some industries, such as pharmaceutical, automobile, medical, etc., as medium-high to high technology-based. Industries like rubber, shipping, and non-metallic mineral products are classified as medium technology users and textile, leather, furniture, etc., as low technology-based industries. Eurostat (2018) also classified the furniture sector as a low technology-based industry concerning the intensity of technology being used. Scott (2006) characterized the furniture industry as low-technology and labour-intensive. This study found that the rate of technology adoption in the furniture industry is low, and thus, the furniture industry of Bangladesh is also under the same classification.

Regarding the use of various types of machinery, three types of technology can be found in the furniture sector: hand tools, power tools, and heavy machinery. As per the rate of machinery used by the selected respondents of this study, it was evident the pattern of technology usage in this sector (Table 5.1).

Table 5.1: Type of machinery used in the furniture sector

Type of Machinery	Number of respondents as per percentage
Hand tools	50
Power tools	45
Heavy Machinery	05

Source: Furniture Sector Study (2019)

The above table shows that half of the business enterprises use hand tools for making furniture and only around 5% use heavy machinery in their factory. The following table shows the technology names and brief descriptions of popular ones in the current context.

Table 5.2: Name and description of commonly used technologies

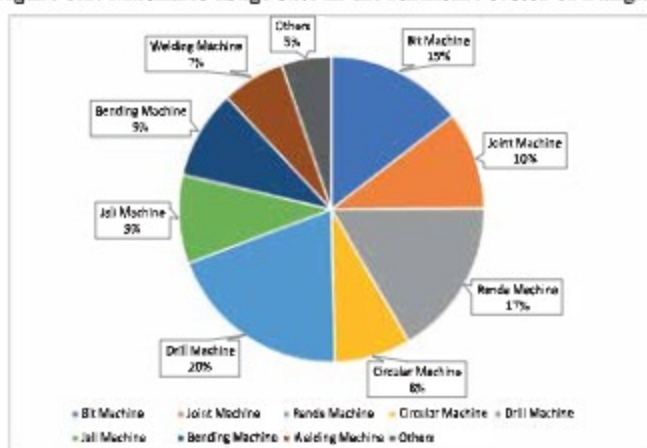
Technology Name	Description
Bit machine	Usually, for drilling holes, a bit machine is used.
Joint machine	It can splice a small board with a giant one and improve wood utilization.
Randa machine	Randa machines are used for cutting the sides of wood or board.
Circular machine	With a specific measurement, a circular machine can be used if any wood piece needs to be cut down into different pieces.
Drill machine	This machine is used for drilling purposes.
Jali machine	This machine can do primary-level design.
Bending machine	This machine is used to bend different materials.
Welding machine	It is used in various steps of furniture processing.
Slot Saw Machine (Wood Saw Machine)	It is used for cutting wood locks or wood boards.
Cut Saw Machine (Wood Cutting Machine)	This automatic tool can prepare different types of shapes for example, angle, curved, angular, etc. for chairs and tables.
Wood Grinder / Drawstring Machine (Planner)	This tool smoothes the sides of a wood.
Wood Profile Machine	This finishing machine tool softens and makes the final product very smooth.
Wood Sandpaper Machine	The sandpaper machine can smooth the wood without fibre on its surface.

Note: Pictures of the machines are attached in the appendix.

Source: Furniture Sector Study (2019)

The rates of utilization of some of the most common machines are bit, joint, randa, drill, welding, etc. As mentioned earlier, a significant portion of furniture manufacturers in Bangladesh mainly use hand tools. It is also found that most of them are classified as micro, small, or medium enterprises. The collected data shows drill, bit, and randa machines are mostly used in this sector.

Figure 5.1: Machines usage rate in the furniture sector of Bangladesh



Source: Furniture Sector Study (2019)

Some of the modern technologies that are used by many furniture manufacturers around the world are:

- i. Surface planer
- ii. Thickness Planer
- iii. Combination Machine- Combination of Surface Planer and Thickness Planer
- iv. Table Saw
- v. Spindle Moulder
- vi. Router
- vii. Mortiser

A brief description of the modern machines is produced through the following table.

Table 5.3: Description of modern furniture technology

Technology Name	Description
Surface Planer	A surface Planer is used for smoothing the surface, and it also makes a workpiece parallel to the tools bed.
Thickness Planer	This planer ensures consistency in thickness along with smooth surfaces. It usually plains one side of a board at a time.
Combination of Surface Planer and Thickness Planer	It combines many functions of different machines such as surface planer, thickness planer, circular saw, drilling, grinding, moulding, etc.
Table Saw	Combining a circular saw blade and mounted on an arbor, this machine works as a useful tool.
Spindle Moulder	The primary feature of this machine is to shape wood.
Router	A power tool that is used for routing different types of wood or plastic materials.
Mortiser	For cutting square and rectangular holes. mortiser is used as an important machine.
CNC	CNC machines are digitally controlled and perform various functions like milling, lathe, router, welder, grinder, laser or waterjet cutter, sheet metal stamping, etc.

Note: Pictures of the machines are available in the Appendix.

Source: Furniture Sector Study (2019)

FGD and KII with producers underscored that the use of modern machines is very low in Bangladesh. Some sub-contracting firms are equipped with specific types of CNC, router or thickness planers, but modern tools are scarce. Apart from the commonly used machines, medium and large firms use CNC machines. The main sources of imported machinery are Germany, Italy, Taiwan, and China. Across the country, some furniture clusters are developed where a selected number of leading firms purchase modern machines and provide sub-contracting services to the small firms in the cluster.

While conducting FGDs and KIIs, this study found the absence of qualified labor in this context. Thus, this sector's transformation from hand tools to power tools and finally to heavy machines is very slow.

Tools/ Machines used for panel processing (for Board like Particle Board, Laminated Board, MDF Board) are:

- i. Sliding Panel Saw
- ii. Edge Bander
- iii. Multi Boring

A brief description of such machines is given below:

Table 5.4: Machines for panel processing

Technology Name	Description
Sliding Panel Saw	This machine cuts sheets vertically or horizontally.
Edge Bander	An edge bander bonds the edge banding to the substrate, trims the leading and trailing edges, trims top and bottom flush with the substrate, scraps any surplus, and buffs the finished edge.
Multi Boring	This machine bore plywood, particle board, and other materials in different shapes.

Note: Pictures of the machines are available in the Appendix

Source: Furniture Sector Study (2019)

5.2 Human Resource Development

The furniture industry is labour-intensive and requires a wide variety of skilled workers. In particular, mechanized production demands many new skills. Nonetheless, any notable improvement in the human resource development of the furniture industry is still absent. Therefore, inter-firm mobility of employees is very high. Industry experts argue that, except in a few cases, the furniture industry is still not organized in terms of human resource planning and workforce development. Moreover, the working environment is not very healthy in most cases.

5.2.1 Shortage of Skilled Labor

This sector is labor-intensive and needs specialized labor in sourcing, production and after-sales service. Most of the labor starts as an assistant or day labor (DL) in the business unit and over time, get experience and skills to start their own business. During the field visit, it was found that there is a shortage of skilled labor in licker, polishing, welding, painting, CNC operation, product designing, and quality control. Some big brands dominate plastic furniture production and require specialized skills in the production process. Furniture manufacturing facility owners provided the following responses to the intensity of the shortage of skilled workforce:

Table 5.5: Responses of Producers Regarding Shortage of Skilled Labor

Intensity of shortage in skilled labor	No of respondents	Percent
Very Low	8	1.9
Low	72	17.3
Medium	222	53.2
High	100	24.0
Very High	15	3.6
Total	417	100.0

Source: Furniture Sector Study (2019)

5.2.2 Labor Cost

The average monthly salary of unskilled labor in the furniture industry is 6,000 to 8,000 Taka. Some business owners mentioned that this industry finds it difficult to attract a workforce due to the low payment structure. Skilled workers switch jobs frequently, and their job retention is very low. For example, a machine operator usually gets 10,000 to 16,000 Taka monthly and is most vulnerable to changes in earnings.

Table 5.6: Perception of labor cost among respondents

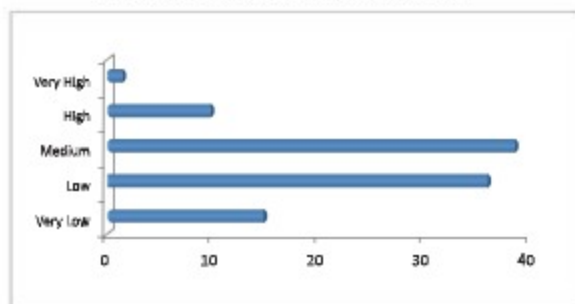
Labor Costs	Percentage
Very Low	0.7
Low	9.8
Medium	48.1
High	33.6
Very High	7.9
Total	100.0

Source: Furniture Sector Study (2019)

5.2.3 Labor Unrest and Working Environment

Labor unrest was reported to be low in the furniture industry and is one of the most encouraging aspects of this sector. Discussions with the entrepreneurs of this sector unveiled that this sector has been able to run without any major unrest over the years. Figure 5.2 presents the opinion of the survey respondents on the frequency of labor unrest.

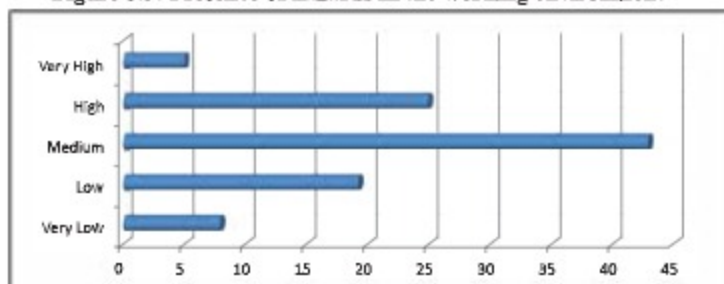
Figure 5.2: Incidence of labor unrest



Source: Furniture Sector Study (2019)

However, there are some problems in the working environment, such as (a) unplanned factory location, (b) lack of proper fire protection, (c) lack of proper factory environment and safety measures, (d) presence of excessive dust and particles, (e) low-level of compliance practices and (f) low level of employee knowledge on the protection of body parts. The following diagram reveals that more than seventy percent of respondents acknowledge the presence of medium to very serious problems in the working environment of the furniture industry.

Figure 5.3: Presence of hazards in the working environment



Source: Furniture Sector Study (2019)

5.3 Resource Efficiency

Resource efficiency includes using factors of production such as utilities, raw materials & human resources being efficiently used in the production process. The scarcity of resources leads to being more aware of using our resources for ultimate sustainability. Only a few large furniture businesses have partial automation systems in their production process.

About 75,000 enterprises and nearly 1.8 million labor are involved in this sector (White, 2018). Our findings also endorse this estimation with specific reference to enterprise. Akter (2014) found that the average growth of furniture exports has been slightly above 20% annually. So, the labor force participation has also been increasing over time. Our findings from past and present scenarios of the furniture sector suggest that enterprises with less than five employees have decreased by 17.5%, whereas the enterprises having 16 to 20 employees increased by 3.2%. Therefore, the skilled labor force has shifted from small to medium and large enterprises. At the same time, Zhu (2013) found that the overall labor productivity of the furniture industry rose by more than 5%, double from 2008 to 2012. Therefore, there is a global increase in demand and productivity in the furniture sector.

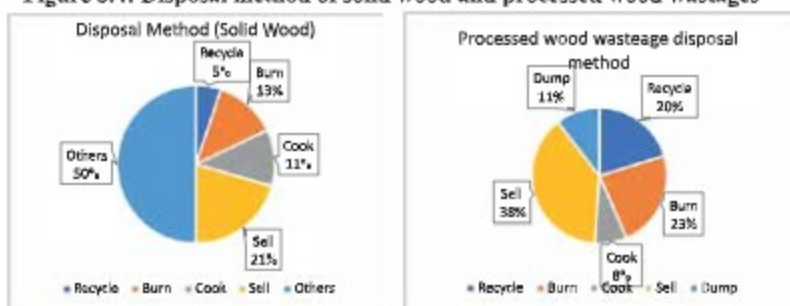
However, the scarcity of skilled workforce in handling modern equipment and machinery limits the prospect of growth of this industry. Such problems can be addressed by setting up more Technical Schools with a curriculum of short-term trade courses. In the furniture industry, large and medium firms tend to be vertically integrated, carrying out entire value-chain activities with the help of imported raw materials.

Moreover, the upper part of the value chain is mainly affected by the availability of raw materials, skilled labor force and investment in machinery and equipment. Nonetheless, investment in intangible assets such as design and functional innovation also plays a critical role. Bangladesh has no formal research and development for product and design innovation in the furniture sector. Xiong et al. (2017) mentioned that the core advantages of the furniture industry are design capabilities and research and development to innovate new ideas. Han et al.

(2009) examined the global competitiveness of the Chinese wooden furniture industry based on Balassa's Revealed Comparative Advantage Indices. They concluded that China had experienced a transition from a comparative disadvantage into a high comparative advantage over the period and has maintained a strong position in this labor-intensive industry. However, it still falls behind traditionally strong competitors such as Italy and Germany regarding quality and unit price.

This study found evidence of wastage in solid wood, processed wood, metal, cane and plastic categories. In the solid wood category, 66 percent of respondents said that wastages are high in various production sections like the sawmill, production unit, and distribution stage. Wastages are evident in wood-working waste, boards, metal, mixed waste and hazardous in different categories. The following figure shows the disposal of wastage in the wood subsector.

Figure 5.4: Disposal method of solid wood and processed wood wastages



Source: Furniture Sector Study (2019)

Compared to solid wood and processed wood, plastic, cane, and metal sectors are experiencing less waste.

5.4 Energy Efficiency

The findings from focus group discussions in different regions show that shortages of gas supply and electricity failure are two of the main hindrances to the development of this sector. Moreover, developing alternative energy resources is also essential in this sector. Five percent of respondents said that they experience even 2-hour-long load shedding. Around 20 percent of respondents are facing medium-range load shedding. This forces them to be dependent on generators. So, the cost of operation is increasing. Alternative energy usage rates are very low in this sector.

5.5 4th International Revolution and the Furniture Sector of Bangladesh

According to Lasiet et al. (2014), "Industry 4.0 describes the increasing digitization and automation of the manufacturing environment, as well as the creation of digital value chains to enable communication between products, their environment and business partners". Schwab (2016) expressed the need to understand how the Fourth Industrial Revolution will reshape the "economic, social, cultural and human context in which we live" (p.2).

The term "Industry 4.0" has become increasingly popular in the last few years. During 2005-2006, the number of published articles in the Scopus and Google Scholar databases increased drastically, from around 100 to 150; from 2007 to 2014, the number increased steadily. A significant growth appeared from 2014 to 2015, when 225 documents were published in 2015. China, the United States, and the United Kingdom are the top countries active in this field (Zhong et al., 2017).

Industry 4.0 is a model presented by the German government to lead manufacturing companies into the fourth Industrial Revolution (Lee et al., 2014). The main technologies of Industry 4.0 include sensors, communication protocols, cloud computing, cyber-physical systems, additive manufacturing, business intelligence, big data, and other emerging technologies. Most of these technologies are not the latest innovations. However, the combination of technologies, business processes, and data processing makes Industry 4.0 unique (Anderl et al., 2015). Value creation for organizations will be attained through innovative products and services, better competitiveness, and improved operational processes (Anderl et al., 2015).

Industry 4.0 is a new reality of the modern economy because innovation and technological development have an important role in each organization. Industry 4.0 considerably changes products and production systems concerning the design, processes, operations and services. The concept of Industry 4.0 assumes obscuring the differences between the work of people and machines. The first industrial revolution improved manufacturers' operation; the second introduced electricity into the industry; the third automated uniform tasks of line workers; and the fourth improved information management and decision-making (Ślusarczyk, 2018). In the concept of Industry 4.0, cost reduction, performance improvement, and also offering improved products and services, taking into account the preferences and behavior of consumers, are to be reached due to the automation of production based on the use and exchange of data in real-time, using artificial intelligence (Pieriegud, 2016; Androniceanu, 2017). The objective of Industry 4.0 is to achieve a greater level of operational effectiveness and productivity and also a higher level of automation. The most noticeable characteristics of the concept are digitization, optimization and personalization of production; automation and adaptation; human-machine interaction (HMI); value-added services as well as automated data exchange and communication (Roblek et al., 2016; Posada et al., 2015).

Industry 4.0 is creating a requisite for the revolution of traditional business models into digital business models and the need to connect various technologies and robots, all of which enable mass customization in manufacturing (Crnjac et al., 2017; Flynn, 2017). In general, Industry 4.0 is presented as the application of cyber-physical systems within industrial production systems (Posada et al., 2015). Industry 4.0 greatly influences manufacturing due to its focus on creating a smart environment (Mabkhot et al., 2018). The use of technologies in production organizations changes the organization of work and has a significant impact on job qualifications.

Industry 4.0, thus, brings and will continue to bring variations in production technology, organization and competencies, as well as change in job profiles (Morlock et al., 2016). Industry 4.0 holds a huge potential and will provide economic and social opportunities through the paradigm shift regarding work organization, business models and production technology (Kagermann, 2013). In the Industry 4.0 framework, everything in the manufacturing environment is integrated, autonomously exchanging information, triggering action and controlling each of them independently, allowing smarter processes to be created (Weyeret al., 2015). It allows all physical processes and information movements to be available when and where they are needed across all-inclusive manufacturing supply chains, multiple industries, small and medium-sized enterprises (SMEs), and large companies (Wang et al., 2016). Industry 4.0 is still a relatively new subject in academic literature, and there are gaps in business intelligence research on the subject. Thus, there is a need to grasp what has been investigated and what remains to be studied. Enterprises from Germany and the United States indicate a similar degree of preparation for challenges related to Industry 4.0 – about 70% consider themselves well-prepared for this issue.

The wide-ranging expansion of digital technologies led to the existence of a new term, Industry 4.0, considered the new Industrial Revolution. New technologies such as IoT, BDA, robotics, additive manufacturing, etc., are widely disseminated and used in different fields (retail, pharmacy, logistics, etc.). At the same time, these technologies change approaches to doing business, providing new opportunities. There is no doubt anymore that Industry 4.0 brings business organizations closer together. The nature and strength of contacts between those organizations gain significant importance because, nowadays, the industry structure is highly distributed among many companies (Paulus-Rohmer et al., 2016). To be successful, business organizations use more or less the same technologies and tools provided by Industry 4.0.

The furniture sector has recognized that it lacks professionals with high qualifications in ICTs and other emerging technologies. Some of the specific skills and competencies that stand out as critical for furniture sector managers are ICT skills essential to operating in a modern business environment. They may require attention in terms of additional training and adjustments in the official curricula. These skills and competencies are the ones that are the most critical. These will be useful for mass production and customized products like ICT support, management systems and E-commerce. In the context of the furniture industry, it relates to manufacturing equipment, which will be characterized by applying highly automated machine tools and robots. The increased automation and robotization required for Industry 4.0 will also have far-reaching implications on the overall manufacturing operations within the furniture industry (Xu et al., 2018). The benefits of applying automated technologies in furniture manufacturing outweigh its initial high investment, and with higher productivity levels gained, the return from such investment can be significantly shortened (Bahrin et al., 2016).

A study emphasized that in the cost-sensitive furniture manufacturing industry, the economic benefits of applying automation outweigh any other factor in the decision to explore

5 Up2Europe (2019), available at: <https://www.up2europe.eu/>

such technologies; it also revealed that furniture manufacturers are not ready to adopt Industry 4.0, and any efforts by the government to push for such transformation will require the provision of incentives and other tangible economic benefits (Ratnasingam et al., 2019).

The Malaysian furniture industry is an important socio-economic sector, contributing over USD 2 billion annually while employing almost 93,000 workers (Ratnasingam et al., 2012). The launch of the national policy framework on Industry 4.0 also articulated the attention given by the government of Malaysia to adopt this transformation to boost the economic growth of the various sectors in the country (MITI, 2018).

In the context of the furniture sector of Bangladesh, to cope with the upcoming 4th industrial revolution, stakeholders who attended FGD and KII of this study stated that there has been very little progress in digitization and automation in manufacturing units. Only a few brands, such as Hatil, Akhter, Partex, Otobi, Brothers, Nadia, and RFL, have introduced various automation options. All other small and medium enterprises are not yet ready to embrace the concept. In the case of creating a digital value chain, most manufacturers use conventional patterns of doing business. Large manufacturers like RFL, PARTEX, and Brothers use a hotline to serve their customers. Other large organizations are using corporate numbers for the same purpose. Even the use of strategic alliance and collaboration stands at an early stage, indicating that the furniture sector does not understand the importance and thus is not yet prepared for the 4th industrial revolution.

5.6 Furniture sector contribution meeting the related Sustainable Development Goals

Furniture is one of Bangladesh's most geographically dispersed industries, with a presence in every division, district, upazila, and union parishad. Hence, this sector helps to eliminate poverty by creating labor-intensive jobs both in urban and rural areas and is directly connected to the achievement of SDG 1 by creating employment for about 2 million people directly. Patria et al. (2019) presented that the furniture industry has flourished from its cottage industry days into a major economic contributor. Beforehand, the industry used to rely heavily on imported furniture from Malaysia, India, and Thailand (DATABD.CO, 2019). However, these days, domestic manufacturers have taken the major share of the market by providing quality products. Around 70% of products are home furniture, and 30% are office furniture (DATABD.CO, 2019).

This industry contributes to achieving Sustainable Development Goals (SDGs), such as poverty reduction, GDP growth and employment generation. This sector is mainly labor-intensive, and with the reinforcement of capital investment, the industrial output, employment, and overall contribution to GDP are increasing over time. Bangladesh has a comparative advantage of labor-intensive production, and the trade patterns have reflected the same notion for several years. Consequently, labor-intensive economic and industrial development can subsidize production and employment numbers, assisting people experiencing poverty. Therefore, redistribution of income through industrialization of the furniture sector can help the economy to eliminate poverty faster than before. At the same time, the improvement of backward linkages and diversity of raw materials make this sector more vibrant and help it perform better. Traditionally, the furniture industry in Bangladesh developed as a cottage-based industry. It was in the 1990s that the furniture industry in Bangladesh transitioned from a cottage-based industry to a mechanized mass production-oriented industry (Bukoski et al., 2018). After that, the furniture businesses began to grow, accommodating modern machinery, innovative designs, and diverse materials. The furniture industry of Bangladesh is shifting its focus from dependency on the teak for raw materials to processed wood (Bukoski et al, 2018).

Furniture manufacturers steadfastly deliver excellent products and services while sustaining a corporate conscience with the basic family unit at their center and the environmental and social goals integrated into their essence. Maintaining this balance provides meaning and relevance to its existence. The alignment between the core goals of the furniture sector and the SDGs are as follows:

1. Promote the belief in local products (pertinent to SDG 12)
2. Create an efficient and fluid workplace (pertinent to SDG 8,9 and 11)
3. Make the higher level of employment and leadership (pertinent to SDG 1, 8 and 9)
4. Create a harmonious work environment (pertinent to SDG 3,5,8 and 10)
5. Increase the skilled workforce to generate human capital (pertinent to SDG 1, 8 and 9)
6. Create a sustainable forest, preserve the environment and assure wood supply (pertinent to SDG 11, 12, and 13)
7. Revolutionize the methods of the industry through innovation, service and overall value. (Pertinent to SDG 9).

Thus, as a key industrial sector in Bangladesh, the furniture sector's development is closely connected with achieving several SDGs. Reduction of poverty at the rural level is strongly connected with the growth and development of this sector. Besides, this sector can make notable contributions to many SDGs through product innovation, creating a decent work environment by removing work hazards and improving health and safety standards, earning foreign currency by boosting exports, and modernization of the manufacturing process.

CHAPTER 6

BARRIERS TO INDUSTRY DEVELOPMENT

6.1 Industrial and Institutional Barriers

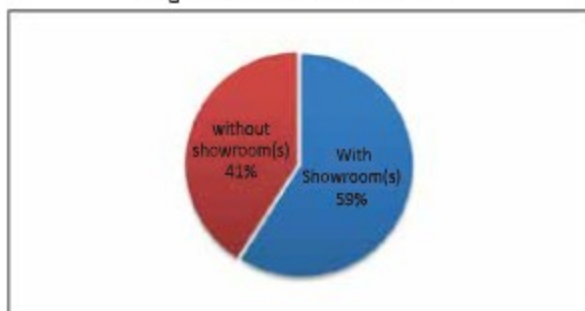
a) Inadequate supply of workforce: Small and medium manufacturers located in various parts of the country tend to adopt basic machines to minimize labor requirements. According to the interviewees, there is a labor shortage in cities, and therefore, firms tend to substitute labor with machines. Often, they need to hire technicians from abroad. However, manufacturers still face a shortage of skilled machine operators when installing machines for furniture production. The opinions of the industry association leader are:

- People are lagging in terms of technical solutions to furniture-based problems.
- This sector lacks world-class furniture designers with innovative design sense.
- The need for aesthetic solution with appropriate design sense is essential to compete in the international market.

(b) Low social recognition/ status of furniture employees: One of the main reasons for the shortage of skilled workforce supply in the furniture sector is low social recognition for jobs in this industry. As a result, people are generally not interested in pursuing furniture-related diplomas or other technical education. Even owners with generations of legacy or experience are hardly interested in engaging their children in this industry.

(c) Insufficient Showroom: Regarding the showcasing aspects of the furniture products, 59% of the survey respondents own showrooms, and the remaining 41% do not own any showrooms. Moreover, space is a matter of competitive advantage in the furniture business. A good location is required for displaying furniture and to attract customers. Initial fund availability for opening a showroom in an attractive location is another main challenge for most owners in this sector.

Figure 6.1: Showroom status



Source: Source: Furniture Sector Study (2019)

(d) **Warehousing difficulties:** The basic business process of any manufacturing concern, including the furniture manufacturing entity, starts with sourcing raw materials. After that, there are more than two stages where warehousing is a major issue (Figure 6.2).

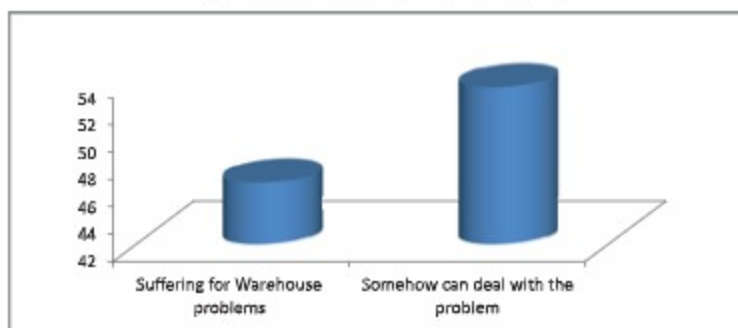
Figure 6.2: Process flow chart



Source: Furniture Sector Study (2019)

This study discovered that furniture manufacturers are highly concerned with the warehousing issue. For wooden furniture, it is important to season the wood for a certain period, which requires warehousing. The field visit found that the arrangement is available in some firms, such as Partex and Otobi. Firms need warehousing on three levels: warehousing of raw materials, warehousing of finished goods, and warehousing of sold products not distributed to the end users. The study also affirms that warehousing is a problem for furniture manufacturers in particular. More than 45% of respondents agreed about the problems in warehousing (Figure 6.3).

Figure 6.3: Problems in warehousing



Source: Source: Furniture Sector Study (2019)

(e) Lack of sound industrial practices: Very few firms in the furniture industry follow standard industrial practices. Firms in this industry rarely follow standard operating procedures, environmental standards, and policy rules related to employee health and safety. They rarely maintain formal books of accounts.

One of the KII participants stated that “a firm once was successful in receiving orders from a foreign buyer. When the goods were in the deliverable stage, buyers came to visit production sites. The buyer observed that the production process had deficient workers' health and safety standards and didn't follow some quality standards. This consequently led the buyer not to agree to take the delivery of the final product. The seller lost the contract with huge unsold inventory.”

(f) Low quality of fabric and technical instruments: The renowned furniture manufacturers also claim that the supply of tools from the light engineering sector and fabrics from the textile sector does not meet the quality standard for producing quality products, and consequently, they face lower demand of exporting furniture in the international market.

(g) Lack of drive to internationalize: Because of inadequate information about international markets, low capacity to meet global demands, high import tariffs, and low-quality industrial practices, the furniture industry in Bangladesh is solely focused on the domestic market and lacks the drive to internationalize. Domestic firms still have the opportunity to expand outlets across the country as domestic demand is growing. Local companies use the Dhaka International Trade Fair (DITF) as a promotional tool and create a customer base from the DITF. At the same time, firms in the local market can set their prices relatively high since high import tariff rates prevail on the import of finished furniture. As a result, furniture producers from China have restricted access to Bangladesh, although Chinese firms have a lower cost structure than those operating in Bangladesh.

(h) Absence of certification/quality assurance cell: There is no certification authority or quality assurance cell in Bangladesh for declaring the source of raw furniture materials as environmentally friendly. FCA Certificate is not available in Bangladesh.

(j) Absence of deep-sea port: Bangladesh has no deep-sea port. Mother vessels come to Singapore, and carrier ships bring containers from Singapore's deep sea port to Bangladesh. These loading and unloading stages increase costs. Besides, after the arrival of ships in Bangladesh, machines and materials are transported to the wood factories through highways, which also adds high transportation costs. In other competing countries, logs and furniture are carried by trains. Therefore, they can keep their costs down, increasing their competitiveness in the world market.

(i) Negligible forest endowment: Forest endowment in Bangladesh is inadequate; hence, the domestic supply of solid wood is insufficient to support the furniture industry. Consequently, producers in Bangladesh heavily depend on imported solid wood logs. Bangladesh also relies on international sources for machinery and chemical supply. China has low-cost raw materials, whereas Bangladesh cannot enjoy this facility.

(j) Transportation cost: Most of the big factories in the furniture sector are located in Dhaka. As a result, firms need to pay high transportation costs to shift materials from Chittagong to Dhaka during import and export. So, they have a low-cost advantage to be competitive in the international market. Due to high export orientation and the availability of large numbers of factories around seaport areas, China enjoys low transportation costs, consequently offering them high competitiveness in the international market.

(k) Low capacity of batch production: Most Bangladeshi firms don't have batch production facilities or capacity by which they would be able to distribute the cost more effectively.

(l) Lack of research and training: There is no research on innovation and market expansion in the furniture industry. Moreover, training arrangements are also not at a satisfactory level. Only Akhter Furnishers started a private training institute. However, public training arrangements have not yet been properly developed for this sector.

(m) Complexity in implementing a cash incentive plan: The government of Bangladesh gives a 15% cash incentive on furniture export. This cash incentive process is complex and time-consuming, and the relevant authority doesn't cooperate adequately to realize such incentives quickly, which fails to add value in reducing costs.

(n) Inadequate institutional capacity: Though the government gives cash incentives for furniture export, there is no duty drawback. Duty drawbacks are challenging to implement due to the responsible authority's lack of institutional capacity and low ethical conduct. That's why governments' initiative is confined to offering cash incentives. Besides, Bangladesh's customs authority assesses the import value based on a fixed rate. Importers want the assessment value to be the same as the value of the commercial invoice.

(o) Increased VAT imposition: Manufacturers of metal furniture claim that when the raw materials (MS sheet) are imported, the importers pay VAT. Again, when the manufacturers make finished goods and sell them, the government charges another 15% VAT. This increased cost discourages both manufacturers and customers from buying the furniture. It's a burden on them and increases the product prices.

6.2 Tariff and Non-Tariff Barriers

The furniture industry heavily relies on imported raw materials, as the supply available from domestic backward industries like MDF board, particle board, melamine board, small tools and fittings, fabrics, leather, steel, and metal are of inadequate and poor quality. However, the current duty structures for importing these materials are high, and the average composite duty rate on furniture accessories and parts is around 52%. Although a few large firms in the furniture industry produce some processed wood materials, they do not supply these to other competing firms. Policymakers further pointed out that large manufacturers negotiate with the government to keep the existing tariff wall on their safety line, through which they can easily buy the raw materials cheaply. Although it might facilitate the domestic supply of raw materials, costs of production increase due to high import intensity, which in turn decreases firms' competitiveness in international markets.

Furthermore, the country naturally depends on international supply, considering Bangladesh's scanty forest asset endowment. Under these circumstances, a high import tariff is a big drawback to the healthy growth of the furniture industry in Bangladesh. Government offers a 15 percent cash incentive against furniture exports. Still, the amount could not make the exporters competitive as they must pay a high import duty on raw materials. Only 0.026% (i.e., \$63 million) of the global demand for furniture is met from Bangladesh. Nonetheless, the sector is losing competitiveness compared to other countries in the global market due to the high tariff structure on raw material imports.

Bangladesh imports all the secondary sheets for metal steel manufacturing. According to manufacturers, the customs authority classified secondary sheets into four types: colour, galvanized, hot role, mild steel, etc. The metal manufacturers want the custom authority to exclude the grading system and treat all the sheets as secondary.

6.3 Marketing Barriers

A range of marketing barriers is confining the progress of the furniture sector. Marketing barriers include promotional issues, product development aspects, order management systems, sales analysis, market research, and logistics issues, which the FGD, KII, and survey respondents of this study indicate.

6.3.1 Problems in inbound and outbound logistics, loading and unloading

This study identified some problem areas around inbound logistics, loading, unloading, and outbound logistics. They are primarily evident at port due to the mixed-use of manual and semi-automated unloading and loading machines. Inbound logistics around the country are dependent on road transportation. The trucks and lorries used in this sector are seriously suffering due to massive road construction & maintenance around the country and different hidden costs associated with road transportation and security. As per this study, over 80% of furniture businesses use manual labor for unloading and loading purposes (Table 6.1 and Figure 6.4).

Table 6.1: Problems in inbound logistics, loading and unloading

Response State	Percent
Facing problems in logistics aspects	41.5
Not facing serious challenges in logistics aspects	58.5
Total	100.0

Source: Furniture Sector Study (2019)

6.3.2 Problems in Distribution

Customers order their furniture by visiting the store or phone, where most firms don't have a product delivery tracking system. Therefore, the number of orders in terms of volume and amount is not reported correctly in the book of accounts. It creates a conflict between VAT authorities and business owners. Many business owners are not interested in accurately recording sales value due to fear of VAT. Order tracking software is not seen in any furniture manufacturing concern, irrespective of size. Third parties provide inbound and outbound logistic services; thus, customer responsiveness is usually not prioritised.

Table 6.2: Consent on order management systems

Responses on order tracking existence	Percent
Not available	48.2
Neutral	27.7
Available	24.1
Total	100.0

Source: Furniture Sector Study (2019)

6.3.3 Low Emphasis on Promotional Activities

Micro and small business owners are not aggressive in promoting their products. They use personal contact and location advantage as two primary means to promote their products. They do not have a separate team to run promotional activities. Medium-sized local brands are giving promotions in online and offline media and are also keen to get their location advantage in promoting their products. 33 % of the respondents admit that they seriously lack product promotion activities. From various FGD and KIIs, it was found that they need to exercise:

- Coupon offers and seasonal discounts
- Direct selling
- Advertising through social media, newspaper, and television commercial ads
- Provide credit/collection
- Service products and provide other services
- Provide inventory/storage
- Arrange transportation

This is primarily due to an inadequate understanding of current trends, the high cost of establishing large showrooms, and a lack of initiatives on integrative promotion policy.

The furniture manufacturers' participation in local and international trade fairs remains low. Table 6.3 presents the respondents' agreement relating to the problems of promoting furniture products.

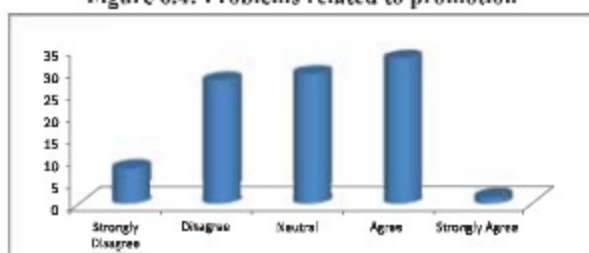
Table 6.3: Firms need to launch promotion activities

Response	Percent
Strongly Disagree	8.0
Disagree	28.0
Neutral	29.5
Agree	33.0
Strongly Agree	1.5
Total	100.0

Source: Furniture Sector Study (2019)

The small and medium firms with high-cost structures, amounting to 8 percent of the respondents, are strongly reluctant to do promotional activities. About 33 percent of respondents agreed they must expand the market through promotional activities.

Figure 6.4: Problems related to promotion



Source: Furniture Sector Study (2019)

6.3.4 Absence of Sales Forecasting

Various sales forecasting tools and techniques are available, but firms hardly use them. Owners project sales primarily based on their experiences. Thus, non-projected production, inefficient warehousing and inventory management systems are prevalent in this sector. The respondents' agreement on the sales forecasting problem is presented in Table 6.4.

Table 6.4: This industry lacks proper forecasting of sales

Responses	Percentage
Strongly Disagree	2.9
Disagree	14.8
Neutral	34.8
Agree	40.3
Strongly Agree	7.3
Total	100.0

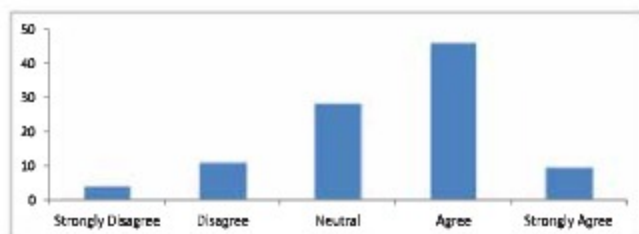
Source: Furniture Sector Study (2019)

About 40.3 percent and 7.3 percent of the respondents replied that they strongly agree on this issue and they need to improve their sales forecasting to design their work schedule of production more accurately.

6.3.5 Inadequate Market Research

This study finds that one of the key reasons behind the non-existence of furniture industry-specific innovation is the lack of market research. Even the medium and large organizations do not adequately emphasise research and development. Most of the Bangladeshi furniture is copied or inspired by foreign brands. The survey data also resembles this scenario in Figure 6.5. 46% of the respondents agreed that this industry has a problem with marketing research. In addition, due to inadequate allocation of funds, medium and large organizations are not equipped to research and design innovative and attractive furniture. According to the manufacturers, maintaining an international standard research and development team is expensive.

Figure 6.5: Inadequate focus on market research



Source: Furniture Sector Study (2019)

6.3.6 Customer Management

Customers can be categorized in various forms, such as:

- i) Corporate and Retail
- ii) Office & Household
- iii) Urban and Rural

This categorization was very simple in earlier days. In the past, most furniture was in the household furniture category. However, customer demography has greatly diversified in the recent decade. Firms are not adequately prepared to address the needs of diverse customers. Traditional customer management practices are still evident. Thus, the respondents believe that there are problems relating to customer management in the furniture industry (Table 6.5). Different CRM practices should be incorporated to build a customer-friendly industry. Customers should be involved in product design and development stages.

Table 6.5: Problems related to customer management

Responses	Frequency	Percent
Strongly Disagree	22	5.4
Disagree	94	23.0
Neutral	117	28.7
Agree	152	37.3
Strongly Agree	23	5.6
Total	408	100.0

Source: Furniture Sector Study (2019)

About 37.3 percent of the respondents agreed that they felt the need to segment the market and target one or two. This essentially means taking the overall group of customers and breaking them up into similar smaller groups. Products and marketing activities are generally focused on two or more well-defined groups.

The hardwood lumber industry provides a good example of this type of strategy. Hardwood lumber comes in different grades. These different grades are marketed toward different market segments. Generally, higher-grade lumber goes to furniture and cabinet manufacturers, while lower-grade lumber is used by flooring and pallet manufacturers.

6.3.7 Inadequate Branding Initiatives

A brand is considered to be a storehouse of trust. From the customers' perspective, the brand impacts satisfaction and loyalty, whereas, from the manufacturer's perspective, it contributes to steady sales, premium pricing, and achieving competitive advantage. In reality, branding activities start from the ideation stage or even before. If we look at the world's big brands in this industry, like IKEA and Ashley, all their activities revolve around brands. Though we can't expect our medium and small manufacturers to think like global brand leaders, local brands need to consider that as the purchasing power of people in Bangladesh has been increasing, and they prefer foreign-branded products. Furniture is no different from that.

There is no alternative to initiating branding activities to ensure survival. Training for SMEs should incorporate the branding issue to increase their awareness. Branding does not necessarily mean you have to spend a huge amount of money, and it is only for the big manufacturer- this false thought process should be broken down. Every single manufacturer, irrespective of its size, can undertake branding initiatives. For example, choosing a memorable, meaningful, and likable name. This small consideration helps the manufacturer to kick off the branding initiatives. Apart from this, industry associations should take a leading role in making the manufacturers understand the value of branding and provide all sorts of support, if possible, to help them with their branding initiatives. Government agencies also need to help the industry showcase its products globally. High commissions in different countries could be an ambassador for showcasing our furniture industry products. If we can create demand for our furniture brand in other parts of the world, demand in the local market would also boost. This is because customers value foreign brands a lot, and when we see that our brands are competing head-to-head in their market, the demand for our homegrown brand will improve locally. Consequently, this will also improve customer satisfaction.

6.3.8 Inadequate Learning from Global Benchmarks: IKEA

Ikea, the world's leading furniture manufacturer, has adopted a very effective and efficient supply chain management system that ensures the quality of its products. It has an integrated supply chain allowing the company to control and handle the design,

manufacturing, warehousing, and retailing. So, it has real-time involvement in every value-adding activity of the company. In addition, it keeps the customer part of the supply chain, contributing immensely to the bottom line. For example, customers are liable to pick and assemble the product, freeing up lots of resources for the company. Moreover, by offering more customer involvement, the company generates more customer satisfaction than its rivals. This is achieved in the way customers assemble their own smart, aesthetic furniture bought at IKEA stores in no time, consequently improving their satisfaction level.

Apart from the mentioned activities, IKEA religiously follows numerous total quality management (TQM) principles while manufacturing its products. For example, the company focuses on customer needs, thereby having the 'Flatpack' concept. This concept made the product transportation and delivery friendly, reducing waste (*muda*), an important concept of TQM. Regarding the issue of waste, IKEA has one of the most efficient waste recycling systems developed by any furniture manufacturing company in the world. For example, from unpacking the items, cardboard is generated, which is later used by IKEA as compressed content for making tables at IKEA. These lessons of IKEA are exemplary in the furniture world. Companies around the world are following them. Bangladeshi furniture manufacturing companies should also start using the learning from such industry leaders.

6.3.9 Inadequate Learning from Leading Country in the Region: Vietnam

Vietnam is becoming one of the most distinguished suppliers in the world's furniture industry. They have achieved their current position due to the long history of manufacturing furniture for the domestic market. The internal demand was strong enough, and there was a tendency for Vietnamese people to buy furniture, which eventually fuelled the industry to stay strong and achieve its current position. Today, Vietnam is considered one of the dynamic players operating in the world's furniture market. This dynamic character made it the second-largest player in furniture from the Asia Pacific region and fifth in the world. In 2018, Vietnam exported \$ 8.66 billion worth of furniture, and a significant percentage of this export was contributed by offshore manufacturers having their manufacturing facilities set up in Vietnam. In particular, Vietnam currently has 1500 furniture exporters, of which 450 are inward FDI-based foreign manufacturers.

The key competitive advantage of Vietnam is its high flexibility. This flexibility has led the country to shift from manufacturing outdoor furniture to indoor furniture. Consumer spending on indoor furniture is quite high compared to outdoor furniture. This is one of the reasons Vietnam earns significant export earnings from this sector. The promise of this shift also encouraged the investors to have FDI in this sector and eventually export furniture from Vietnam. The government also has a pro-industry mindset and policy support. The Ministry of Agriculture and Rural Development stated they want to build a world-class furniture centre in Vietnam. The evolution of

the Vietnamese furniture industry and the actions taken by its stakeholders can offer valuable lessons for furniture industry players and stakeholders in Bangladesh. A coordinated action plan and a supportive mindset of the stakeholders helped Vietnam achieve such a position in the world's furniture industry. Following a similar path, Bangladesh can also be a dominant player in this industry.

6.4 Financial Constraints

The government of Bangladesh has historically placed a high priority on the SME sector. Hence, the government is prioritizing the SME sector in various documentation and policies. However, access to finance by SMEs has long been identified as a key barrier to the growth and development of SMEs in Bangladesh. A similar picture was evident in the furniture sector.

Most of the urban-based furniture business houses are dependent on either bank finance or personal finance. Suburban and rural business houses are getting finance from banks, personal sources, and NGOs. In general, financial institutions, while taking loan applications from any furniture manufacturer, ask for the following documents:

- The last three years of updated trade license
- Bank statement for last year
- Minimum transaction of more than Tk. 10 million
- Three copies of recent passport-sized photograph
- Photocopy of National Identity card
- TIN Certificate with a copy of tax return
- If space was rented, then the photocopy of the deed, and if self-owned, then ownership documents
- Last three years' utility bill
- Last year's LC/IRC/ERC (For import-export business only)
- Sales document
- Personal guarantor/Collateral

Based on the availability and authentication of the above documents, the bank determines whether a loan applicant will be approved. Moreover, based on the customer's sources and amount of yearly revenue and profit, the loan officer also scrutinizes the loan determination process. There remains a standardized percentage of profit margin for every industry, e.g., for the clothing industry, it is 5%. Based on this margin, the banks assess the client's eligibility and determine the probable amount of loan that can be sanctioned to the client. Banks also check the previous loan history of the client, the instalment payment report, the Credit Information Bureau (CIB) report, or the collateral given by the client and the client's market reputation. Banks are following their general complicated loan assessment process while evaluating and sanctioning loans for furniture manufacturers. This complex process and detailed documentation requirements are sometimes very burdensome for micro and small furniture manufacturers. The key problems in getting a bank loan are mentioned in Table 6.6.

Table 6.6: Problems of getting a bank loan

Difficulties	No. of Respondents	Percent
Collateral	12	32
High-Interest Rate	11	29
Additional Formalities	5	13
Lack of Knowledge	5	13
Difficulty in the instalment payment	2	05
Legal Documents	2	05
Lack of Bank Branches	1	03

Source: Furniture Sector Study (2019)

Most business owners mentioned the burden of collateral to get a formal loan. The loan amount to be sanctioned by the bank is based on an individual's asset value or yearly turnover of the business. However, small and micro business units find it hard to avail bank loans due to a shortage of cash transactions and a lack of appropriate documentation. The value of their assets and monthly turnover are not always very lucrative to the loan providers. In addition, the requirement of the guarantor is also a hindrance to getting a loan. At the same time, arranging an eligible guarantor from the micro and small furniture manufacturer is also difficult. Most of the FGD and KII participants thus request relevant stakeholders, including the government, to intervene and simplify the process for this sector.

Due to the difficulties in getting bank loans, many small firms are tempted to get loans from NGOs where the cost of funds is higher than that of commercial banks. Table 6.7 shows that 80 firms surveyed in this study obtained loans from NGOs, while 222 firms borrowed from their near and dear ones.

Table 6.7: Sources of loan

Sources	Number of Firms	% of firms surveyed
Bank	123	28.87
NGO	80	18.77
Others (Family and Relatives)	223	52.34

Source: Furniture Sector Study (2019)

This study finds that small furniture firms face financial barriers while purchasing new machines. One basic machine generally costs from Taka 70,000 to Taka 2,00,000. The general durability of these machines is 3-5 years. Low earning rates, difficulties in taking loans from banks, and higher costs of loans are more acute for small and medium firms. When small firms intend to buy machines in the above price range, some of them ultimately can't afford to buy new machines. Financing is also needed to establish showrooms, maintain warehouses, and establish factories.

Metal furniture manufacturers are not categorized as SMEs. Rather, they are treated as general clients in the banks. They repay their loan with a 14% interest rate, which is very high for them. No bank gives loans on machinery purchases for metal furniture manufacturers. The purchase of machinery is self-financed.

Table 6.8: Percentage of loan by Source

Percentage of loan	Loan from Banks	Loan from NGOs
up to 20	42	30
21 to 40	34	27
41 to 60	26	18
More than 60	21	5

Source: Furniture Sector Study (2019)

About 14 firms collect 0-20 percent of their funds from personal sources, 42 from banks, and 30 from NGOs. Because of the high costs of bank financing, more firms are using personal financing sources where the size of the funds is reasonably low.

6.5 Non-Financial Barriers

Inadequate technology and a lack of skilled workforce are also hindering this industry. Regarding technology, Bangladesh fully depends on imports from Germany, Italy, China, and Taiwan. Only 5% of manufacturers use appropriate machinery in production, and around 45% of respondents use basic local machinery/power tools. Lack of management skills is another prominent barrier to the potential growth of this sector. About 66% of the respondents have completed their study up to the S.S.C. level and have no formal training in business operations. They operate their business primarily on the experience they gained through doing jobs over the years (mostly learning by doing).

6.5.1 Geographical utility-based barrier

The underprivileged physical infrastructure is another fundamental reason for this sector's slow growth, causing it to lag behind other industries in Bangladesh. There is no dedicated space for furniture manufacturing factories. Business owners face difficulties in getting plots at BSCIC. The land fees in BSCIC are also high, according to the opinion of the furniture business owners. Unreliable electricity is another factor that adversely affects the growth of this industry. Outside of Dhaka, the availability of uninterrupted electricity is hardly ensured. The fluctuation of the electricity supply disrupts the production process. The electricity problem is severe in the Barisal and Rangpur districts.

6.5.2 Regulatory barrier

Based on the commercial invoice, the government gives 15% cash incentives on exports. About ten medium firms are exporting, which is insignificant in terms of total producers. NBR faces trouble in assessing the actual value of exports. Thus, NBR and business people have some misunderstandings regarding implementing the cash incentive package. NBR imposes VAT at a rate of 7% on production and 5% on sales revenue. Implementing VAT provisions appears to be one of the most contentious issues in the furniture industry. Misunderstanding arises in calculation procedures, documentation by the business people, the reluctant attitude of the customers, the inclusion of micro and small firms, and the benefits of being involved in such processes. Only local brands and suburban showrooms are included in the VAT coverage. The policy should also give direction for implementing and creating VAT friendly culture.

The metal furniture industry is treated as an industry-level business sector. Manufacturers claim that they operate their business at the cottage level. They want recognition as a “Small Steel Furniture Cottage Industry.” One of the basic demands of the manufacturer is “no tax on sales if the yearly sale is less than 30 lac taka”.

6.5.3 Legal barriers

This sector heavily depends on importing raw materials, accessories, parts, and specialized furniture for the healthcare sector. Policy interventions and monitoring are required to facilitate forest conservation, environmental regulation, production subsidy, and low-tech machinery adoption. While referring to the protection of intellectual property rights, one brand furniture producer shared his experience at the Dhaka International Trade Fair (DITF) 2018: “One of our designed beds got an enormous response, but we know that will be a slow item”.

While interviewing the entrepreneurs, this study finds that most of the firms collect design from others and there is no concern for intellectual property rights. Even the medium firms are not aware of the property rights issue.

6.5.4 Administrative barriers

Even though the furniture industry is a high-growth and high-potential sector, this study finds almost nonexistent furniture production in BSCIC or other economic zones. Hence, FGD participants nationwide have underscored the necessity of a separate furniture production zone. It will improve the capacity of small and medium firms. The FGD and KII findings indicate that most firms in the sub-urban and rural areas face problems in registration, certificates from environmental authorities, electricity connections, and VAT calculations. Besides, the following institutional barriers were also identified:

- Delay in customs clearance
- VAT calculation, inspection, and collection systems
- Hidden costs in transportation
- No allotment of plots at specialized zone
- Access to bank funding due to collateral, guarantee, long approval time, and short repayment period.
- Lack of training institute (Akhter Furniture is developing a private training institute).

Even though the rules and regulations are all similar, it is evident from the study that this sector is mostly dominated by the medium size big brands and they are the only sources of product design and development. This study also finds that no separate product design unit is involved in reviewing existing product demand and developing new designs. Some owners visit international fairs to get new product ideas. In some cases, firms collect pictures from various websites and develop new products. Due to the lack

of knowledge on protecting intellectual property rights, this industry runs in an unorganized form. Institutional steps such as developing a separate product and design institute and monitoring the field level for property rights might positively impact growth in the long run. Some notable causes of market failures are huge space requirements for showrooms, shortage of skilled workers (acute shortage of skilled workers in the Bamboo and Cane sector), and poor practices on intellectual property rights.

CHAPTER 7 CONCLUSION AND ACTION PLAN

7.1 SWOT Analysis of the Furniture Industry

<p>Strengths</p> <ul style="list-style-type: none"> • Inexpensive labour • High learning capacity of the workers • Dedicated workforce • Low-cost production capacity 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Difficulty in access to finance, particularly by small firms • Delay in availing support services from various agencies • Absence of true clusters with support and complementary supply chain • Lack of health and safety measures • Lack of support from industry association • Lack of connectivity between district and national level industry association • Low level of technological adoption • Insufficient showroom facilities • Lack of proper documentation in transactions • Inadequate vocational training facilities
<p>Opportunities</p> <ul style="list-style-type: none"> • High growth potential in local market • Huge export opportunities • Sizable segment of commercial market 	<p>Threats</p> <ul style="list-style-type: none"> • High dependency on imported raw materials • High import duty and VAT • Absence of certification authority • High transportation cost • Complex cash incentive plan • Low availability of expert workers and designers • Low social recognition of the workers

Source: Furniture Sector Study (2019)

7.2 Conclusion

The furniture sector is one of the high-growth and high-potential industries in Bangladesh. Among the many prospective industries in Bangladesh, the furniture sector is considered the second most promising labor-intensive sector. This sector employs more than 2 million people (NSDC, 2018). Even though the sector comprises five major categories of furniture such as solid wood, processed wood, cane, steel & iron, and plastic. Domestic supply is primarily fulfilled by solid wood and processed wood furniture. In recent years, people have started using plastic furniture for some specific purpose thus, this sub-sector of furniture seems to be growing. This study finds that the furniture sector comprises a variety of people from different backgrounds, most of whom have no sound educational background. There are vast differences in business size, use of raw materials, business growth, and production facilities.

Different estimations are available relating to the furniture market size in Bangladesh. However, most of those estimations are not comprehensive as they fail to incorporate qualitative and quantitative perspectives. This study is the first of its kind with specific reference to the furniture sector regarding accommodating the qualitative and quantitative perspectives. Accommodating both approaches, this study finds that the furniture market size of Bangladesh is around BDT 25,000 crores. This research doesn't conduct a census as it was not feasible from a time and cost perspective. It collects data from 426 furniture manufacturing concerns of different sizes and then projects the market size from there. This may raise some concerns about the prediction; nonetheless, this is the comprehensive one so far. Overall, the local market size of this industry is substantial and growing. This study finds that the size of furniture manufacturing firms in terms of number of employees is growing. For example, manufacturing firms

employing five or fewer employees decreased from 69 percent to 52.6 percent. This study also finds that furniture manufacturers with showrooms have been growing (i.e., 56.3 percent against 47.2 percent). Furniture manufacturers are investing more capital in their business. For example, the percentage of manufacturers investing an average of BDT 500000 drops from 89.2 percent to 74.4 percent. In contrast, 9.4 percent of the manufacturers are now investing an average of BDT 1500000, which was only 2.1 percent previously. Manufacturers investing BDT 3500000 increased from a mere 2.3 percent to 7.3 percent. The income of furniture manufacturers also seems to be increasing as this study finds that the percentage of manufacturers having an average monthly income of BDT 37,5000, 75,000 increases almost twice than before. The manufacturer earning less than them drops to almost half (i.e., 64.1 percent to 34.3 percent). From the domestic demand perspective, this sector has grown significantly over the years.

The furniture sector has already emerged as a major export earner, with robust growth recorded over the last couple of years. The global furniture market's value was USD 480.7 billion in 2017 and is expected to reach USD 654.6 billion by 2025 (Statista, 2019). It is expected to grow at a compound annual growth rate (CAGR) of 5.1% from 2018 to 2025. Although furniture exports from Bangladesh have been growing, exports have only reached USD 74.88 million in 2019, and export volume is projected to reach USD 100 million by 2022. The major export items are mattresses and quilts, which share about half of the total furniture export. These items are mainly exported to Western European countries, the USA, China, and Malaysia. The export of solid and processed wood furniture has maintained an upward trend and contributed about 15% of the total furniture export. Wood furniture is mainly exported to African countries, the USA, Canada, India, and some European countries, including Germany, Belgium, and Turkey. This study reveals that the exporters demand bond facilities on imported items intended to be exported to the foreign market. Chair and table made from rubber wood are gaining popularity in the world market. Bangladesh is immensely popular for making this rubber wood into attractive furniture and gaining a competitive advantage. According to Grand View Research (2019), the furniture market is driven by a number of socio-economic factors, namely rising disposable income, growth of real estate and hospitality industries, and demand for luxury and premium furniture from certain consumer segments of the country. Rising income across all population segments is also increasing the demand for standard and quality furniture. Furthermore, increasing government and institutional investment in infrastructure contributes to the demand for residential and commercial furniture in Bangladesh.

Despite being a promising industry with high export potential, this sector is grappling with numerous challenges in expanding its export market. A range of factors, including high dependency on imported materials (over 50% of raw materials are imported except solid wood-based furniture) and lack of strategic policy support on issues like value-chain integration, import duty, exploration of the international market, techno

logical upgradation, technical and vocational skills, and industrial parks are restraining the furniture sector from exploiting its full potential. In addition, the government also needs to facilitate the development of feeder industries to accelerate the growth of the furniture industry. Government agencies also need to investigate whether the cash incentives provided to furniture exporters are falling short of helping the exporters due to the excessive tariffs they pay for the imported raw materials.

This study finds that in both backward and forward value chains, much scope remains to add more value to the existing value chain. Thus, the existing value chain seems to be somewhat disintegrated; in other words, the value chain of the furniture industry is not integrated adequately. There are opportunities for local firms to invest in the backward value chain to supply raw materials for making processed wood furniture. Since China and Malaysia are moving to more capital-intensive industries, Bangladesh has an opportunity to take a greater share of the international furniture market. Thus, future demand for materials for making processed wood furniture is expected to rise in the coming years. The furniture sector also needs to develop strategic partnerships with the light engineering sector, plastic sector, and textile sector to ensure the development of a quality supply of tools, steel, metal, and plastic accessories, and fabrics which are indeed needed to make furniture to meet the demand of today's customers. As revealed in this study, wood furniture manufacturers claim that they import light-engineering tools and accessories from China since domestic suppliers cannot deliver high quality and wide variety of tools.

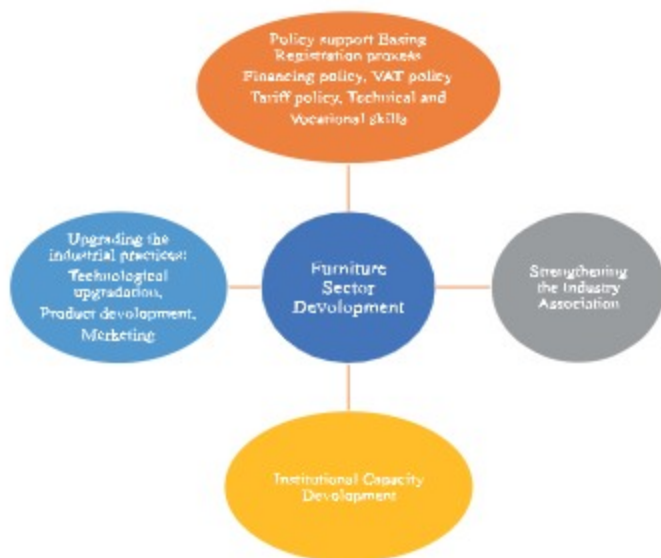
Similarly, plastic furniture manufacturers argue that they import virgin raw materials from China without a quality supply of recycled raw materials in the local market. All types of chemicals required in manufacturing furniture are also imported from overseas sources. Because of the high import dependency on required raw materials, plastic furniture production is costly in Bangladesh compared to its competing Asian countries. Thus, Bangladesh is not as competitive as its neighboring countries in exporting plastic furniture to the world market. The plastic sector needs to develop the capacity to produce quality recycled materials and chemicals to meet plastic furniture manufacturers' demand. This will harness the price competitiveness of plastic furniture in the international market.

Another key value chain-related friction furniture manufacturers face, especially the small ones, is the supply of technically sound workers, designers, and machine operators. In the future, furniture production will shift towards a modular form, which requires a high degree of automation and a higher number of skilled workforce. Therefore, developing technical and vocational institutes is essential to ensure the growing demand for non-managerial people with appropriate technological know-how. It is necessary if Bangladesh wants to create an international standard seamless value chain in the furniture sector.

7.3 Framework of Action Plan

The sustainable development of any industry requires long-term strategic actions in a coordinated fashion across various agencies and stakeholders. Considering the current stage of the furniture sector in Bangladesh, the following strategic framework is designed for the growth and development of this sector.

Figure 7.1: Strategic Framework and Action Plan for the Development of the Furniture Sector



Source: Furniture Sector Study (2019)

Components of the Framework	Proposed Action Plan	Implementing Agency
Policy Support	<p>Review of Tariff Policy</p> <ul style="list-style-type: none"> • Tariffs on import of essential raw materials and machinery need to be reduced. The existing tariff structure on the import of raw materials for the furniture industry is very high, which was reported to be 52% on average. Since the furniture industry heavily relies on the import of parts, the tariff rate on raw materials needs to be reviewed and reduced. If the tariff rate is reduced, processed wood furniture will grow faster because most materials are imported. In this regard, industry associations can provide a list of priority items for tariff reduction, which can then be assessed with the domestically available suppliers in the backward stages. 	<ul style="list-style-type: none"> • National Board of Revenue • Ministry of Industries • Industry Association
	<p>Access to Finance</p> <ul style="list-style-type: none"> • Access to finance must be eased by shortening the processing time and reducing the documents needed for loan applications. Allocation of funds as a proportion of total loan disbursement by the banks can ensure higher access to formal financing by furniture producers. This policy can mainly target areas where furniture clusters are more active. Sector-wise, quotas can be allotted, and priority can be given to the furniture sector. • Group guarantee systems can be developed instead of collateral for the small and micro enterprises that comprise most furniture entities. • Training the owners of micro furniture enterprises to use banks as a transaction channel is needed. Most micro furniture industry owners are reluctant to use banks as a channel of transaction, thus banks cannot assess the business value and are less interested in paying loans to the owners. • Non-bank financial institutions can also facilitate higher access to finance by providing venture capital. This study finds that some NBFIs, such as IDLC, are willing to make funds available for micro furniture enterprises. Institutional entities such as SMEF or Bangladesh Bank can pursue NBFIs and banks by providing guidelines and sufficient data for the promise of the furniture sector. A separate study can be done regarding the prospects 	<ul style="list-style-type: none"> • Bangladesh Bank • Commercial Banks • Industry Association

Components of the Framework	Proposed Action Plan	Implementing Agency
	<p>of venture capital financing in Bangladesh's furniture sector.</p> <ul style="list-style-type: none"> ● Rural furniture business owners are getting loans from various NGOs, where it is reported that the rate of interest is higher than that of banks. The Microcredit Regulatory Authority (MRA) and other authorities should monitor and extend help to micro and small enterprises to get funds at a lower cost. <p>Setting Furniture Industrial Park</p> <ul style="list-style-type: none"> ● A furniture industrial park can be established where investors will be provided with all necessary support to establish world-class furniture plants. This will promote local and foreign investment in the furniture sector. 	
	<p>Review of VAT Policy</p> <ul style="list-style-type: none"> ● Micro and small firms need a special or reduced rate of VAT instead of a flat rate. Small firms have identified the VAT rate as excessively high and the entire policy as complex. In their view, a flat rate of 15 percent VAT burdens them. Although the customers pay VAT in principle, small firms cannot separately charge VAT to the buyers. Moreover, the practice of adding VAT by the sellers in villages and towns is absent since they operate on a job-shop type of production. In this case, most sellers negotiate with the VAT collection authority for a fixed monthly payment, which appears to be a percentage of monthly sales. ● VAT calculations must be more straightforward and transparent (software support can help the producers and sellers calculate it). ● The VAT collection process should be automated. Other than that, most of the business entities remain out of the brackets. ● Business owners can be used as VAT collection partners. Thus, there should be a collaboration and partnership between the VAT collection authority and furniture business owners. 	<ul style="list-style-type: none"> ● National Board of Revenue ● Industry Association
	<p>Human Resource Development</p> <ul style="list-style-type: none"> ● Large and medium firms need to sponsor the apprenticeship program to develop skilled workforce. They can also 	<ul style="list-style-type: none"> ● Ministry of Labor and Employment

Components of the Framework	Proposed Action Plan	Implementing Agency
	<p>encourage linkage with small firms through subcontracting, which will foster knowledge sharing between large and small firms.</p> <ul style="list-style-type: none"> ● Setting adequate training institutes across the country to facilitate the supply of skilled workforce. There is a shortage of manpower with adequate technical know-how for a number of occupations, such as machine operators, carpenters, designers, lacquer operators, CNC operators, and PLC operators (Center for Trade and Investment, 2017). ● Modernization of technical and vocational institutes with updated curricula and infrastructure is needed. Technical and vocational institutes can develop apprenticeship programs with large firms to ensure the workforce is supplied with industry requirements. Besides, social recognition of technical and vocational education must be raised through media coverage and awareness-building activities. In this regard, successful models and experiences of SME development and technical education schemes of countries like Germany and Australia can be considered by the relevant agencies. ● Facilitating upholstery skills is needed to meet the future workforce demand in producing high-value-added leather furniture for the export market. Presently, there is a shortage of workforce with upholstery skills. 	<ul style="list-style-type: none"> ● Technical and Vocational Education Board ● Industry Association ● Training institutes
Institutional Capacity Development	<ul style="list-style-type: none"> ● Institutional capacity needs to be strengthened and arranged under one roof throughout the country so that entrepreneurs can start businesses easily and get necessary institutional services whenever needed. ● Providing one-stop service for trade license renewal, TAX, and VAT calculations and payments. ● Easy and faster customs clearance on imported items. A one-stop bond facility for raw materials import needs to be implemented. ● Allotment or arrangement of special zones in BASIC for micro and small manufacturers can be considered. ● Exploring the international markets by organizing furniture fairs worldwide under 	<ul style="list-style-type: none"> ● Department of Environment ● National Board of Revenue ● Customs Authority

Components of the Framework	Proposed Action Plan	Implementing Agency
	<p>the sponsorship of the embassy or consulate office of Bangladesh.</p> <ul style="list-style-type: none"> ● Introducing specialized furniture design and development courses under the Engineering universities like BUET, BUTEX, and Institute of Fine Arts. ● Establishing quality certification authority at national level. 	
Upgrading Industrial Practices	<p>Technological Upgradation</p> <ul style="list-style-type: none"> ● Supporting small firms in technology upgradation and converting manual tasks to application of modern tools. ● Launching separate financing schemes to facilitate technology purchases. 	<ul style="list-style-type: none"> ● Productivity Commission ● Industry Association ● Ministry of Industries ● Banks & other Financial Institutions.
	<p>Product Development</p> <ul style="list-style-type: none"> ● Training the entrepreneurs in product design, efficient use of materials and production process. ● Establishing design centres across the divisions of the country so that they can meet manufacturers' demands. ● Leveraging intra-industry practices to help firms operating in the backward and forward chain. 	<ul style="list-style-type: none"> ● Export Promotion Bureau ● Industry Association ● SME Foundation ● Ministry of Education ● Ministry of Industries ● Universities
	<p>Marketing</p> <ul style="list-style-type: none"> ● Arranging cluster showrooms and facilitating micro and small business owners for establishing showrooms under one shed. ● Developing common warehousing arrangements. ● Training small manufacturers on sales forecasting and promotions. ● Diversifying products by size, shape, function, product makeup, production process, ingredients used in the development, etc. 	<ul style="list-style-type: none"> ● Industry Association ● SME Foundation ● Ministry of Industries
	<p>Compliance</p> <ul style="list-style-type: none"> ● Certifying the work environment of the firms. Clear guidelines on employment and environmental practices for manufacturers are needed with a plan for supporting and integrating small firms with employment and environmental standards. In order to attract a new generation of workers and to explore international markets, standard practices 	<ul style="list-style-type: none"> ● Furniture Firms ● Department of Environment ● Ministry of Labor and Employment ● Industry Association

Components of the Framework	Proposed Action Plan	Implementing Agency
	<p>on employment, health and safety, and environmental protection must be ensured.</p> <ul style="list-style-type: none"> ● Monitoring the health and safety of workers and compliance with labor law in the firms. 	
Strengthening Industry Association	<ul style="list-style-type: none"> ● Establishing linkage between national-level associations and regional/district-level associations. ● Industry associations should facilitate standard practices for promoting subcontracting and outsourcing between large and small firms. ● Industry associations should supply product and market information to small and micro firms. ● Showcasing intra-industry products to complement each other. For example, cane furniture manufacturers may revive if they get support in showcasing products on the shelves of big and brand furniture manufacturers. 	<ul style="list-style-type: none"> ● Industry Association ● SME Foundation

Source: Furniture Sector Study (2019)

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ANNEXURES

Annex 1: List of FGD Participants

No.	Enterprise Name	Designation	District
1	Bank Asia, Rangpur, Marium Furniture	SEO and Head of Barnch	Rangpur
2	Furniture Timber Mart, Allah'r Dan, VaiVai Furniture, Molla Furniture, Salma Steel House, New Khan Furniture, Khan Furniture, Brac Bank, Janata Bank	Proprietors and Area In-charge	Pabna
3	AB Cane & Rattan Furniture New Modern Cane Shop Mustakim Cane Shop SB Furniture IDLC Finance LTD Tanvir Metal Brac Bank IDLC Finance Khulna Furniture Medallion Furniture Unique Plus Furniture Jalalabad Furniture SB Furniture	Proprietors and Manager	Sylhet
4	Bangladesh Bank SMEF SMEF Brac Bank Brac Bank RFL Group RFL Group New Modern Furniture Bangladesh Bank Wood Tech Solution National Board of Revenue Shahjalal Cane Furniture Orient Furniture	General Manager Special Program Department, SME Manager Assistant Manager Head of Small Business Head of Business Support and Women Entrepreneur Cell DGM (Export) General Manager (Regal Imperial) Proprietor Deputy Director Special Program Department, SME Senior Manager (Operation) Deputy Commissioner, Customs and VAT, Proprietors	Dhaka
5	Zila Sawmill and Furniture Association Zila Sawmill and Furniture Association Zila Sawmill and Furniture Association Zila Sawmill and Furniture Association	President, General Secretary, Advisor, Vice-President Proprietors, Officer Senior Officer Deputy General Manager	Feni

No.	Enterprise Name	Designation	District
	FeniSadar Sawmill and Furniture Association Bonorupa Furniture M/S Shahim Furniture Academy Islami Bank Islami Bank Akib Brothers Bhuiyan Furniture Noman Furniture M/S Haque Plastic Door Rupali Bank		
6	Abdullah Furniture Bondhon Furniture Al Akboria Engineering Works Al Hera Steel Furniture Shahjalal Isami Bank Lab Segun Furniture Agrini Bank Sujon Steel Works Khaja Cane and Foreign Furniture	Proprietors, Managers, Branch Manager, Principal Officer	Mymensingh
7	Ovijat Furniture Bismaillah Thai Enterprise First Security Bank South East Bank Mizan Engineering Workshop Shahin Furniture Mahfuz Furniture Eagle Furniture M/S Chitra Furniture Legend Furniture Khatun Plastic Industries Limited	Officer and Investment In-charge, AVP and Head of Branch, Proprietors and Production Manager	Chuadanga
8	IDLC Finance Limited Rupali Bank Sumaiya Furniture Kathure Furniture JF Foreign Furniture Rongdhunu Furniture M/S Shahadat Furniture	Branch In-charge (Acting) Assistant General Manager Proprietor	Barisal

Annex 2: FGD Checklist

FGD Checklist

1. Current size of the Furniture Industry	Large	Medium	Small
2. Number of Employees	P- W- PW-		
3. Investment	P- W- PW-		
4. Turnover (yearly)	P- W- PW-		
5a. Growth (Annual) 5 years_Home	P- W- PW-		
5b. Growth (Annual) 5 years_Abroad	P- W- PW-		

6. Segments	Type of Products	Types of Raw Materials	Sources of raw materials	
			Import (%)	Local (%)
Plastic				
Wood				
Processed Wood				
Cane				
Metal				

7. GDP Contribution	
8. Names of Technology Used:	P- W- PW-
9. Stages of Production Automation:	P- W- PW-
10. Future Automation of Furniture Production:	P- W- PW-
11. Value Chain Integration:	P- W- PW-
12. Supporting Industries:	Backward: Forward:
13a. Problems of the Industry Export/Import	P- W- PW-
13b. Problems of the Industry Finance	P- W- PW-
13c. Problems of the Industry Marketing	P- W- PW-

13d. Problems of the Industry Policy	P- W- PW-
13e. Problems of the Industry	P- W- PW-
13f. Problems of the Industry Innovation (technology + product + production process)	P- W- PW-

14. Recommendations

Large	Medium	Small

Annex 3: FGD summary

FGD in Sylhet

Number of Firms	Large (100+ workers) - Highest 5 Medium (20-50 workers) – Almost 50 Small and Micro (2-10 workers) – 50 thousand Metal Furniture – Around 100
Yearly Sales	Around BDT 50 crore
Initial Capital	3.5 to 4 crore (With showroom)
Challenges	1. Unequal competition between small and large business 2. Gas supply shortage
Recommendations	1. Separate plot for furniture at Sylhet BSCIC 2. One-Stop Service 3. Hassle-free utility services 4. Effective policy and tax holidays for infant industries 5. Reduce VAT and Tax

FGD in Barisal

Number of Firms	No large furniture shops Medium (20-50 workers) – 5 to 7 Small and Micro (2-10 workers) – 50
Yearly Sales	Around BDT 72 crore
Initial Capital	12 to 13 lacs (medium scale) 2 to 3 lac (micro-scale)
Challenges	1. Huge space for a showroom 2. Technologically behind other cities
Recommendations	1. Training facility for both owners and workers 2. A warehouse in the BSCIC area 3. Arrange furniture fair 4. Combined policy for the industry 5. Proper gas supply

FGD in Chuadanga

Number of Firms	300 solid wood furniture (10-29 workers) 30 large metal furniture (50+ workers)
Yearly Sales	Around BDT 150 crore
Initial Capital	BDT 5 lac
Challenges	1. 7% Tax on production and 5% Tax on sales 2. Heavy load shading
Recommendations	1. Plot in BSCIS area 2. Combined policy for the industry 3. Reduce Tax and VAT

FGD in Mymensingh

Number of Firms	100 solid wood shops (10-15 workers) 135 solid shops (5-8 workers) 250 solid wood shops (3-4 workers) 100 steel furniture shop
Yearly Sales	BDT 36 crore (Steel) BDT 70-80 crore (Solid wood)
Initial Capital	BDT 20 - 30 lac
Challenges	1. 7% Tax on production and 5% Tax on sales 2. Workers are losing their interest in this industry due to lower wages 3. Shortage of skilled workers 4. Unequal business competition with large companies

Recommendations	<ol style="list-style-type: none"> 1. Plot in BSCIS area 2. Combined policy for the industry 3. Reduce Tax and VAT 4. ACR can be compulsory for all 5. Impose VAT based on business size
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FGD in Feni

Number of Firms	40 sawmills (average five workers) – 25% automated 300 furniture (average five workers) 2-3 Furniture (More than 10 workers)
Yearly Sales	Around BDT 130 Corer
Initial Capital	BDT 20 - 30 lac
Challenges	<ol style="list-style-type: none"> 1. Tax policy is not business-friendly 2. Excessive formal procedure 3. Shortage of skilled workers 4. Unequal business competition with large companies
Recommendations	<ol style="list-style-type: none"> 1. Embargo on importing finished furniture 2. Separate loan policy for the industry 3. Business-friendly policy

FGD in Rangpur

Number of Firms	200- 300 furniture shops
Yearly Sales	Around 50 crore
Initial Capital	BDT 15 - 20 lac
Challenges	<ol style="list-style-type: none"> 1. Higher interest rate on loan 2. Loan procedure is not business-friendly 3. Acute shortage of skilled workers in the Bamboo and Cane sector
Recommendations	<ol style="list-style-type: none"> 1. Govt. auction should be open to all 2. Easy bank loan for the sector 3. Business-friendly policy

FGD in Pabna

Number of Firms	Around 200 Furniture shops (10-12 workers) 2-3 Cane shops
Yearly Sales	Around 120 crore
Initial Capital	Around BDT 10 lac
Challenges	<ol style="list-style-type: none"> 1. Lack of information on Govt. tender 2. Loan procedure is not business-friendly 3. Acute shortage of skilled workers in the Bamboo and Cane sector 4. Interruption in electricity supply 5. Unequal business competition with large firms
Recommendations	<ol style="list-style-type: none"> 1. Special training program for workers 2. Easier and fewer formalities for bank loan for this sector 3. Business-friendly policy 4. Insurance for workers 5. A special zone for furniture business

FGD in Dhaka

Number of Firms	1.25 lac firms all around in the Bangladesh
Yearly Sales	Around 10500 crore (Whole Market)
Total Worker	Around 32 lac
Challenges	<ol style="list-style-type: none"> 1. Shortage of skilled manpower 2. There is no training institution in Bangladesh for this industry 3. There is no local sourcing obligation for importers
Recommendations	<ol style="list-style-type: none"> 1. Special training program for workers 2. Easier and fewer formalities for bank loans for this sector 3. Business-friendly policy and proper synchronization among policies

Annex 4: Survey Questionnaire

Title: Survey Questionnaire on the furniture sector of Bangladesh

Code No:

Dear respondent, this study is related to the furniture sector of Bangladesh. The objective of this study is to get a comprehensive overview of this sector including present scenario, future outlook and incentives to provide to accelerate the growth of this sector. We thank you for your kind participation in this survey. Your valuable comments and observations will help us to recommend effective strategies to boost the sector further. Your response will be used only for research purpose.

1. Name of the interviewee:

2. Organization name:

3. Address:

4. Interviewee Information:

4.1 Gender: (a) Male; (b) Female

4.2 Age: (a) Below 20; (b) 20 to 30; (c) 30 to 40; (d) 40-50; (e) above 50

4.3 Education level: (a) Primary; (b) Secondary; (C) HSC; (d) Graduate
(e) Post graduate

5.1 Year of starting the business:

Past and present scenario of the business/company

Variables	Past condition	Present condition
5.2 No of Employees		
5.3 Sources of raw materials	(a) Local (%) (b) Imported (%)	(a) Local (%) (b) Imported (%)
5.4 Amount of capital		
5.5 Source(s) of fund	(a) Personal (%) (b) Bank (%) (c) NGO (%) (d) Others (%) Loan period (if any) (a) Less than 1 year (b) 1-5 years (c) More than 5 years (d) Others.....	(a) Personal (%) (b) Bank (%) (c) NGO (%) (d) Others (%) Loan period (if any) (a) Less than 1 year (b) 1-5 years (c) More than 5 years (d) Others.....
5.6 Average monthly income	(a) 25000 and less (b) 25001-50000 (c) 50001-100000 (d) Above 100000	(a) 25000 and less (b) 25001-50000 (c) 50001-100000 (d) Above 100000
5.7 Target customer	i) Household (%) ii) Office (%)	i) Household (%) ii) Office (%)
5.8 Name of the Technology used and number of machines	a) Bit machine b) Joint machine c) Randa machine d) Circular machine e) Drill machine f) Jali machine g) Bending machine h) Welding machine i) Others	a) Bit machine b) Joint machine c) Randa machine d) Circular machine e) Drill machine f) Jali machine g) Bending machine h) Welding machine i) Others

5.9 Do you have showroom?	(a) Yes (b) No	(a) Yes (b) No
5.10 Reason for choosing Manufacturing location	a) Cheap Labor b) Lower space rent c) Production facilities d) Availability of raw materials e) Others	a) Cheap Labor b) Lower space rent c) Production facilities d) Availability of raw materials e) Others

6. Profit margin	(a) 5-10%	(b) 10-15%	(c) 10-20%	(d) More than 20%
7.1 Monthly production	7.2 Monthly sales volume		7.3 Monthly net profit	
BDT	Cash:	Credit:		

Segments	Type of Products	Types of Raw materials	Sources of raw materials	
			Import (%)	Local (%)
8.1 Solid wood				
8.2 Processed wood				
8.3 Plastic				
8.4 Cane				
8.5 Metal				

9.1 Shortage of capital in purchase of raw materials	Agree	Disagree
9.2 Problem in warehousing	Agree	Disagree
9.3 Problem in inbound logistics loading and unloading	Agree	Disagree

10. Problems related with labor (Please give tick mark)

Labor Issues	10.1 Skill					
	Very low	Low	Medium	High	Very high	
10.2 Cost	Very low	Low	Medium	High	Very high	
10.3 Availability	Very low	Low	Medium	High	Very high	
10.4 Unrest	Very low	Low	Medium	High	Very high	
10.5 Working environment	Very low	Low	Medium	High	Very high	

Segments	Wastages	Disposal method				
11.1 Solid wood	Yes/No	(a) Recycle	(b) Burn	(c) Cook	(d) Sell	(e) Dump
11.2 Processed wood	Yes/No	(a) Recycle	(b) Burn	(c) Cook	(d) Sell	(e) Dump
11.3 Plastic	Yes/No	(a) Recycle	(b) Burn	(c) Cook	(d) Sell	(e) Dump
11.4 Cane	Yes/No	(a) Recycle	(b) Burn	(c) Cook	(d) Sell	(e) Dump
11.5 Metal	Yes/No	(a) Recycle	(b) Burn	(c) Cook	(d) Sell	(e) Dump

12. Demand supply scenario (Monthly):

Types of furniture	Demand (BDT)	Supply (%)	Import (%)	Export (%)
12.1 Solid wood				
12.2 Processed wood				
12.3 Plastic				
12.4 Cane				
12.5 Metal				

13. Do you own a factory? (Yes/ No) If yes, description of Factory (Space, location etc):

14.2 Why do you subcontract?

14.3 Prospect of non-subcontracting

15. Problems with roads and transportation systems:	Very low	Low	Medium	High	Very high
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Utilities	Cost		Monthly average usage	Availability (load shedding etc.)
	Installation	Per unit		
16.1 Electricity				
16.2 Alternatives to electricity				
16.3 Water				
16.4 Alternatives to water				
16.5 Gas				
16.6 Alternatives to gas				

17. To what extent do you agree that your firm faces the following marketing problems

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
17.1 Order taking	1	2	3	4	5
17.2 Promotion	1	2	3	4	5
17.3 Sales analysis	1	2	3	4	5
17.4 Market research	1	2	3	4	5
17.5 Customer management	1	2	3	4	5

18. Please indicate the industry competition pattern from the following:

	Very low	Low	Medium	High	Very High
18.1 Entry barrier	1	2	3	4	5
18.2 Threat of new entrants	1	2	3	4	5
18.3 Bargaining power of buyers	1	2	3	4	5
18.4 Bargaining power of supplier	1	2	3	4	5
18.5 Industry rivalry	1	2	3	4	5

19. Do you have any difficulties fulfilling the requirements for getting the bank loans?

(Yes / No) If yes, please mention it.

19.1 How much is the interest rate?%

19.2 Is the loan for short-term or long-term? Duration of loan.....

19.3 Further scope of financing

20. Do you have any relatives working abroad? Yes/ No?

21. Do you receive any financing from them? Yes/ No

22. Skill assessment of different occupations

Occupations	Number of		Types of job		Skills required	Training Provided		Skills shortage	Training centre
	Male	Female	Temporary	Permanent		On the job	Off the job		
Owner									
Floor-in-charge									
Supervisor									
Lead hand									
Charge hand									
Helper									
Worker									
Others (1)									
(2)									

23. Comparison of trained vs. Untrained employees:

	Trained employees	Employees without training
Monthly salary		
Efficiency		
Availability		

24. Do you have a separate quality control unit? (Yes / No) If yes, how do you check?

.....

25. Do you receive any Government assistance? (Yes / No)

25.1 Type of incentives you receive

25.2 What Support do you expect from the government?

- 1.
- 2.
- 3.

Interviewer name:

Date:

Comments:

Annex 5: List of KII participants

SL	Organisation Name	Designation
1	Brothers Furniture	Managing Director
2	Nadia Furniture	Managing Director
3	Otobi	Tax Officer
4	Omega Furniture	Proprietor
5	Banga Building Materials Limited (a sister concern of RFL)	Chief Operating Officer
6	Shahjalal Cane Furniture	Proprietor
7	Orient Furniture	Proprietor
8		President Boruga Furniture Owners Association
9	Hatil	President Bangladesh Furniture Owners Association
10	Export Promotion Bureau	Director Export Promotion Bureau
11	Wood Tech Solution	Chief Executive Officer
12	Standard Chartered Bank	Senior Business Development Officer
13	Bangladesh Bank	Deputy Director SME and Special Program Department
14	National Board of Revenue	Second Secretary VAT
15	Misumaru Industries	Managing Director

Annex 6: List of top furniture exporters

Exporters	Exported value in 2014	Exported value in 2015	Exported value in 2016	Exported value in 2017	Exported value in 2018
World	244181819	239280136	232756653	242271495	259591397
China	93374119	98530819	87509356	88973113	96416994
Germany	18091117	16294301	16870113	17277243	18669221
Poland	12227340	11326127	12252700	13847612	14753699
Italy	14416366	12826136	13024242	13715387	14564833
USA	11843287	11558117	11016416	10812188	10795616
Mexico	9668281	9902726	10354041	10675395	10597580
Viet Nam	5016815	5483213	5856760	6594776	9680709
Canada	4940571	5274685	5670294	5718697	5809971
Netherlands	4162470	4294512	4483964	5187443	5657565
Czech Republic	4351465	4266912	4949885	5349531	5654867
Bangladesh		39820	45096	62406	85188

Source: International Trade Statistics

Notes: Figures relate to export under HS code-94 (Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings). Export values are in the thousands of USD. Export values are in the thousands of USD. Bangladesh is added in the table to compare with major exporters.

Annex 7: List of top furniture importers

Importers	Imported value in 2014	Imported value in 2015	Imported value in 2016	Imported value in 2017	Imported value in 2018
World	221416640	216355867	220117221	234620366	251133773
USA	55782891	61163743	63151502	67228071	72113522
Germany	21275922	19328642	20359419	20628588	21668430
France	10584557	9599849	10162512	11008287	11988610
United Kingdom	11396574	11459378	11110964	11602247	11756615
Canada	9214660	8739222	8761298	9260670	9337646
Japan	8234988	7501095	7613236	7812790	8154106
Netherlands	5478074	5667377	6104028	7046014	7979588
Spain	4079571	4002617	4316699	4569390	4919889
Australia	4421417	4384694	4280731	4392264	4805793
Switzerland	4714070	4347642	4338191	4385982	4615981
Bangladesh		74225	227288	228700	217846

Source: International Trade Statistics

Note: Figures relate to import under HS code-94 (Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings) Import values are in thousand USD. Bangladesh is added in the table to compare with major importers.

Annex 8: Top furniture exporting countries and their share in the world market

Countries	2014	2018
China	38.2	37.1
Germany	7.4	7.2
Poland	5.0	5.7
Italy	5.9	5.6
USA	4.9	4.2
Mexico	4.0	4.1
Viet Nam	2.1	3.7
Canada	2.0	2.2
Netherlands	1.7	2.2
Czech Republic	1.8	2.2
Bangladesh		

Source: Authors' calculations based on the International Trade Center database

Annex 9: Top furniture importing countries and their share in the world market

Countries	2014	2018
USA	25.2%	28.7%
Germany	9.6%	8.6%
France	4.8%	4.8%
United Kingdom	5.1%	4.7%
Canada	4.2%	3.7%
Japan	3.7%	3.2%
Netherlands	2.5%	3.2%
Spain	1.8%	2.0%
Australia	2.0%	1.9%
Switzerland	2.1%	1.8%
Bangladesh		0.1%

Source: Authors' calculations based on International Trade Center database

Annex 10: Export of major Furniture Items from Bangladesh under HS Code in the year 2015-16

SL	Code	Details	Amount	Percentage
1	94043000	Sleeping bags	25308484.07	54.7796
2	94033000	Wooden furniture of a kind used in offices	6857964.36	14.8439
3	94034000	Wooden furniture of a kind used in the kitchen	5618275.40	12.1606
4	94041000	Mattress supports	2346408.49	5.0787
5	94036010	Microscope tables, laboratory benches, with glass cases, gas nozzles & tap fitting, of wood	1919419.54	4.1545
6	94017900	Seats with metal frames, not upholstered	1033602.20	2.2372
7	94049000	Articles of bedding, stuffed, etc (excl. mat)	810611.73	1.7545
8	94036090	Wooden furniture, n.e.s. other than cabinets for pharmaceutical use & for wash basins	587451.78	1.2715
9	94035000	Wooden furniture of a kind used in the bedrooms	381771.18	0.8263
10	94037000	Furniture of plastics	323604.79	0.7004

Source: Export Promotion Bureau and Authors' calculations

Annex 11: Export of major Furniture Items from Bangladesh under HS Code in the year 2016-17

SL	Code	Details	Amount	Percentage
1	94043000	Sleeping bags	30,433,347.34	57.9396
2	94019000	Parts of seats	2,700,827.63	5.1419
3	94039000	Parts of furniture, n.e.s	2,557,481.64	4.8690
4	94041000	Mattress supports	2,498,470.96	4.7566
5	94036090	Wooden furniture, n.e.s. other than cabinets for pharmaceutical use & for wash basins	2,393,933.50	4.5576
6	94035000	Wooden furniture of a kind used in the bedrooms	2,378,280.87	4.5278
7	94036000	Wooden furniture, n.e.s	1,978,874.57	3.7674
8	94060090	Prefabricated buildings of other materials other than those of plastics, wood, iron, aluminum or of fiberglass	1,894,365.48	3.6065
9	94033000	Wooden furniture of a kind used in offices	1,121,700.77	2.1355
10	94049000	Articles of bedding, stuffed, etc (excl. mat)	1,042,514.68	1.9848

Source: Export Promotion Bureau and Authors' calculations

Annex 12: Export of major Furniture Items from Bangladesh under HS Code in the year 2017-18

SL	Code	Details	Amount	Percentage
1	94043000	Sleeping bags	31582769.03	50.346690
2	94019000	Parts of seats	11256720.64	17.944552
3	94039000	Parts of furniture, n.e.s.	5376347.11	8.570537
4	94041000	Mattress supports	3232781.92	5.153439
5	94036090	Wooden furniture, n.e.s. other than cabinets for pharmaceutical use & for wash basins	2080195.75	3.316079
6	94017900	Seats with metal frames, not upholstered	1982577.72	3.160465
7	94035000	Wooden furniture of a kind used in the bedrooms	1582333.31	2.522427
8	94033000	Wooden furniture of a kind used in offices	1317406.63	2.100103
9	94036010	Microscope tables, laboratory benches, with glass cases, gas nozzles & tap fitting, of wood	1307660.58	2.084566
10	94037000	Furniture of plastics	1046203.05	1.667772

Source: Export Promotion Bureau and Authors' calculations

Annex 13: Export of major Furniture Items from Bangladesh under HS Code in the year 2018-19

SL	Code	Details	Amount	Percentage
1	94043000	Sleeping bags	32839845.74	46.354
2	94019000	Parts of seats	16872926.15	23.816
3	94036090	Wooden furniture, n.e.s. other than cabinets for pharmaceutical use & for wash basins	7293140.17	10.294
4	94017900	Seats with metal frames, not upholstered	3161935.35	4.463
5	94035000	Wooden furniture of a kind used in the bedrooms	2789788.89	3.938
6	94041000	Mattress supports.	2746115.60	3.876
7	94036010	Microscope tables, laboratory benches, with glass cases, gas nozzles & tap fitting, of wood	1426173.09	2.013
8	94037000	Furniture of plastics.	1340391.76	1.892
9	94049000	Articles of bedding, stuffed, etc (excl. mat)	634625.93	0.896
10	94054090	Other electric lamps & lighting fittings, n.e.s.	448121.11	0.633

Source: Export Promotion Bureau and Authors' calculations

Annex: 14: Pictures of Machines



Bit machine



Joint machine



Randa machine



Circular machine



Drill machine



Jali machine



Bending machine



Welding machine



Wood Sand Paper Machine



Wood Profile Machine



Wood Grinder Machine



Cut Saw Machine



Surface Planer



Thickness Planer



Combination of Surface Planer and Thickness Planer



Table Saw

 <p>A large industrial spindle moulder with a complex metal frame, various adjustment knobs, and a large rotating table. Two red plus signs are overlaid on the left side of the machine.</p>	 <p>A teal and silver plunge router with a black handle and a base plate. The brand name 'TruArc' is visible on the teal housing.</p>
<p>Spindle Moulder</p>	<p>Router</p>
 <p>A grey industrial mortiser with a vertical column, a hand crank on the left, and a cutting head at the top.</p>	 <p>A large industrial CNC machine with a red and white frame and a black grid table. It has a control panel on the left side.</p>
<p>Mortiser</p>	<p>CNC Machine</p>
 <p>A blue industrial sliding panel saw with a large table and a sliding blade mechanism. It has various adjustment points and a control panel.</p>	 <p>A teal and white industrial edge bander with a long table and a cutting head. The model number 'EB 140' is visible on the side.</p>
<p>Sliding Panel Saw</p>	<p>Edge Bander</p>
 <p>A grey industrial multi-boring machine with a long table and multiple cutting heads. The brand name 'QUEN HEAD' is visible on the top.</p>	
<p>Multi Boring</p>	

Source: Internet

Annex 15: Case Study: A Successful Woman Entrepreneur

Mrs. Rajiya Begum, owner of “Meem Home Furniture” located at Gulshan, Dhaka, is a successful woman entrepreneur. She started her business in 2003. When she decided to start a business, she was not financially sound and, therefore, had to sell her endeared ornaments. She started her journey with only seven workers and with a small showroom. Initially, she fetched furniture from other factories and sold those from her showroom. After a while, she started production in her factory and expanded her business to a relatively larger scale. About 80 workers are working under her direction; she has 3 showrooms in Dhaka. She also supplies furniture in cities such as Chattagram, Tangail, Sylhet, Mymensingh, Narayanganj, and Pabna. She has two factories now—One for producing Sofas only and another for making all other furniture in her showrooms.

After a lengthy discussion and repeated questioning session, she disclosed the real reason for her to think out of the box. It seemed she was not interested in revealing the reason because it was humiliating. She informed us that when she admitted her son to a renowned school in Dhaka, a guardian of another student asked her, “Are you capable of bearing this school expenditure?” Recalling that moment, she became a thin and dewy-eyed woman. And from this incident, she decided to do something of her own accord.

Her first and foremost challenge was money or funding. Lack of experience was another challenge for her. Being a woman and wanting to do something alone was considered a curse. Many people frowned at her and asked, “Why are you in this business? You should concentrate on your family.” She stood by her dream and fulfilled the dream with the help of a range of motivators, which are outlined below:

- Supporting husband
- Cooperative Mother-in-law
- Loan at a low rate of interest
- Positive reviews from customers
- Trustworthy workers
- Covering her story on SME Fair Magazine

Besides being a successful entrepreneur, she is an uncompromising housewife. She fostered her two offspring in good manners. She completes all her chores by 10.00 a.m. and goes to the factory to oversee her employee’s work. After spending some time in the factory, she returns home and goes to the showroom again at noon. She maintained her family and business simultaneously through a reasonable work-life balance. Mrs. Rajiya Begum is not concerned about brand shops. She stated that her customers visit showrooms due to positive word of mouth from her old customers; hence, brand shops are less of a concern for her. Both skilled and under-skilled workers are working in her factories. Skilled workers impart craftwork to novice workers. She thinks that the ongoing VAT rate is okay. It is not hampering her business at all.

As every business document is updated, she can pay VAT and Tax without hassle. According to her, winter is the peak season for selling furniture. As many marriages take place in this season, demand for furniture increases.

On the other hand, summer can be considered the off-season of the furniture business. However, she has no difficulty meeting the employees' salaries, rent, and additional costs, even in the off-season. Initially, she produced MS and SS furniture but started making wooden furniture to meet customers' demands. Presently, most customers want processed wood furniture. Solid wood furniture takes more time and money to produce, so customers are moving away from that type of furniture. She has many small and necessary machines such as a Cutter machine, Drill machine, and Joint machine. She has no CNC machine, so she goes to another factory needing CNC-related work.

She has profound gratitude to Brac Bank Ltd., which has supported her from the beginning of her business. She mentioned that after a few days of starting her business, she borrowed one million taka from this bank, which helped her in many ways. She also informed that only a few days back (when the interview took place), she borrowed 3.5 million taka from the same bank. Now, she considers this bank as her family member. She has two offspring. Her son studies at Bangladesh University of Engineering and Technology (BUET), and her daughter is an H.S.C examinee.

Table 21 presents the push and pull factors that worked for her to become an entrepreneur. This may give good inspiration to other new entrepreneurs as well.

Why Entrepreneur: At a glance

Push Factors	Pull Factors
1. Necessity of being economically empowered	1. Supportive family members
2. Thinking for the wellbeing of her offspring's	2. Convenient loan policy for women entrepreneur
	3. Cooperation of bank officials

