Determinants of Marketing of Handloom Items across the Heterogeneous Weaving Business Units: A Study of Nagaon District of Assam

A Dissertation Submitted

To

Sikkim University

In Partial Fulfillment of the Requirement for the

Degree of Master of Philosophy

By

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April, 2021

DECLARATION

I, Saddam Faruque, hereby declare that the dissertation entitled ***"Determinants of Marketing of Handloom Items across the Heterogeneous Weaving Business Units: A study of Nagaon District of Assam"*** *submitted to Sikkim University in partial fulfillment of the requirement for the degree of Master of Philosophy in Economics is a record of original work done by me during the period July 2019 till March 2021under the guidance and supervision of Dr. Pradyut Guha. This dissertation has not been submitted for any other degree of this university or any other university.*

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All the assistance and guidance received during the course of investigation have been duly acknowledged by him.

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Saddam Faruque

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List of Abbreviations

ACASH	Association of Corporations & Apex Societies of Handlooms
AdC	Advertisement Cost
Ag	Age
AGMC	Assam Government Marketing Corporation Ltd.
APR	Advance Payment Requirement
ATC	Agreement on Textiles and Clothing
ATRFED	Assam Apex Weaver's & Artisans Cooperative Federation Ltd.
BkA	Bookkeeping Account
BRAWFED	Bodoland Regional Apex Weaver's & Artisans Cooperative Federation Ltd.
CAGR	Compound Annual Growth Rate
CD	Community Development
CE	Communication Expense
CS	Credit Sale
CV	Coefficient of Variation
DNT	Distance to Nearest Town
DP	Delay in Payment
DRO	Distance to Retail Handloom Outlet
DWH	Distance to Weekly Hut
EU	European Union
EXIM	Export-Import
Exp	Business Experience
FGDs	Focus Group Discussions
FMI	Frequency of Market Information
FS	Frequency of Selling

FW	Number Fulltime Workers
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
Gn	Gender
HEPC	Handloom Export Promotion Council
INR	Indian Rupee
IW	Independent Weavers
LTA	Long Term Agreement
Max	Maximum
MC	Mekhela-Chador
MFA	Multi-Fibre Agreement
Min	Minimum
MoA	Mode of Acquisition
MPG	Membership of Producer Group
MPh	Mobile Phone
MS	Number of Managing Staff
MW	Master Weavers
NC	Number of Handloom Competitors
NCAER	National Council of Applied Economic Research
NHDC	National Handloom Development Corporation
OBP	Production on order basis
PS	Price Spread
PS_g^B	Price Spread of 'B' category Gamosa
PS_{mc}^A	Price Spread of 'A' category Mekhela-Chador
PS_{mc}^B	Price Spread of 'B' category Mekhela-Chador
SC	Storage Capacity
SD	Standard Deviation

SM	Mode of Selling
SP	Selling Price
SR	Sales Revenue
SR_g^B	Sales Revenue from 'B' category Gamosa
SR_g^O	Sales Revenue from overall Gamosa
SR_{mc}^A	Sales Revenue from 'A' category Mekhela-Chador
SR_{mc}^B	Sales Revenue from 'B' category Mekhela-Chador
SR_{mc}^O	Sales Revenue from overall Mekhela-Chador
STA	Short Term Agreement
SV	Sales Volume
SV_g^B	Sales Volume of 'B' category Gamosa
SV_g^O	Sales Volume of overall Gamosa
SV_{mc}^A	Sales Volume of 'A' category Mekhela-Chador
SV_{mc}^B	Sales Volume of 'B' category Mekhela-Chador
SV_{mc}^O	Sales Volume of overall Mekhela-Chador
SZ	Size of weaving unit
TC	Transportation Cost
TWU	Types of Weaver Unit
UAE	United Arab Emirates
UK	United Kingdom
USA	United State of America
VIF	Variance Inflation Factor
WH	Working Hours
WTO	World Trade Organization
YoS	Years of Schooling

Chapter I

Introduction

1.1 Introduction

India's textiles sector is one of the mainstays of the national economy, besides being an important source of employment generation and export earnings for the country (Kumar, 2015). By engaging more than 45 million people, the textiles sector of India contributed 7 per cent to the country's industrial production (in value terms), 2 per cent to the gross domestic product (GDP), and 15 per cent to the country's export earnings during 2018-19 (Ministry of Textiles, 2019). India is the second largest manufacturer and exporter of textiles in the world, with a share of 5 per cent of the global trade in textile products during 2018-19 (Ministry of Textiles, 2019). India's textiles products, including handlooms and handicrafts, are exported to more than hundred countries with USA and European Union being the largest trading partners accounting for nearly 48 per cent of India's textiles and apparel trade (EXIM Bank, 2018).

The textile manufacturing sector of India is primarily divided into two categories namely, the organized sector which comprises the composite textile mills, and the decentralized sector consisting of handlooms and power looms. Indian handloom weaving has fame globally for its rich variety and craftsmanship, the intricacy of designs. The handloom sector occupies a unique place in Indian economy besides being the largest source of non-farm rural employment. As per fourth all India handloom census of 2019-20, nearly 31.45 lakhs households in India are engaged in handloom weaving and allied activities, out of which 87.40 per cent are located in rural areas while only 12.60 per cent in urban areas. A caste-wise breakup shows that

about 14 per cent of handloom worker households of the country belongs to Schedule Castes (SCs), 19 per cent Schedule Tribes (STs), 34 per cent Other Backward Castes (OBCs) and 33 per cent households belong to others (Ministry of Textiles, 2020). Across the handloom households of the country, 27.01 lakhs looms being operated for weaving different types of handloom cloths, out of which 90.77 per cent are located in rural areas and only 9.23 per cent in urban areas (Ministry of Textiles, 2020). About 42.2 per cent of the country's total looms are pit looms, 31.5 per cent are frame looms, 11.3 per cent are loin looms while 15 per cent are all other types of loom (Ministry of Textiles, 2020). The handloom sector of India engaged 35.23 lakhs weavers and allied workers during 2019, out of which 50.8 per cent were engaged on a full-time basis while 49.2 per cent on a part-time basis (Ministry of Textiles, 2020). There is gender dominance in Indian handloom sector with nearly 72 per cent of workers being female (Ministry of Textiles, 2020). With reference to the nature of engagement of handloom workers in India, nearly 73.2 per cent work independently on a self-employment basis, 19.4 per cent work under master weavers, 6.3 per cent engaged with cooperative societies, 0.6 per cent under state handloom development corporation, and 0.4 per cent under khadi & village industries commission/board (Ministry of Textiles, 2020). The total handloom output of the country during 2017-18 was 7,990 million square meters of cloths, which accounts for nearly 15 per cent of the country's total cloth production (Ministry of Textile, 2019). Further, this sector makes a significant contribution to the export earnings of the country by supplying 95 per cent of the world's hand-woven fabrics from India (Ministry of Textile, 2019). During 2017-18, India ranked as the second largest exporter of handloom products in the world with the value of exports being US$ 353.9 million with USA continued to be the largest trading partner of the country (EXIM Bank of India, 2018).

The leading states in handloom weaving activities in India are Assam, West Bengal, Manipur and Tamil Nadu, absorbing 71.34 per cent of country's handloom households and 67.67 per cent of country's handloom workforce (Ministry of Textile, 2020). Across the states, the largest proportion of country's handloom households are located in Assam with a figure of 40.37 per cent followed by 17.25 per cent in West Bengal, 7.05 per cent in Manipur, and 6.66 per cent in Tamil Nadu (Ministry of Textile, 2020). Besides the largest pool of handloom households, Assam has prominent position in India by engaging highest number of country's handloom workforce with a figure of 36.45 per cent, followed by 17.93 per cent in West Bengal, 6.91 per cent in Tamil Nadu and 6.38 per cent in Manipur (Ministry of Textile, 2020). Handloom fabric has a unique identity across Indian states, such as Muga silk in Assam, Phulkari in Punjab, Chanderi in Madhya Pradesh, Ikats in Andhra Pradesh, Apatani in Arunachal Pradesh, Tie and Die in Rajasthan and Gujarat, Phanek in Manipur, Daccai in West Bengal, Kanjeevaram silk in Tamil Nadu, Jacquard in Uttar Pradesh.

1.1.1 Evolution of Indian Handloom Weaving Practices

The art of weaving is an age old tradition in India since time immemorial with the earliest evidences traced back to the Indus Valley civilization. Spinning and weaving were highly advanced occupations in rig vedic society in which weavers were engaged in weaving cotton and woolen fabrics while others were engaged in dyeing and embroidering. Until the beginning of industrial revolution in Europe, India was an exporter of textile products especially muslin and silk cloth. With Vasco-Da-Gama's discovery of trade route between India and Europe in 1498, countries like Portugal, Spain, Holland, France and Britain took interest in setting up trading companies in India with a view to purchase textile products from India. From the

sixteenth century European trading companies began buying Indian textiles for sale in Europe and by the end of the seventeenth century, 83 per cent of the East India Company's trade accounted for the export of clothing (Ministry of Textile, 2019). Till the end of the eightieth century, Indian handloom sector was the sole supplier of cloths; however such monopoly came to an end by the early ninetieth century due to the industrial revolution in Europe.

With the advent of the industrial revolution in Europe and immediately followed by the invention of spinning jenny in England, hand spinning which provided occupation to a large number of Indian people was completely replaced by the increased use of mill yarn. The colonial regime shattered the hand spinning culture of traditional handloom sector of India and forced the country as the supplier of raw materials to Britain. British began executing a protectionist policy in order to restrict the import of hand-woven fabric from India to Britain while dumping their machine-made clothes in India from Lancashire. The recessionary trend in Indian textile sector began with the development of cotton industries in Britain and by the end of the ninetieth century, English-made cotton textiles successfully ousted Indian textiles from their traditional markets in Africa, America and Europe. The Indian handloom weaving sector started facing competition from indigenous textile mills too with the establishment of the first textile mill in Bombay in 1851. Factory-made cheap cloths had replaced the Indian hand-woven fabrics within the country, and weavers lost their employment due to the shutdown of handloom units. Despite such adversity, Indian artisans had stood the test of time and had kept this great craft alive. Indeed, for the period ranging end of the nineteenth century and the first three decades of the twentieth century, there was an enduring brawl between the dumping of British mill products versus Indian hand-woven cloths with the rising call of Swadeshi goods.

Swadeshi movement of boycotting British products was popularized by Mahatma Gandhi and Indian mill owners, backed nationalist politicians, who called for a boycott of foreign cloths. Mahatma Gandhi started spinning himself and encouraged Indians to turn to handicrafts in order to become self-sufficient and boycott British imports. Gandhi made it obligatory for all members of the Indian National Congress to spin cotton themselves and collected large sums of money to create a grass-roots organization to encourage handloom weaving. India's independence from British rule marked a turning point for the handloom weavers of India which was largely attributed to Mahatma Gandhi's use of charkha, the spinning wheel, as a symbol of national regeneration and the subsequent focus on the handloom weavers during the freedom movement.

In the post-independence era, a number of institutions were established in different five-year plans period to channelise financial resources and other managerial assistance to the handloom sector. Also, to look into the difficulties of weavers and the sector, different committees were appointed at different times. With a view to assist the handloom sector, the government of India had established Cottage Industries Board in 1948 with a standing committee to look after the interests of the handloom weavers, and a handloom development fund of Rs.10 lakhs was also placed at the disposal of the committee. During the same year, the then Chief Minister of the composite Madras state C. Rajagopalachary formed a reservation policy for handloom products, and thus the notification of cotton control order 1948 under section 3 of the Essential Commodities Act was issued; by which Act certain items of clothes like sari and dhoties were legally prohibited from producing by mills and these items were exclusively reserved for handlooms with effect from June 1, 1950. In 1953 Government of India adopted Khadi and other handloom industries (Additional

Excise Duty on Mill Cloth) Act 1953, which provided duty on mill cloths with a view to enhance, assist and develop the handloom industry in terms of production, marketing, and quality control. For export promotion efforts of handloom fabric, Government of India constituted the Handloom Export Promotion Council in 1965 as a nodal agency for export promotion. Two important schemes viz. Intensive Development of Handlooms and Export Oriented Projects were started in 1976 by the Government of India in response to the suggestion by high powered committee on handlooms. In 1984, the Association of Corporations and Apex Societies of Handloom (ACASH) was set up to promote marketing in the handloom sector of the country, which acted as a nodal agency for the supply of handloom products to be purchased by various departments and agencies of the Government of India. During the fifth plan period, priority had been given for the development of handloom through the 20 point economic program. Handloom (Reservation of Articles for Production) Act 1985, reserving 22 items of clothing for exclusive production in the handloom sector was a major concrete initiative in the direction of protecting handlooms from the power loom and mill sectors. The Abid Hussain committee was appointed in 1990 to review the textile policy of 1985 which mainly focused on weavers. With a view to provide all types of yarn at Mill gate price to the organization of weavers, Mill Gate Price Scheme was introduced in 1992-93.

International trade in textiles and clothing had, so far, been governed by a separate set of Agreements, under which developed countries imposed discriminatory quotas on exports of textiles and apparel from developing countries, violating the GATT's principle of non-discriminatory treatment, with a view to protect the domestic markets. The separate set began with a Short Term Agreement (STA) in 1961 for international trade in cotton textiles. It was soon converted into a Long Term

Agreement (LTA) negotiated in 1962 for five years which was twice renewed for terms of three years ending in 1973. It is worth noting that despite these initiatives taken by the developed countries, the 12-year term of LTA witnessed growth in exports of textile products from less developed countries particularly due to changing trends in consumer preferences for non-cotton fibres. As a result, the developed countries tried to bring imports of non-cotton textile products under control and such effort was finally succeeded with the signing of Multi-fibre Agreement (MFA) in 1974, which extended the coverage of discriminatory quotas from cotton textiles to wool and manmade fibres. The MFA was renegotiated four times, the last time in 1991, and it finally expired in 1994. During MFA regime countries which are rich in textiles production such as China, India, Korea, etc. remained at a disadvantageous position and witnessed a negative pinch as their production and exporting capacity always remained in excess of the quotas (Chaudhary, 2011). For gradual dismantling of quotas, MFA was followed by the Agreement on Textiles and Clothing (ATC), which came into force with the establishment of the World Trade Organization (WTO) in 1995. ATC was a transitional agreement that regulated trade in textiles for 10 years after which with the elimination of all remaining textile quotas from January 1, 2005, the textile and clothing sector was fully integrated into the regulatory framework of the General Agreement on Tariffs and Trade (GATT) of the World Trade Organization (WTO). The completion of phasing out of the MFA on 1st January 2005 would expand the size of the market available to the major textiles producing countries that had been restricted by the quotas. India has placed in an advantageous position to exploit the larger market available in the post-MFA regime. During the post-quota period, India has emerged as a major sourcing destination for new buyers. India’s textiles and clothing export recorded robust growth of 25 per cent

in 2005-06, and the growth continued in 2006-07 recording an increase of 9.28 per cent over the previous year (Chaudhary, 2011). After the MFA phase-out, India's cotton textiles including handlooms exports grew from US$ 4600.78 million in 2005-06 to US$ 5564.15 million in 2006-07 (Chaudhary, 2011). During 2007-08 the cotton textiles exports of the country amounted to US$ 6851 million, recording a healthy growth of 23.14 per cent over the exports during previous year (Chaudhary, 2011). Total Textile and clothing exports of India were valued at US$ 39.2 billion in 2015-16, which increased to US$ 40.4 billion in 2018-19 (Ministry of Textile, 2019). India became the world's second largest exporter of handloom cloths, with exports valued at US$ 353.9 million in 2017-18 (EXIM Bank of India, 2018). As per EXIM bank of India report of 2018, the major export markets of Indian handloom products include USA, UK, Spain, Italy, Germany, UAE, France, Netherland, Australia, and Japan.

1.1.2 Handloom Weaving in Assam

Handloom weaving forms a cultural constituent for the people of Assam. The loom is a prized possession and has been a way of life for most of the rural people in the state. Several types of handloom fabrics are produced traditionally for domestic use in Assam, the most prominent and prestigious amongst are Mekhela (lower wear of the women similar to Saree), Chadar (upper wear of the women similar to dupatta), Riha (ornamented towel wrapped around the waist), Gamocha (towel), Dhoti (lower wear of men), Dokhona (a length of cloth worn by Bodo women which cover from chest to foot), Aronai (a small Scarf used by bodo people), Shirts, Ladies tops, Shawls, Stoles, etc. Mekhela-Chadar, the indigenous traditional Assamese dress woven from ethnic Muga or Paat silk of Assam, is now globally recognized for its magnificence and fineness. The designs and patterns made in the Mekhela-Chadars are traditional motifs that represent elements of Assamese culture and traditional art.

Gamocha is also known as 'Bihuwaan', as it is an essential part of Bihu festival of Assam. The culture of the tribals of Assam is incomplete without the weaving culture which has been practiced since time immemorial. The Bodos of Assam are renowned for their rich heritage of weaving and Bodo women have been acknowledged as one of the finest weavers in northeast India. Women receptionist of bride and bridegroom in Boro marriages (called Bwirathi in Bodo society) also wear Matha Dokhona as a tradition. But Matha Dokhona with yellow colour is used as traditional bridal attire, which is known as Dokhona Thaosi (pure Dokhona). Aronai (a small Scarf) is the sign of Bodo tradition and is used to felicitate guests with honour, as a gift. Weaving loom among the Misings is a symbol of love and affection. The weaved-out dresses are worn on various occasions and festivals like Ali-Ayé-Lígang and Po:rag (two chief festivals celebrated among Mising communities). It is compulsory to dress in self-woven clothes during their weddings among the Mising community. The Karbis, Kacharis, Tiwas, Hajongs, Dimasas, and Rabhas are also dexterous weavers, weaving mesmerizing fabrics.

Assam is known as the reservoir of Indian handloom weaving practices. The state holds around 1.27 million handloom households which are 40.37 per cent of the country's total handloom households, and nearly 1.11 million looms which account for 46.75 per cent of the country's total looms (Ministry of Textile, 2020). By absorbing the largest proportion of handloom households and looms of the country, handloom sector of the state has engaged 19.48 lakhs workforce in weaving activity during 2017-18, out of which 78.54 per cent are part-time weavers and 21.46 per cent are of full-time in nature (Directorate of Economics and Statistics, 2018). The state occupies a unique position in Indian handloom weaving sector by producing all four varieties of commercially important silks viz. Muga, Tassar, Mulberry, and Eri

(Hazarika et al., 2015; Hazarika and Goswami, 2018). While India is the second largest producer of silks after China, Assam is the third largest silk producing state in the country, sharing nearly 15 per cent of the country's raw silk production (Ministry of Textile, 2018). The state produces about 125 MT of muga silk every year and has achieved geographical indication (GI) for muga thread because of its endemic nature (Directorate of Economics and Statistics, 2018). The handloom and textiles department of Assam, directly runs 98 weavers' extension service units, 20 handloom production centers, 102 handloom training centers, 4 handloom training institutes, 1(one) product procurement centre, 1(one) handloom research and designing centre (Directorate of Economics and Statistics, 2018). All these institutes are working for the benefit and welfare of weavers outside the cooperative sector. The gross output of weavers' extension service units and handloom production centers of Assam was 51.2 thousand meter handloom fabrics during 2017-18 (Directorate of Economics and Statistics, 2018).

Handloom weaving activities are practiced in almost every district of Assam. Amongst the various districts, Golaghat district has engaged largest percentage (6.66 per cent) of the state's total weavers during 2017-18, followed by 6.03 per cent in Nalbari, 6.03 per cent in Barpeta, and 5.86 per cent in Darrang. The number of weavers engaged on a full-time basis was largest in Darrang district with a figure of 16.52 per cent of Assam during 2017-18, followed by 11.60 per cent in Kokrajhar, 10.75 per cent in Tinsukia, and 10.32 per cent in Golaghat. The production of handloom cloths was highest in Kamrup (rural) district with a figure of 4725 metres during 2017-18, which accounted for 9.23 per cent of the state's total cloth production, followed by 7.67 per cent shared by Karimganj, 6.54 per cent by Cachar

and 5.85 per cent by Hailakhandi district (Directorate of Economics and Statistics, 2018).

With ultimate producer and consumer being different agents, the proper marketing of handloom items has relevance for timely delivery and genuine pricing. Handloom weaving activities in Assam mostly being carried out on an informal basis, the marketing of handloom fabrics in Assam is performed by various agents viz. weavers themselves, master weavers, middlemen, co-operative societies. Within the institutional setup, there are various marketing agencies working in Assam for marketing of handloom weaving items viz. Assam Apex Weaver's & Artisans Cooperative Federation Ltd. (ATRFED), Assam Government Marketing Corporation Ltd. (AGMC), and Bodoland Regional Apex Weaver's & Artisans Cooperative Federation Ltd. (BRAWFED). Furthermore, there are some national organizations directly or indirectly supporting and promoting the marketing facilities of handloom cloths for both domestic and export purposes, notably the Association of Corporations & Apex Societies of Handlooms, National Handloom Development Corporation, and Handloom Export Promotion Council. These agencies are expected to protect the interest of handloom weavers by releasing them from the clutches of middlemen and providing sufficient facilities for marketing their products at competitive prices. For proper marketing and export across countries, they provide financial aid. During the financial year 2016-17, an amount of INR 40.96 crore was released as marketing incentives by the government of India (EXIM Bank of India, 2018). As per the information given by the Union Minister of Textiles, Smriti Zubin Irani, in Lok Sabha on 6th December 2019, these marketing agencies have provided marketing opportunities to 6,78,500 weavers during last two years (Ministry of Textile, 2019).

1.2 Statement of the Problem

Handloom weaving is the largest economic activity next to agriculture, providing direct and indirect employment to a significant section of rural people in India. Despite its importance in absorbing a significant section of working-age population and a source of rural livelihood, the sector is faced with few challenges since past couple of years across the Indian states. Notable amongst them are losing interest of weavers towards their profession, shutting down of several handloom units, declining output of the handloom units, etc. As per third handloom census of India, the number of handlooms in Assam has declined from 14.09 lakhs in 1987 to 13.22 lakhs in 1995, and further declined to 11.12 lakhs in 2010. During 2002-03 till 2016-17, handloom cloth output of the state has recorded a decline from 3, 46,058 metres to 48,449 metres, recording an 86 per cent fall in output (Directorate of Economics and Statistics, 2017). Host of factors being traced responsible for the crisis in handloom sector notable amongst them are shortage of raw materials, inadequate working capital, lack of financial support, weak marketing link, and stiff competition from power loom and mill sector (Akter and Ghosh, 2005; Reddy, 2006; Raihan, 2010; Raju and Rao, 2014; Liton et al., 2016; Sudalaimuth, 2017). Amongst various problems faced by handloom sector, weak marketing link has been traced as one of the major challenges faced by the handloom weavers in Indian states (Ramswamy, 2013). Being a household based activity with rural informal business set up, a widespread marketing mode in the handloom weaving sector is represented by middlemen or private traders who concentrate more on the niche market and their functioning is characterised by exploitation of weavers (Niranjana, 2001; Niranjana, 2004; Sarmistha, 2015; Mishra et al., 2016). Primary producers of handloom fabric have no direct access to either markets or market information (Niranjana, 2004;

Sarmistha, 2015; Exim Bank of India, 2018) while private traders or middlemen can correctly estimate the market demands in terms of price, quality, and design and therefore to a larger extent control the marketing (Mishra et al., 2016). In the absence of a proper marketing channel, most of the weavers in rural areas with weak bargaining power are forced to sell their products to the middlemen or private traders at low prices for their dependency of finance and raw materials (Chakravorty et al., 2010; Pandey, 2013). Weak marketing channels between ultimate producer and ultimate consumer in handloom weaving sector leads to skedaddling of lion's share of business gain by middlemen or traders or commission agents etc. Weak marketing link with the presence of many intermediate agents in value chain to some extent constrain the ultimate producer of handloom weaving items in reaping the appropriate business gain that they deserve. Hence, there is a need for examining the problem of marketing of handloom items in the hierarchy of value chain and the factors determining effective marketing across the heterogeneous weaving business units in Assam.

1.3 Review of Literature

The present section outlines the studies carried out by former scholars on various dimensions of handloom weaving sector in India and overseas. The literature reviewed has been classified into different groups on the basis of areas of research as in the following sub-sections.

1.3.1 Growth of Handloom Sector

While studying the growth of Indian handloom sector Kumar (2015) found a positive and statistically significant trend of production during 2005-2013. Dev et al., (2008) stated that growth performance of cooperatives determines the growth of the

master weavers, middlemen, and independent weavers; well-performing cooperatives were found to be best safeguard for the handloom sector in Andhra Pradesh. Financial assistance was a critical contributory factor in initiating and sustaining relative growth of handloom sector in Bangladesh (Chowdhury, 1985). While evaluating the growth and structural change of the handloom industry of Bangladesh over a long period Chowdhury (1989a) remarked that production growth rates for all categories of hand-woven fabrics in the country's post-liberation years had been higher than in the pre-liberation decades, while Sobhan (1989) mentioned structural adjustment in the sector ensured competitiveness against imports and to remain the supplier of the significant portion of cloths in the domestic market of Bangladesh.

1.3.2 Marketing of handloom and Other Small Scale Units

Using firm level data of cotton weavers of Bangladesh Chowdhury (1981) observed that input markets were imperfect and cloth market as product differentiated. A study by Niranjana (2004) in Andhra Pradesh contradicted the conventional perception that handlooms catered to a niche market only, and that formation of cooperatives was panacea to tackle the problems of raw materials, market access, and employment in the handloom sector. It was remarked that well functioning smaller cooperative societies had suffered due to amalgamation with larger cooperative societies on one hand and the apex body of weavers' cooperative societies had failed in their marketing policies on the other hand, which led to the collapse of many cooperative societies and ultimately affected the common weavers in the state. While investigating the roles of master weavers in the value chain of handloom weaving business, Singh and Kumar (2018) found that all the weaving related activities were controlled by master weavers whereas marketing activities were under the control of middlemen; the middlemen purchased the finished products from master weavers and

then sold it to the retail stores and wholesalers. Chakravorty et al.,(2010) pointed out that due to the absence of marketing organization, weavers were forced to sell their product in local buyer markets with low profit margin while a part of the products reaching in local markets bought by middlemen to resell in other markets. Boro (2017) found that most of the weavers in Udalguri district of Assam were selling their woven products in weekly markets and the volume of sales increased rapidly during the months from October to April because of marriage ceremony celebrations, Bihu, etc. among the society. Das (2016) mentioned that weavers' cooperative societies in Assam were marketing their product themselves within the village and also through exhibition cum sale, fair, and expo. While examining the factors influencing the marketing performance of the handloom societies in Erode district of Tamilnadu, Kumudha and Rizwani (2012) stated that span of society, number of working members, gender of the manager, experience of the manager, number of looms owned by the society were positive significant determinants of marketing performance. Ramswamy (2013) outlined that low margin, slackness in demand, exploitation by traders, competition from power loom products, and limited resources for publicity were the major marketing problems confronted by the micro artisan enterprises in Thenzawl handloom cluster; they were found to be dependent on the traders or middlemen for selling their products, and thus exploited by the middlemen in terms of profit margin. While investigating the relationship between marketing strategies (product, price, place, and promotion) and customer retention in handloom sector of Sri Lanka, Ismail and Safrana (2015) found that product and promotion had a strong positive relationship with customer retention, while price and place had a moderate positive relationship with customer retention. The success behind Febindia as a major player in the retail marketing of handloom sector in India was excellent business

practices ensuring the quality of product (Modak 2006). While examining the marketing strategies followed by the Dastkar Andhra Marketing Association (DAMA) operating in Andhra Pradesh, Puri (2006) pointed out that the association representatives visited retailers of handloom cloths in all major cities of the state with the DAMA sample book of current products, production schedules and book orders to provide work to their committed looms; strong relationships were established with the retailers with a detailed knowledge of their buying schedules and product mix.

While investigating the marketing problems faced by the rural industries of Bangladesh from diverse sources, Bakht (1984) mentioned that on the input side, the major problems were related to lack of raw materials and fluctuating input prices, while on the output side, market for most of the rural industrial products was found to be quite limited because of poor transportation facilities, inadequate market information and competition from large industry products and imports. Carson (1985) identified three broad types of constraints on small firms marketing viz., limited resources, lack of specialist expertise, and limited impact on market place. The marketing problem of small firms in China was largely associated with sales or production-oriented efforts towards establishing close and good relationships with the customers and government officials (Siu, 2001).

1.3.3 Profitability and Sustainability

While investigating the profitability of handloom weaving business in Dakha and Narayanganj district of Bangladesh considering three selected items viz., Benarashi, Jamdani, and Lungi, Jahan and Kumkum (2016) found that Jamdani weaving was the most profitable business and Benarashi weaving was the least among three handloom products under consideration. Another study by Islam et al., (2013) in

Kumarkhali Upazila of Kushtia district of Bangladesh found that handloom weaving business in the study area was profitable where per-loom profit of small and large scale units was found to be higher than that of medium-scale units. Rahman et al., (2018) remarked that per-loom profit and average net profit of handloom weaving sector in Peshawar Valley were positive but very low. In an attempt to compare the profit margin of products woven on handlooms and automatic looms in the textile industry in Buldan city of Turkey, Ozdemir and Utkun (2014) found that the profit margin of handloom fabrics was almost twice as high as those woven on automatic looms. Misra and Bhattacharjee (2017) observed that short run profit of independent weavers was 50 per cent higher than that of the weavers working under co-operative society while the profit margin of retailer was observed to be higher than that of the wholesaler in Naidia district of West Bengal. Islam and Hossain (2018) observed that sales revenue, labour cost and yarn cost were the primary determinants having significant and positive impact on profitability of handloom weaving units operating in Bangladesh. Streefkerk (1985) analyzed the handloom weaving in Bangladesh in its proper historical and present day context and stated that handloom sector remained remarkably persistent during the colonial period; though the industry was severely feeble during the nineteenth century, it survived, albeit as an industry of the poor for the poor. While examining the sustainability of handloom weaving business in Andhra Pradesh, Mamidipudi et al., (2012) stated that mobility, flexibly departing from and again returning to weaving depending on several circumstances, played an important role in keeping individual livelihoods sustainable in networked system. It was also mentioned that handloom industry was better understood as a sustainable system that was elastic and resilient to changes in the market place, absorbing new people and new knowledge when the demand expands and contracting when it falls.

1.3.4 Micro Entrepreneurship and Women Empowerment

In an attempt to investigate the factors affecting individuals' entry into rural non-farm micro-entrepreneurship in Assam, Hazarika and Goswami (2014) observed that age, education, risk bearing ability, availability of family labour, income from handloom activities, access to credit for handloom activities, businesses background of family, and knowing other handloom micro-entrepreneurs had significant and positive impact on micro-entrepreneurship entry in the handloom sector. Bortamuly et al., (2015) remarked development of female entrepreneurship in the handloom sector of Assam positively influenced by work experience while negatively influenced by distance to the nearest business center. Hazarika and Goswami (2018) found that the age of the respondents, access to telephone, risk taking behaviour, past history of handloom related family business, familiarity with other handloom micro-entrepreneurs, access to credit, and family expenditure were the significant determinants for the tribal women in becoming handloom micro-entrepreneur in Assam. While examining the determinants of financial risk attitude of the handloom micro-entrepreneurs in North East India Goswami et al., (2017a) remarked education, access to credit, access to training, and individual's income were primary determinants influencing the risk aversion of the micro-entrepreneurs. Shazli and Munir (2014) pointed out that economic necessity, unemployment, poverty, low income, low literacy and education, and large family size were major reasons which compelled females to engage in handloom sector in Mubarakpur Town of Uttar Pradesh. Hazarika and Goswami (2016) observed that participation of women in handloom activities improved their status within the family and society as a whole; while women's age, educational attainment, income from handloom activities, and government support were found to be primary determinants to have positive and significant influence on women's

empowerment in the handloom sector of Assam. Devi (2013) mentioned that women weavers of northeast India accepted the weaving activities as profession and performed multiple roles of being handloom cloths producers and trading of handloom products.

1.3.5 Production Technology and Efficiency

While examining the economic efficiency of handloom, power loom, and mill weaving of textile fabrics in Bangladesh, Chowdhury (1990) found that handlooms were economically more efficient in terms of internal rate of return in border prices relative to either power looms or large weaving mills. Jaforullah (1999) found that technical efficiency of the handloom industry of Bangladesh in producing cloth was less than 50 per cent, while Manonmani (2013) observed that average productive efficiency of Indian textile industry during 1991-92 to 2009-10 was very high. Study by Sarker and Alom (2016) found that technical, allocative and cost efficiencies of cotton production in Bangladesh were about 89, 78, and 70 per cent respectively which were treated as significant level of efficiencies. While examining the factors influencing the technical inefficiency of handloom weaving units of Kushtia district of Bangladesh, Islam and Hossain (2015) observed that capital-labour ratio, education, experience of owners, and size of weaving unit had negative effect on technical inefficiency, while age of owners was found to have positive effect on technical inefficiency. Operation of constant return to scale in production of sarees, gamosa, and lungis in Bangladesh handloom sector (Chowdury and Latif, 1989), while increasing returns to scale being operational in Indian textile sector (Manonmani, 2013).

1.3.6 Determinants of Employment, Wage and Productivity of Weavers

While evaluating the factors influencing the wage and productivity differential with respect to gender as well as type of work in the handloom weaving in Assam, Bortamuly and Goswami (2012) found that in case of contractual workers there was no gender discrimination in wages, whereas it was found in case of monthly rated workers; productivity of the workers influenced the wage structure of the contractual workers significantly while in case of monthly rated workers along with productivity gender of the worker influenced their wages significantly. Basumatary (2014) mentioned productivity of weavers declines with an increase in age and the wages of weavers depend on their productivity, while a positive relationship was found between experience and the monthly wages of weavers. While examining the mechanism and performance of clustering based on a primary survey of rural handloom clusters in Ethiopia, Zhang et al., (2011) mentioned clustered activities like handloom weaving could serve as gateways to entrepreneurship and industrial development; cluster with access to electricity could work longer hours increasing labour productivity, while rural non-electrified clusters had far smaller revenue per worker than did their electrified counterparts. In an attempt to examine why handloom weavers suffered from high rates of unemployment and whether the unemployment is technical, Nardinelli (1986) observed that coexistence of handloom and powerloom techniques of production with differing marginal cost schedules accompanied by ample oscillation in demand caused handloom weavers to suffer a high rate of cyclical unemployment rather than technological unemployment.

1.3.7 Impact of Globalization

While studying the impact of globalization on silk industry in northeast India, Goswami (2005) pointed out that globalization brought about some economic gain

from rapid expansion of exports, while adversely influencing the raw materials in domestic market. Sarkar and Mukhopadhyan (2019) mentioned replacement of handloom by power loom is one of the major changes with the advent of globalization on the rural handloom weavers' community in West Bengal. Reddy and Abdul (2013) observed that the economic reforms initiated by the government since 1991 had aggravated the crisis in the handloom weaving sector throwing the poor weavers in joblessness and distress in Andhra Pradesh.

1.3.8 Determinants of Recessionary Trend

While investigating the factors responsible for the crisis in the handloom sector in Andhra Pradesh, Srinivasulu (1994) found that uneven competition from power loom, sharp rise in prices of yarn and dyes seriously threatened the handloom sector, and handloom weavers put in danger for survival. Reddy (2006) observed that unfavorable government policy, ineffective implementation of government schemes, and stiff competition from power loom and mill sectors had been mostly responsible for the crisis in the handloom sector. Akter and Ghosh (2005) mentioned that lack of quality raw materials for weavers at right time and right place, insufficient and ineffective government supports, ineffective promotion of handloom products, lack of skill of weavers, inefficient weaver association, inadequate contemporary technology, lack of working capital, insufficient distribution channel of handloom products, intense competition from mill and power loom sector were responsible for the decay of handloom sector in Bangladesh. Raihan (2010) argued that host of factors viz. scarcity of yarn, lack of credit, lack of marketing facilities, poor design, lack of education and skill, and absence of organization of the weavers were responsible factors for the crisis in the handloom sector. Yousuf et al., (2013) mentioned that the situation of the weavers in Srinagar City of Kashmir was worrying; they were weak

due to illiteracy, financial constraints, health problems, insufficient remuneration, and poor government support. Raju and Rao (2014) stated that outdated technology, unorganized production structure, lack of working capital, low productivity, conventional product range, and weak marketing links were major problems faced by the handloom sector in Guntur district of Andhra Pradesh. Similar problems were mentioned by Sudalaimuth (2017) while analyzing the situation of handloom sector in India. Goswami and Jain (2014) pointed out that ignorant about the latest market trends, lack of innovative designs, lack of modern looms, unavailability of required count of yarn, poor quality yarn were the major barriers in the handloom sector in Jaipur district of Rajasthan. Lack of capital, scarcity of raw materials, poor technology, poor marketing system, lack of government support were basic problems in flourishing handloom industry in Bangladesh (Liton et al. 2016). Rahman and Noman (2019) remarked that low wage rate, no overtime payment, unhealthful working environment, health risk, and delay payment were the major problems facing by the handloom weavers in the selected areas of Bangladesh; the authors also added that most of the weaver households were living with poverty and food insecurity. In an attempt to examine the problems of producing quality silk in India, Kumaresan (2002) observed that low productivity of Indian sericulture sector, production of silk through charka, the traditional reeling machine and less sophisticated cottage basin reeling units, availability of quality cocoons, adoption of old traditional technology, poor rearing conditions, lack of training, conventional crossbreed rearing were the major constraints of producing quality silk in the country. While examining the workings of the muga silk reelers of Sualkuchi and the problems that were being faced by them, Saikia (2011) remarked that some of the reelers produced yarn independently on their own as a venture and some of them produce yarn on behalf of

either master weavers or traders. It was further noticed that the reelers with sound financial position bought yarn from different yarn producers and sold them in different weaving clusters.

1.3.9 General Studies

While investigating the features of the labour process in the informal handloom weaving sector in Nadia district of West Bengal, Khasnabis and Nag (2001) mentioned that labour process in handloom weaving largely depended on the nature of the institutional arrangement in the sector where usury capital had a strong presence due to the influence of the merchant lender. In an attempt to examine the influences of social and human capital of handloom entrepreneurs on their ability of opportunity recognition and resource mobilization in India's handloom sector Bhagavatula et al., (2010) observed that structural holes in an entrepreneur's network had a positive effect on opportunity recognition and negative impact on the ability to acquire resources while experience of the entrepreneur had a positive effect on resource mobilization but a detrimental effect on opportunity recognition. Estimating the possible connection between craft practice and sustainable development in Srilonka, Dissanayaka et al., (2017) demonstrated the successful application of fair-trade principles in developing sustainable trades and communities.

Hill (1983) studied the choice of technique in the Indonesian weaving sector and observed that investors in the modern manufacturing sector adopted excessively capital intensive techniques; the adoption of fully automatic looms by large mills was found to be economically rational at prevailing market prices. While investigating the determinants of occupational choice of workers in the handloom sector of Assam, Bortamuly et al., (2013) mentioned that annual income, education, access to modern

technology, family size, access to formal credit were directly linked with the occupational choice of workers. In an attempt to examine the factors influencing the adoption and extent of deployment of modern weaving technologies in the handloom sector of Assam Hazarika et al., (2015) stated that weaving experience, attitude towards risk, awareness about technology, financial inclusion, social network, family labour contribution, and market distance significantly influenced both adoption and extent of deployment of handloom weaving technologies.

While examining the distributional cost of gray fabrics of handloom and power loom industries in Bangladesh, Chowdhury (1989b) pointed out that overall costs of distribution in gray fabric trade produced by handloom and power loom sectors were estimated at 74 per cent and 119 per cent respectively. Mondal (1989a) examined whether the existing system of cotton pricing in the handloom sector of Bangladesh was reasonably effective in promoting allocation of yarn conducive to the healthy growth of handloom and found that due to excessive price spread across most predominant counts, the existing yarn pricing system failed to capture and sustain dynamism of the handloom sector. While investigating the effectiveness of yarn distribution in the handloom weaving sector of Bangladesh, Mondal (1989b) found that there was a persistent shortfall in the total availability of cotton yarn in the country in terms of quality, quantity, count and variety.

1.4 Research Gap

Several scholarly attempts have been undertaken so far in examining various challenges faced by handloom sector both within India and across countries. The technical efficiency in handloom weaving was the area of interest in the works of few scholars, while a group of researchers examined the employment and growth in the

wake of liberalization and globalization. There are few attempts in understanding the factors determining the profitability and sustainability of the sector, micro-entrepreneurship and women empowerment in the sector, wage-productivity of weavers. Though the problem of marketing of handloom sector has been the area of research interest in the works of few scholars in India as well as abroad, however, attempt towards studying the problems of marketing and its determinants across the heterogeneous weaving business units is conspicuous by its absence. Present study endeavors to bridge such research gap with field level data collected from Assam.

1.5 Objectives of the Study

The present study is based on the following objectives;

1. To sketch the overview of handloom weaving sector in the economy of Assam.

2. To examine the success of marketing of handloom items across the heterogeneous weaving business units in Nagaon district of Assam.

3. To understand the factors determining sales volume, sales revenue, and price spread of handloom items across the heterogeneous weaving business units in Nagaon District.

1.6 Research Questions

Present study seeks to address two questions:

1. Does the success of marketing of handloom weaving items confined to a section of weaving business unit?
2. What are the factors determining sales volume, sales revenue, and price spread across the heterogeneous weaving business units in Nagaon district of Assam?

1.7 Research Methodology

The present section amalgamated of data sources, sample design, and analytical technique in consequent sub-sections.

1.7.1 Data Sources

The present study is based on secondary as well as primary data. Secondary data has been collected from various official publications of central and state government as well as non-government organizations, journals, and published reports. State-wise data on the number of weavers engaged in handloom weaving activities, number of handlooms, number of handloom households, and production of handloom clothes have been collected from the published reports of the National Council of Applied Economic Research (NCAER), office of the development commissioner (Handloom), Ministry of Textile Government of India, EXIM Bank of India. Secondary data on district-wise number weavers engaged in weaving activities, number of handlooms, number of production centers, weaver extension service units, production of handloom fabrics have been collected from the Directorate of Economics and Statistics (Government of Assam), Directorate of Handloom and Textile (Government of Assam). The sole purpose of secondary data analysis would be to sketch the picture of inter-district employment and production scenario in the handloom sector of Assam. For evaluating the factors affecting the marketing of handloom products, the researcher in the present study has collected primary data by conducting field survey.

1.7.2 Sample Design

Primary data for the study has been collected using multistage random sampling method. Given the vastness of universe of the study all the handloom

weavers of Assam, time and resource constraints on the part of individual researcher, the study has concentrated in only one district in the central Brahmaputra valley of Assam. Thus, in the initial stage, Nagaon district was selected for its relative importance[1] in handloom cloth production in the state. In the second stage, four community development (CD) blocks with features of concentration of weaving activities on commercial basis were selected randomly from the selected district. In the third stage, three villages were randomly selected from each CD block. Finally, from each of the sampled villages 12 handloom weaver business units were selected randomly with a break up of 6 master weaver[2] units and 6 independent weaver[3] units. In this way, a sample of 144 handloom weaving business units from 12 villages has been selected at random. The primary data have been collected with a carefully designed interview schedule through personal interview method with the owner of the handloom weaving units and also with the marketing agents. Focus group discussions (FGDs) were carried out to obtain in-depth information and to cross-verify a few parameters. The map of the study area is shown in Figure 1.1.

[1] The Nagaon (undivided) district was largest contributor in the handloom cloth production of the state with a figure of 15.69 per cent during 2009-10; it was 4.03 per cent during 2017-18 (Directorate of Economics and Statistics, 2010, 2018).

[2] A master weaver is a generic term for people who get the yarn sized, supply beams to weavers and get the fabric woven (NCAER, 2010). Master weavers have common sheds for weaving where hired weavers undertake production activities and get wages, which are paid in accordance with work performed by them (NCAER, 2010).

[3] An independent weaver refers to a production system in which the weaver purchases raw materials from the market, makes cloth (warping, weft preparation, sizing, weaving, calendaring, etc.), and sells the woven finished products in the market or to the marketing agents independently, all on his own (National Council of Applied Economic Research, 2010).

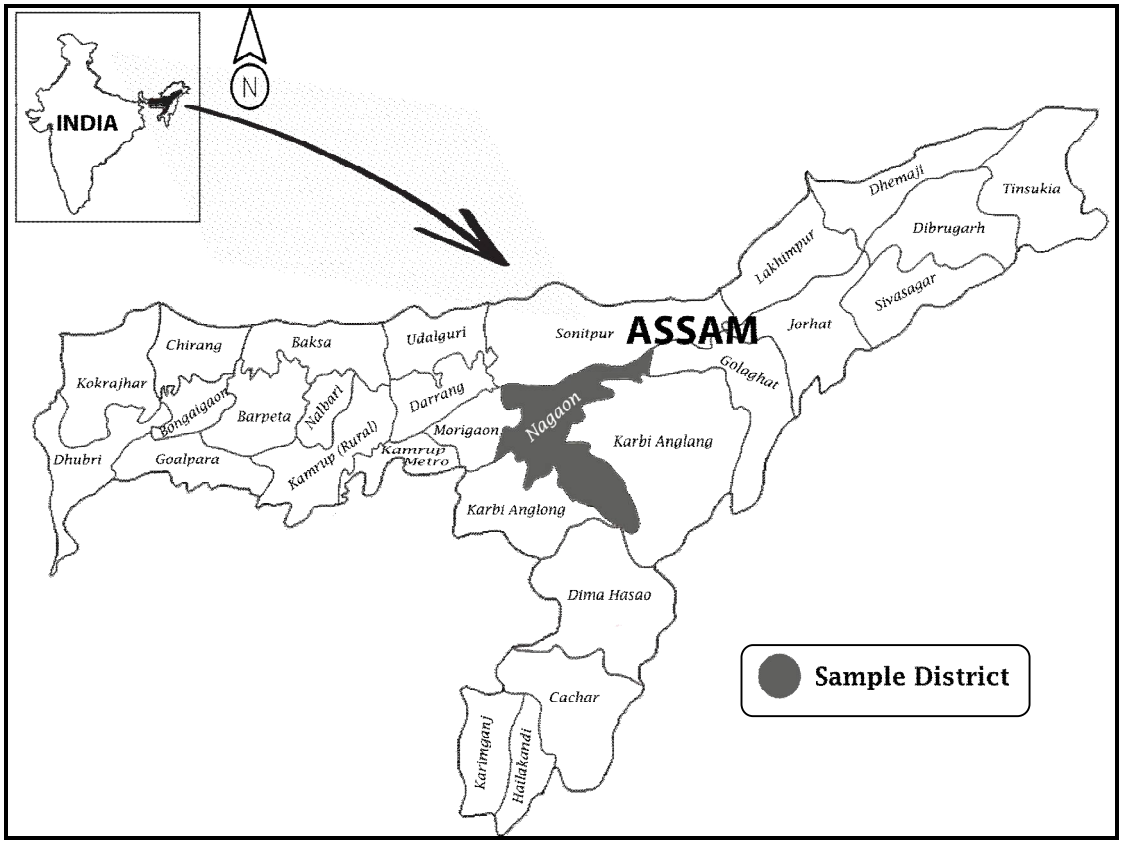
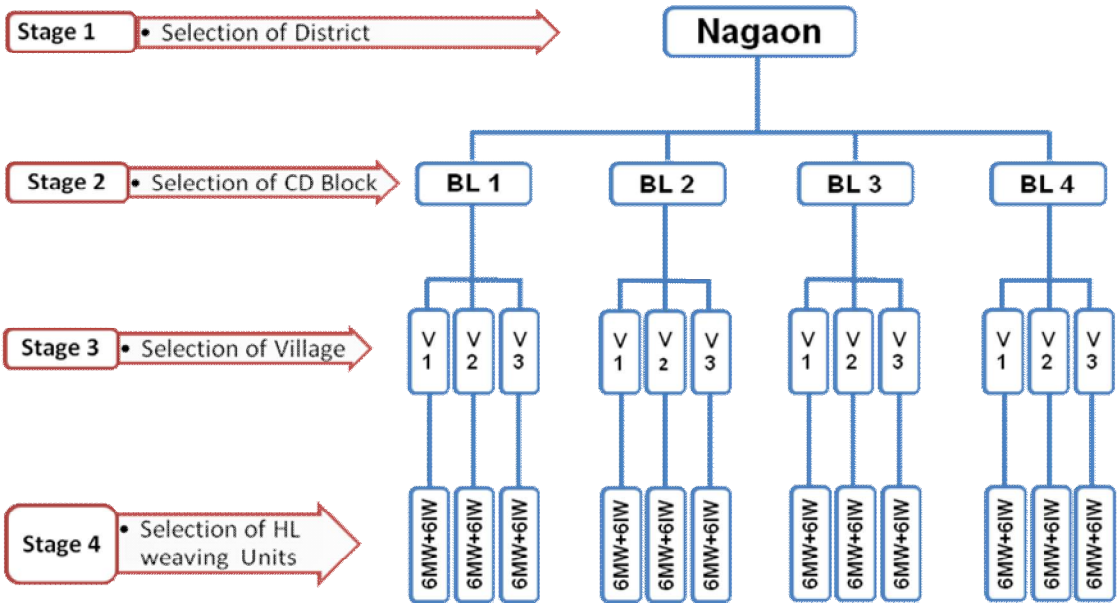


Figure 1.1: Study area showing the sample district in Assam

Besides socio-demographic and economic aspects of handloom weaving units, data on sales volume, sales revenue, price (retail and wholesale price) of Gamosa and Mekhela-Chador of different variety were collected from weaver business units[4] as well as handloom retail stores[5] of the study area. Given the product differentiation in each item, variety specific price data were gathered throughout the value chain. The researcher has used two types of interview schedule for the collection of such data. The first set of interview schedule has been used for obtaining the information from weaving business units; and another has been used for obtaining information from marketing agents (retail stores) in the value chain about market retail prices (MRP) of different quality of products. The primary data on various heads were collected for the financial year 2019-2020. The sample design of present study is shown in Flow Chart 1.1.

[4] Weaver business units are ultimate producers of handloom products in the study area.
[5] Handloom retail stores are ultimate sellers of handloom products in the study area.



Flow Chart 1.1: Sample Design

Note: BL stands for community development Block; **V** stands for Village; **MW** stands for Master Weavers' Unit; **IW** stands for Independent weavers' Unit;

1.7.3 Analytical Framework

The present study has used descriptive statistics for examining the district-wise production and employment pattern in the handloom sector of Assam as well as the socio-economic, demographic, and business characteristics of handloom weaving units in the study area. Independent sample '*t*' test was applied for examining whether the success of marketing of handloom items confined to a particular group of weaving business units in the study area. The study also used multiple linear regression analysis for understanding the factors determining the sales volume, sales revenue, and price spread of handloom items across the weaving business units in the study area. The functional specification of factors determining sales volume, sales revenue, and price spread of handloom items has been outlined as follows;

$SV_{ij}^{mc} = f\ (TWU_i, MoA_i, P_i, WH_i, SC_i, APR_i, FS_i, CS_i, NC_i, TC_i, AdC_i, CE_i, DRO_i, DWH_i)$

$SR_{ij}^{mc} = f\ (TWU_i, MoA_i, P_i, WH_i, SC_i, APR_i, FS_i, CS_i, NC_i, TC_i, AdC_i, CE_i, DNT_i)$

$PS_i^{mcA} = f(TWU_i, P_i, YoS_i, Exp_i, MS_i, SC_i, FMI_i, SM_i, NC_i, BkA_i, MPh_i, MPG_i, TC_i, AdC_i, DNT_i)$

$PS_i^{mcB} = f(TWU_i, P_i, YoS_i, SZ_i, MS_i, SC_i, FMI_i, FS_i, SM_i, NC_i, TC_i, AdC_i, DRO_i,)$

$SV_{ij}^{g} = f(TWU_i, P_i, Gn_i, Ag_i, MS_i, WH_i, OBP_i, SC_i, FMI_i, SM_i, TC_i, CE_i, DRO_i, DNT_i, DWH_i)$

$SR_{ij}^{g} = f(TWU_i, P_i, YoS_i, Exp_i, FW_i, MS_i, WH_i, OBP_i, SC_i, NC_i, TC_i, AdC_i, CE_i, DRO_i, DNT_i, DWH_i)$

$PS_i^{gB} = f(TWU_i, P_i, Gn_i, Ag_i, YoS_i, Exp_i, MS_i, SC_i, SM_i, DP_i, NC_i, BkA_i, TC_i, AdC_i, DRO_i,)$

$i = 1, 2, 3\ldots\ldots\ldots\ldots..144; \quad \forall\ j = 1, 2, 3$

When, j = 1, it stands for 'A' category

j = 2, it stands for 'B' category

j = 3, it stands for overall

Where, SV_i^{mc} stands for sales volume of Mekhela-Chador of i^{th} weaving unit; SR_i^{mc} stands for sales revenue from Mekhela-Chador by i^{th} weaving unit; PS_i^{mcA} stands for price spread of 'A' category Mekhela-Chador of i^{th} weaving unit; PS_i^{mcB} stands for price spread of 'B' category Mekhela-Chador of i^{th} weaving unit; SV_i^{g} stands for sales volume of Gamosa of i^{th} weaving unit; SR_i^{g} stands for sales revenue from Gamosa by i^{th} weaving unit; PS_i^{gB} stands for price spread of 'B' category Gamosa of i^{th} weaving unit.

Sales Volume (SV) of handloom weaving unit was considered as the number units of the product sold by weaving unit during FY 2019-20.

Sales Revenue (SR) of handloom weaving unit during FY 2019-20 was calculated as below:

$SR = (SV \times P)$ where, P = Price of the product sold by the weaving business unit

Price Spread (PS) was obtained as the difference between MRP of the product at retail stores and price of the product sold by weaving business unit.

$$PS = (MRP - P)$$

Where, MRP = Market retail price of the product at retail stores

P = Price of the product sold by weaving business unit

The price spread depends on the number of intermediaries involved in the value chains (Suryaprakash et al., 1979). An effective marketing system is a prerequisite for remunerative price to the weavers as an incentive to enhance the level of production (Ladaniya et al., 2003). It is assumed that the involvement of more intermediaries result in high price spread and it will influence the effectiveness of marketing of handloom products.

The empirical models fitted in the present study are listed in following set of equations:

$$\ln SV_{ij}^{mc} = \lambda_0 + \lambda_1 TWU_i + \lambda_2 MoA_i + \lambda_3 \ln P_i + \lambda_4 \ln WH_i + \lambda_5 \ln SC_i + \lambda_6 \ln APR_i + \lambda_7 \ln FS_i + \lambda_8 CS_i + \lambda_9 \ln NC_i + \lambda_{10} \ln TC_i + \lambda_{11} \ln AdC_i + \lambda_{12} \ln CE_i + \lambda_{13} \ln DRO_i + \lambda_{14} \ln DWH_i + \varepsilon_i \quad \text{(i)}$$

$$\ln SR_{ij}^{mc} = \lambda_0 + \lambda_1 TWU_i + \lambda_2 MoA_i + \lambda_3 \ln P_i + \lambda_4 \ln WH_i + \lambda_5 \ln APR_i + \lambda_6 \ln FS_i + \lambda_7 CS_i + \lambda_8 \ln NC_i + \lambda_9 \ln TC_i + \lambda_{10} \ln TC_i + \lambda_{11} \ln AdC_i + \lambda_{12} \ln CE_i + \lambda_{13} \ln DNT_i + \varepsilon_i \quad \text{(ii)}$$

$$\ln PS_i^{mcA} = \lambda_0 + \lambda_1 TWU_i, + \lambda_2 \ln P_i, + \lambda_3 \ln YoS_i, + \lambda_4 \ln Exp_i, + \lambda_5 \ln MS_i, + \lambda_6 \ln SC_i, + \lambda_7 \ln FMI_i, + \lambda_8 SM_i, + \lambda_9 \ln NC_i, + \lambda_{10} BkA_i, + \lambda_{11} MPh_i, + \lambda_{12} MPG_i, + \lambda_{13} \ln TC_i, + \lambda_{14} \ln AdC_i, + \lambda_{15} \ln DNT_i + \varepsilon_i \quad \text{(iii)}$$

$$\ln PS_i^{mcB} = \lambda_0 + \lambda_1 TWU_i + \lambda_2 \ln P_i + \lambda_3 \ln YoS_i + \lambda_4 \ln SZ_i + \lambda_5 \ln MS_i + \lambda_6 \ln SC_i + \lambda_7 \ln FMI_i + \lambda_8 \ln FS_i + \lambda_9 SM_i + \lambda_{10} \ln NC_i + \lambda_{11} \ln TC_i + \lambda_{12} \ln AdC_i + \lambda_{13} \ln DRO_i + \varepsilon_i \quad \text{(iv)}$$

$$\ln SV_{ij}^{g} = \beta_0 + \beta_1 TWU_i + \beta_2 \ln P_i + \beta_3 Gn_i + \beta_4 \ln Ag_i + \beta_5 \ln MS_i + \beta_6 \ln WH_i + \beta_7 OBP_i + \beta_8 \ln SC_i + \beta_9 \ln FMI_i + \beta_{10} SM_i + \beta_{11} \ln TC_i + \beta_{12} \ln CE_i + \beta_{13} \ln DRO_i + \beta_{14} \ln DNT_i + \beta_{15} \ln DWH_i + \mu_i \quad \text{(v)}$$

$$\ln SR_{ij}^{g} = \beta_0 + \beta_1 TWU_i + \beta_2 \ln P_i + \beta_3 \ln YoS_i + \beta_4 \ln Exp_i + \beta_5 \ln FW_i + \beta_6 \ln MS_i \beta_7 \ln WH_i + \beta_8 OBP_i + \beta_9 \ln SC_i + \beta_{10} \ln NC_i + \beta_{11} \ln TC_i + \beta_{12} \ln AdC_i + \beta_{13} \ln CE_i + \beta_{14} \ln DRO_i + \beta_{15} \ln DNT_i + \beta_{16} \ln DWH_i + \mu_i \quad \text{(vi)}$$

$$\ln PS_i^{gB} = \beta_0 + \beta_1 TWU_i + \beta_2 \ln P_i + \beta_3 Gn_i + \beta_4 \ln Ag_i + \beta_5 \ln YoS_i + \beta_6 \ln Exp_i + \beta_7 \ln MS_i + \beta_8 \ln SC_i + \beta_9 SM_i + \beta_{10} \ln DP_i + \beta_{11} \ln NC_i + \beta_{12} BkA_i + \beta_{13} \ln TC_i + \beta_{14} \ln AdC_i + \beta_{15} \ln DRO_i + \mu_i \quad \text{(vii)}$$

Where, all independent and dependent variables and their anticipated relationships are defined in Table 1.1. ε_i is error term ~ IIDN (0, σ^2), and μ_i is error term ~ IIDN (0, σ^2); λ_i and β_i are parameters (with i = 0 for intercept and $i \neq 0$ is slope parameter)

Table: 1.1: Description of Variables

Variables	Description	Anticipated relationship		
		SV_i	SR_i	PS_i
Dependent variables				
Sales Volume (SV_i)	Number units of the product sold by weaving unit during FY 2019-20. (measured in Piece/Set)			
Sales Revenue (SR_i)	Total sales revenue generated in FY 2019-20 (in INR)			
Price Spread (PS_i)	Difference between MRP of the product at retail stores and price of the product sold by weaving business unit (in INR)			
Independent Variables				
Types of weaver unit (TWU)	1 for Master weaver unit and 0 for Independent weaver unit	+/-	+/-	+/-
Price (P)	Price of the product sold by weaving business unit (in INR)	+/-	+/-	-
Mode of Acquisition (MoA)	1 for self-started business and 0 for inter-generational	+/-	+/-	+/-
Size of weaving unit (SZ)	Number working looms in the weaving unit	+	+	-
Gender (Gn)	Gender of the handloom weaving unit's owner; 1 for male and 0 for female	+/-	+/-	+/-
Age (Ag)	Age of the business unit's owner in year	+/-	+/-	+/-
Years of schooling (YoS)	Years of schooling of the weaving business owner	+	+	-
Business Experience (Exp)	Number of years spent in the weaving business	+	+	-
Number full-time workers (FW)	Number of full-time workers engaged in weaving activities in FY 2019-20	+	+	
Number of managing staff (MS)	Number of Staff managing the business in FY 2019-20	+	+	-
Working hours (WH)	Total working Hours by the weavers and allied workers in FY 2019-20	+	+	
Mode of sale (SM)	1 for direct sale and 0 for indirect sale	+/-	+/-	-
Storage capacity (SC)	Storage capacity of handloom products in piece	+	+	-
Frequency of selling (FS)	how frequently the finished product was sold in FY 2019-20, measured in days	+	+	
Production on order basis(OBP)	1 for yes and 0 for No	+/-	+/-	+/-
Advance payment requirement (APR)	Advance payment required on order basis production in % of value of finished product	-	-	
Credit sale (CS)	Practice of selling on credit; 1 for Yes and 0 for No	+	+	-
Delay payment (DP)	For how long (measured in days) did the producer (weaving unit) accept delay payment (Maximum)	+/-	+/-	+/-
Bookkeeping account (BkA)	Maintained bookkeeping account of business transaction; 1 for yes and 0 for No	+	+	-
Mobile phone (MPh)	Having access to mobile phone; 1 for yes and 0 for No	+	+	-
Membership of producer group (MPG)	Having membership of SHGs/ Society for weavers. 1 for yes and 0 for No	+	+	-
Transportation Cost (TC)	Cost incurred in INR for transporting handloom products to selling point in FY 2019-20	+	+	-
Advertisement cost (AdC)	Cost incurred in INR for advertising handloom products in FY 2019-20	+	+	-
Communication expense (CE)	Cost incurred in INR for communicating with business clients over mobile phone in FY 2019-20	+	+	-
Frequency of market information (FMI)	How frequently (in days) market information was obtained	+	+	-
Number of Competitors (NC)	Number commercial handloom households in the village	+/-	+/-	+/-
Distance to retail handloom outlet (DRO)	Distance of weaving unit from nearest retail handloom outlet in KM	+/-	+/-	+/-
Distance to nearest town (DNT)	Distance of weaving unit location from nearest town in KM	-	-	+
Distance to weekly hut (DWH)	Distance of weaving unit location from nearest weekly hut in KM	-	-	+

Present study applied the ordinary least squire (OLS) technique for estimation of the fitted models (i, ii, …vii). The suitability of OLS in the present study is subject to the assumption that our residuals have zero mean, constant variance, and are not correlated with themselves or other variables. The robustness check of the fitted regression model was done prior deciding the final results.

1.8 Organization of the Study

The study is composed of four chapters as follows:

Chapter I Introduction

This chapter covers the introduction, statement of the problem, literature review and research gap, objectives of the study, research questions, and research methodology.

Chapter II Overview of Handloom Weaving Sector in the Economy of Assam

With the help of secondary data, the chapter has sketched the overview of the economy of handloom weaving activities in Assam. It also made an inter-district comparison of handloom weaving activities of the state.

Chapter III Marketing of Handloom Items and its Determinants across the Heterogeneous Weaving Business Units in Nagaon District of Assam.

This chapter made an attempt to examine whether the success of marketing of handloom items is confined to a particular group of weavers in the Nagaon district of Assam. The chapter has also made an attempt to discuss the factors determining the sales volume, sales revenue, and price spread of handloom items across the heterogeneous weaving business units in the study area.

Chapter IV Conclusion and Policy Suggestions

This chapter summarizes the major findings and conclusions, possible policy suggestions and research limitations of the study.

Chapter II

Overview of Handloom Weaving Sector in the Economy of Assam

This chapter made an attempt to discuss the trend of production and employment patterns in the handloom sector across the districts of Assam. The chapter has broadly been divided into three sections. The first section covers the discussion on the district-wise production of handloom cloths in the state of Assam during 2008-09 to 2017-18. The second section outlines the district-wise engagement pattern in handloom weaving activity of Assam during 2000-01 till 2016-17. Conclusion of the chapter has been summarized in the final section.

2.1 Trend in the District-wise Production of Handloom Fabrics in Assam during 2008-09 to 2017-18

As reported by the department of economics and statistics, Government of Assam, handloom fabric production is carried out in the state under two institutional set up viz. weavers' extension service unit and handloom production centre. As of 2019, there are 98 weavers' extension service units and 20 handloom production centres in operation across the districts of Assam. The district-wise handloom fabric production during 2008-09 to 2017-18 in both weaver extension service units and handloom production centres separately as well as in aggregate has been discussed in the sub sections.

2.1.1 Trend in the District-wise Handloom Fabric Production in Weavers Extension Service Units of Assam during 2008-09 to 2017-18

The weavers' extension service units exist in almost all districts of the state. The district-wise percentage shares, averages, and compound annual growth rates (CAGRs) of handloom fabric production in weavers' extension service units of Assam

during the period 2008-09 to 2017-18 are presented in Table 2.1. It has been observed that the average handloom fabric production of weavers' extension service units was highest in Darrang district during the reference period followed by Barpeta and Sonitpur district in the second and third positions respectively. However, it can be noted from Table 2.1 that Barpeta district has the highest percentage share in the total cloth production of weavers' extension service units for four consecutive years during the reference period of 10 years with figures of 16.68 per cent in 2013-14, 16.66 per cent in 2014-15, 16.66 per cent in 2015-16 and 15.84 per cent in 2016-17. The percentage share of handloom fabric production in weavers' extension service units was highest in Darrang (41.45 per cent) in 2008-09, Nagaon (17.24 per cent) in 2009-10, Sonitpur (10.18 per cent) in 2010-11, Karimganj (24.33 per cent) in 2011-12 and Cachar (14.05 per cent) in 2012-13. During the year 2017-18, Kamrup (rural) district shared (9.68 per cent) the largest percentage in the total cloth production of weavers' extension service units in Assam. It is the Bongaigaon district which shared the lowest percentage (1.4 per cent) of the total cloth production of weavers' extension service units in Assam in the same year. During the reference period, the handloom fabric production in weavers' extension service units has registered the largest growth in Hailakandi district (14.8 per cent) followed by Cachar (11 per cent) and Kokrajhar (10.7 per cent).

Table 2.1

District-wise Percentage Shares, Mean and CAGRs of Handloom Fabric Production in Weavers' Extension Service Units of Assam (2008-09 to 2017-18)

(Production in metres)

	Percentage Shares												
Districts	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	Mean	CV	CAGR
Kokrajhar	0.65	0.21	1.56	1.68	1.30	1.19	1.22	1.22	2.76	5.30	1014	61.74	10.7
Dubiri	2.36	4.34	5.47	3.12	3.83	3.44	3.44	3.44	4.78	3.69	2523	29.81	-7.8
Goalpara	3.04	0.48	6.84	3.93	6.93	4.63	4.63	4.63	4.95	2.37	2792	48.17	-14.7
Barpeta	2.14	3.95	4.80	9.93	2.03	16.68	16.66	16.66	15.84	2.54	5678	65.02	-10.6
Morigaon	0.58	2.93	6.48	1.59	1.69	1.50	1.50	1.50	1.83	2.02	1405	75.66	0.7
Nagaon	9.35	17.24	3.98	2.24	1.13	1.19	1.19	1.19	1.61	3.75	3787	144.44	-20.7
Sonitpur	10.52	1.83	10.18	7.72	10.08	9.19	9.18	9.18	3.38	4.57	5590	74.20	-20.0
Lakhimpur	3.21	5.98	7.68	5.17	1.77	1.50	1.50	1.50	1.71	1.84	2453	84.18	-17.5
Dhemaji	1.23	9.93	4.13	2.56	4.65	6.82	6.82	6.82	3.79	3.23	3242	60.55	-2.3
Tinsukia	0.98	1.80	4.80	1.16	2.25	1.63	1.63	1.63	2.01	2.15	1294	49.92	-4.3
Dibrugarh	0.60	1.05	2.34	1.64	1.20	0.68	0.68	0.68	0.83	1.87	781	56.21	-0.5
Sivasagar	0.98	2.42	1.43	1.83	2.98	2.57	2.56	2.56	2.11	3.58	1468	22.96	1.3
Jorhat	2.67	4.92	2.85	1.72	1.13	0.86	0.86	0.86	1.19	3.48	1566	89.27	-9.6
Golaghat	1.67	7.02	0.67	1.52	0.94	0.53	0.53	0.53	1.45	1.99	1305	130.50	-10.5
Karbi Anglong	5.99	11.05	0.00	1.58	1.31	1.21	1.20	1.20	2.13	3.45	2484	139.94	-17.5
Dima Hasao	0.92	1.70	2.20	1.48	2.82	2.41	2.41	2.41	3.20	2.49	1374	6.26	-2.0
Cachar	0.87	1.60	3.32	2.18	14.05	9.92	9.91	9.91	7.94	7.22	3820	57.80	11.0
Karimganj	2.65	4.89	4.74	24.33	5.26	4.31	4.30	4.30	4.86	8.46	5005	125.71	-0.2
Hailakandi	0.57	1.06	1.37	2.46	4.34	2.24	2.24	2.24	3.20	6.46	1546	47.61	14.8
Bongaigaon	0.58	1.06	1.38	1.99	1.69	1.55	1.55	1.55	1.07	1.40	917	39.80	-3.1
Kamrup (Rural)	2.53	5.50	6.05	5.21	10.37	9.55	9.60	9.60	10.43	9.68	4813	14.86	1.8
Kamrup (Metro)	3.43	0.05	7.19	7.11	5.98	5.46	5.45	5.45	4.98	5.51	3376	53.14	-7.5
Nalbari	1.01	2.19	2.96	2.30	2.57	3.70	2.15	2.15	4.36	4.83	1744	21.67	4.4
Darrang	41.45	6.82	7.59	5.53	9.72	8.79	8.78	8.78	9.60	8.10	10625	171.35	-26.8
Assam	100	100	100	100	100	100	100	100	100	100	70517	45.53	-12.3

Source: Author's self estimates based on various publications of the Directorate of Economics & Statistics, Govt. of Assam;

Notes: CAGR stands for Compound Annual Growth Rate; CV stands for Coefficient of Variation;

Darrang including Udalguri, Nalbari including Baksa, Kokrajhar including Chirang, Nagaon including Hojai, Karbi Anglong including West Karbianglong, Dubri including South Salmara, Sonitpur including Biswanath, Jorhat including Majuli;

2.1.2 Trend in the District-wise Handloom Fabric Production in Handloom Production Centres of Assam during 2008-09 to 2017-18

Handloom production centres exist in the 11 districts of the state. The district-wise percentage shares, averages, and CAGRs of handloom fabric production in handloom production centres of Assam during the period 2008-09 to 2017-18 are reported in Table 2.2. The average fabric production of handloom production centre was highest in Nalbari district followed by Barpeta and Kamrup (rural) districts in second and third positions respectively during the period under consideration (see Table 2.2). Barpeta district has dominated the cloth production of handloom production centres sharing the largest percentage with a figure of 21.39 per cent yearly during 2013-14 till 2015-16 and 20.18 per cent in 2017-18. Moreover, the percentage share was highest in Karbi Anglong district during 2008-09 to 2009-10 with figures of 32.41 per cent and 31.85 per cent respectively. During the years 2011-12 and 2012-13 the percentage share in the total cloth production of handloom production centres was highest in Kamrup (rural) district with figures of 11.31 per cent and 22.02 per cent respectively. Nalbari district shared largest percentage in the total cloth production of handloom production centres of Assam with figures of 22.67 per cent in 2010-11, 22.78 per cent in 2016-17 and 20.18 per cent in 2017-18. It was observed that the growth rate of production in most of the districts was negative over the period. The districts such as Goalpara, Barpeta, Jorhat, Golaghat, Karbi Anglong, Kamrup (rural), and Darrang were exhibiting a negative growth in case of handloom fabric production of handloom production centres while the districts like Kokrajhar, Dhemaji, and Nagaon were showing positive growth during the period 2008-09 to 2017-18. Dhemaji district registered the highest CAGR (17.6 per cent) followed by 14.6 per cent in Nagaon and 10.7 per cent in Kokrajhar during the study period.

Table 2.2

District-wise Percentage Shares, Mean and CAGRs of Handloom Fabric Production in Handloom Production Centres of Assam (2008-09 to 2017-18)

(Production in metres)

	Percentage Shares												
District	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	Mean	CV	CAGR
Kokrajhar	2.66	2.61	3.37	10.67	10.51	13.66	13.66	13.66	14.32	11.73	783	57.60	10.7
Goalpara	14.27	14.69	13.54	7.43	2.34	3.45	3.45	3.45	5.03	6.11	646	76.63	-14.6
Barpeta	17.03	16.74	11.57	10.71	17.52	21.39	21.39	21.39	15.64	20.18	1388	19.74	-4.3
Nagaon	1.11	1.09	2.03	7.13	3.50	4.55	4.55	4.55	5.83	6.73	349	81.38	14.6
Dhemaji	0.59	5.73	5.24	9.09	4.52	0.62	0.62	0.62	2.16	4.45	334	126.05	17.6
Jorhat	3.03	2.98	3.74	7.97	4.52	2.76	2.76	2.76	3.91	0.00	336	99.40	-100
Golaghat	0.00	0.00	0.00	1.84	1.91	1.18	1.18	1.18	1.52	4.14	101	94.06	-5.7
Karbi Anglong	32.41	31.85	0.00	0.00	0.00	0.00	9.38	9.38	8.22	1.97	751	146.47	-31.2
Kamrup (Rural)	7.15	3.68	8.24	11.31	22.02	11.66	11.66	11.66	9.15	5.28	887	65.84	-9.2
Nalbari	11.32	20.63	22.67	9.41	15.72	19.59	19.59	19.59	22.78	20.18	1443	22.66	0.1
Darrang	10.44	0.00	0.00	2.49	9.05	11.76	11.76	11.76	11.45	13.97	607	58.15	-3.0
Assam	100	100	100	100	100	100	100	100	100	100	8410	33.90	-6.14

Source: Author's self estimates based on the various publications of the Directorate of Economics & Statistics, Govt. of Assam;
Notes: CAGR stands for Compound Annual Growth Rate; CV stands for Coefficient of Variation;
CAGR for Golaghat was estimated from 2011-12 till 2017-18;

2.1.3 Trend in the District-wise Overall Handloom Fabric Production in Assam during 2008-09 to 2017-18

The district-wise percentage shares, averages, and CAGRs of overall handloom cloth production[6] in Assam during the period 2008-09 to 2017-18 have been presented in Table 2.3. The average fabric production was highest in Darrang district (11233 metres) followed by Barpeta (7066 metres), Sonitpur (5660 metres) and Kamrup (rural) district (5564 metres) in descending order of ranks during the period under consideration (Refer Table 2.3). During 2008-09, Darrang district recorded the highest percentage share of overall handloom cloth production in Assam with a figure of 39.78 per cent followed by 9.95 per cent in Sonitpur and 8.91 per cent in Nagaon district. It was Hailakhandi district which shared the lowest percentage with a figure of 0.54 per cent only during the same year. Again, in the year 2009-10, Nagaon district shared the highest percentage of overall handloom cloth production in Assam with a figure of 15.69 per cent while Karbi Anglong and Dima Hasao ranked second and third among all the districts of the state, sharing 13.05 per cent and 9.53 per cent respectively. Moreover, the percentage share was highest in Sonitpur district during 2010-11 with a figure of 8.89 per cent, Karimganj in 2011-12 with a figure of 20.88 per cent and Kamrup (rural) in 2012-13 with a figure of 12.12 per cent. Barpeta district has dominated the handloom cloth production in Assam during 2013-14 till 2016-17 with percentage shares of 17.20 per cent (2013-14), 17.19 per cent (2014-15 and 2015-16), and 15.81 per cent (2016-17) while Kamrup (rural) district remained the second largest producer of handloom fabrics during the same period sharing 9.79 per cent in 2013-14, 9.83 per cent in 2014-15 and 2015-16, and 10.26 per cent in 2016-17.

[6] Overall handloom cloth production is the sum of the production of handloom cloths in weavers' extension service units and handloom production centres of Assam.

Table: 2.3

District-wise Percentage Shares, Mean and CAGRs of overall Handloom Cloth Production in Assam during 2008-09 to 2017-18

(Production in metres)

	Percentage Shares												
Districts	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	Mean	CV	CAGR
Kokrajhar	0.76	0.44	1.79	2.96	2.68	2.57	2.60	2.60	4.26	5.91	1797	46.24	10.7
Dubiri	2.23	3.93	4.78	2.68	3.25	3.06	3.06	3.06	4.16	3.34	2523	29.81	-7.8
Goalpara	3.64	1.84	7.69	4.43	6.24	4.50	4.50	4.50	4.96	2.72	3438	44.76	-14.6
Barpeta	2.94	5.18	5.66	10.04	4.36	17.20	17.19	17.19	15.81	4.21	7066	53.95	-8.2
Morigaon	0.55	2.64	5.66	1.36	1.44	1.33	1.33	1.33	1.59	1.83	1405	75.66	0.7
Nagaon	8.91	15.69	3.73	2.94	1.48	1.56	1.56	1.56	2.16	4.03	4136	129.42	-19.3
Sonitpur	9.95	1.65	8.89	7.27	8.57	8.17	8.16	8.16	2.94	4.14	5660	73.94	-20.0
Lakhimpur	3.04	5.40	6.71	4.43	1.50	1.33	1.33	1.33	1.49	1.67	2453	84.18	-17.5
Dhemaji	1.19	9.53	4.27	3.49	4.64	6.13	6.13	6.13	3.58	3.35	3577	56.16	-1.1
Tinsukia	0.93	1.63	4.19	0.99	1.91	1.45	1.45	1.45	1.75	1.94	1294	49.92	-4.3
Dibrugarh	0.57	0.95	2.05	1.41	1.02	0.61	0.60	0.60	0.72	1.69	781	56.21	-0.5
Sivasagar	0.93	2.18	1.25	1.57	2.54	2.28	2.28	2.28	1.84	3.24	1468	22.96	1.3
Jorhat	2.69	4.74	2.96	2.61	1.64	1.07	1.07	1.07	1.54	3.15	1902	75.92	-10.3
Golaghat	1.58	6.34	0.58	1.56	1.08	0.61	0.60	0.60	1.46	2.20	1407	118.83	-8.5
Karbi Anglong	7.41	13.05	0.00	1.36	1.12	1.07	2.11	2.11	2.92	3.31	3234	140.35	-19.4
Dima Hasao	0.87	1.53	5.66	3.74	3.65	3.18	2.14	2.14	2.79	2.75	2087	52.85	0.2
Cachar	0.82	1.45	2.90	1.87	11.94	8.82	8.81	8.81	6.91	6.54	3820	57.80	11.0
Karimganj	2.51	4.42	4.14	20.88	4.47	3.83	3.82	3.82	4.23	7.67	5005	125.71	-0.2
Hailakandi	0.54	0.96	1.20	2.12	3.68	1.99	1.99	1.99	2.79	5.85	1546	47.61	14.8
Bongaigaon	0.54	0.96	1.20	1.71	1.44	1.38	1.38	1.38	0.93	1.27	917	39.80	-3.1
Kamrup (Rural)	2.40	5.32	5.28	6.08	12.12	9.79	9.83	9.83	10.26	9.27	5564	23.35	2.4
Kamrup(Metro)	3.63	0.04	7.32	6.10	5.08	4.85	4.85	4.85	4.33	4.99	3512	55.04	-8.7
Nalbari	1.57	3.97	5.45	3.31	4.54	5.47	4.09	4.09	6.74	6.28	3186	15.44	2.9
Darrang	39.78	6.16	6.63	5.09	9.62	9.12	9.11	9.11	9.84	8.65	11233	162.98	-25.6
Assam	100	100	100	100	100	100	100	100	100	100	78927	42.32	-11.8

Source: Author's self estimates based on the various publications of the Directorate of Economics & Statistics, Govt. of Assam;

Notes: CAGR stands for Compound Annual Growth Rate; CV stands for Coefficient of Variation;

Darrang including Udalguri, Nalbari including Baksa, Kokrajhar including Chirang, Nagaon including Hojai, Karbi Anglong including West Karbianglong, Dubri including South Salmara, Sonitpur including Biswanath, Jorhat including Majuli;

Again, during the year 2017-18, Kamrup (rural) district has shared largest proportion with a figure of 9.27 per cent whereas percentage share of Borpeta district came down to 4.21 per cent only as observed in Table 2.3. It has been observed that the districts such as Kokrajhar, Morigaon, Sivasagar, Dima Hasao, Cachar, Hailakandi, Kamrup (rural), and Nalbari were exhibiting negative compound annual growth in case of handloom fabric production while all other districts of the state were showing positive compound annual growth during the period 2008-09 to 2017-18 [see Table 2.3]. Hailakandi district registered the highest CAGR with a figure of 14.80 per cent during the study period followed by 11.02 per cent in Cachar and 10.70 per cent in Kokrajhar.

Figure 2.1 represents the district-wise percentage shares of handloom cloth production in Assam during the year 2009-10. It can be noticed from the Figure [Refer Figure 2.1], that the districts like Nagaon, Karbi Anglong, Dhemaji, Golaghat, and Darrang districts shared a higher percentage of handloom cloth output in Assam during 2009-10 as compared to other districts of the state. The Nagaon district shared the largest percentage of handloom cloth output in 2009-10 while the percentage share was lowest in Kamrup (Metro) district. Thus, during the year 2009-10, handloom cloth production of Assam was largely concentrated in Nagaon, Karbi Anglong, Dhemaji, Golaghat, and Darrang district.

District-wise percentage shares of handloom cloth production in Assam during 2009-10

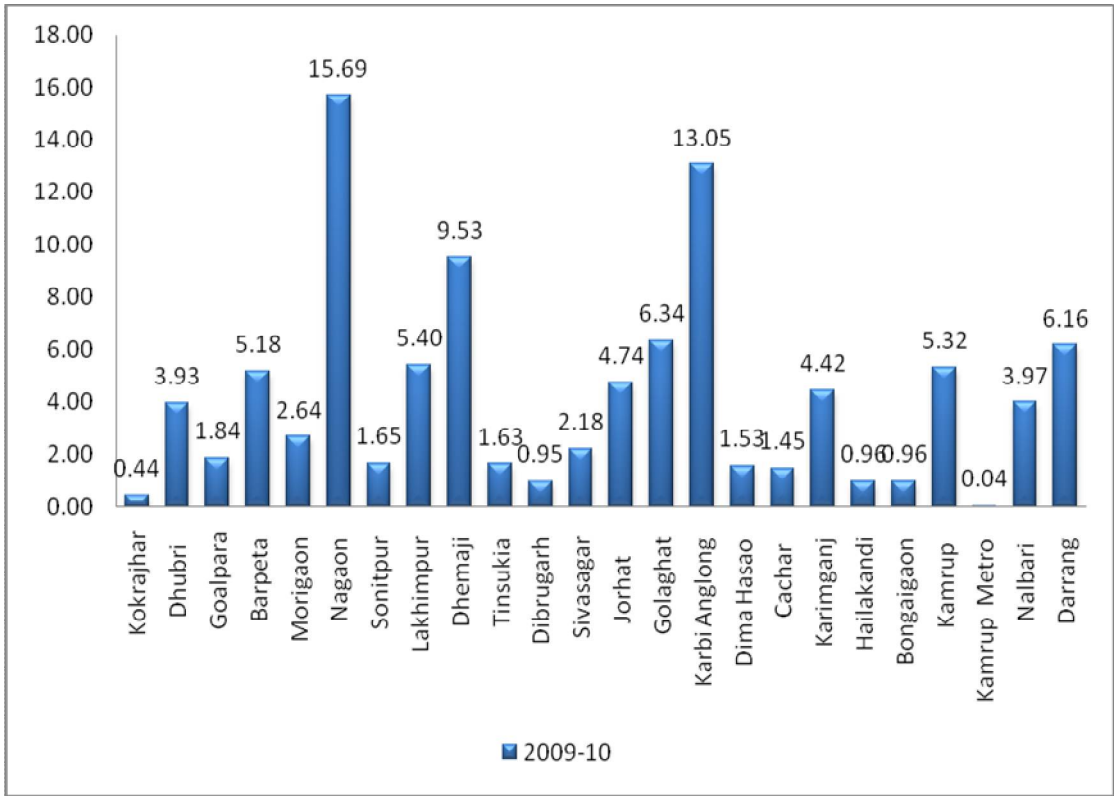


Figure 2.1

Figure 2.2 presents the district-wise percentage shares of handloom cloth production in Assam during the year 2017-18. As observed in the Figure [Refer Figure 2.2] Kamrup (rural), Darrang, Karimganj, Cachar, and Nalbari districts had higher percentage shares in handloom cloth production of Assam compared to other districts of the state during the year 2017-18. Amongst these districts, Kamrup (rural) has the highest percentage share of handloom cloth output in Assam. Again, Bongaigaon, Lakhimpur, Dibrugarh, and Morigaon districts had very low percentage shares in handloom cloth output in the state in 2017-18. Therefore, few districts like Kamrup (rural), Darrang, Karimganj, Cachar, and Nalbari were in better positions for handloom cloths production relative to other districts of the state.

District-wise percentage shares of handloom cloth production in Assam during 2017-18

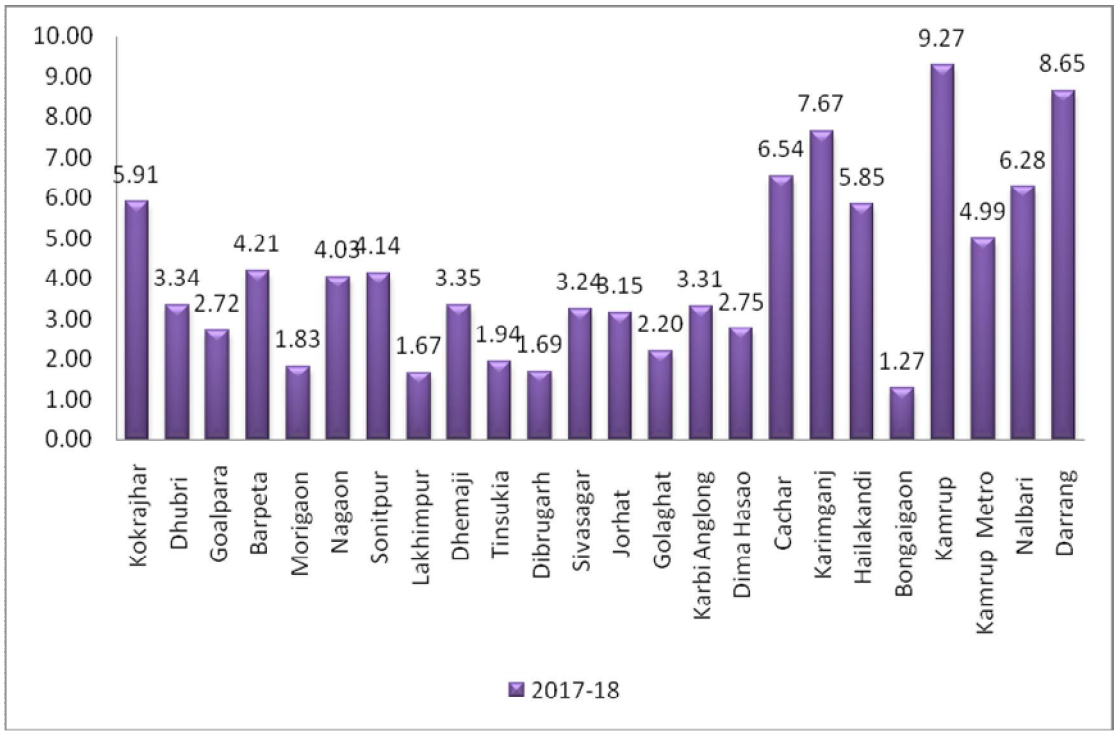


Figure 2.2

2.2 Trend in the District-wise Weavers Engaged in Handloom Sector of Assam during 2000-01 to 2016-17

The nature of weavers being engaged in handloom fabric production of Assam is part-time as well as full-time basis. Handloom sector of the state has engaged 19.48 lakhs weavers in handloom fabric production during 2017-18, out of which 78.54 per cent are part-time weavers and 21.46 per cent are of full time in nature (Directorate of Economics and Statistics, 2018). The district-wise weavers engaged in the handloom sector of Assam during 2000-01 to 2016-17 on a part-time and full-time basis separately as well as in aggregate have been discussed in the sub sections.

2.2.1 Trend in the District-wise Part-time Weavers Engaged in Handloom Sector of Assam during 2000-01 to 2016-17

The district-wise percentage shares, averages, and CAGRs of part-time weavers engaged in weaving activities in Assam during the period 2000-01 to 2016-17 are reported in Table 2.4. It has been noticed [Refer Table 2.4] that the average number of part-time weavers engaged in handloom weaving activities was highest in Kamrup (rural) district during the reference period followed by Nabari, Darrang, and Jorhat districts in descending order of ranks, and it was lowest in Dhubri district. The result reflects that Kamrup (rural) district takes an important position sharing largest percentage of total part-time weavers engaged in handloom weaving activities in Assam with figures of nearly13 per cent yearly during 2002-03 till 2009-10. It is Kokrajhar district which shared the lowest percentage of total part-time weavers engaged in handloom fabric production of Assam during the same period except only for 2009-10. However, during 2010-11 till 2016-17, Nalbari district occupies dominant position sharing nearly 9.7 per cent annually in the total number of part-time weavers engaged in handloom weaving activities in Assam. The growth rate of par time weavers' engagement was highest in Barpeta district with a figure of 52.9 per cent followed by 51.1 per cent in Morigaon, 50.2 per cent in Jorhat and 48.4 per cent in Diama Hasao during the reference period.

Table 2.4

District-wise Percentage Shares, Mean and CAGRs of Part-time Weavers Engaged in Handloom Sector of Assam during 2000-01 to 2016-17

	Percentage Shares																			
District	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	Mean	CV	CAGR
Kokrajhar	7.86	7.86	0.51	0.51	0.51	0.51	0.51	0.51	0.51	6.58	0.60	0.47	0.85	0.55	1.54	1.54	1.54	13086	148.20	25.3
Dhubri	8.96	8.96	1.65	1.65	1.65	1.66	1.66	1.66	1.66	1.56	1.93	3.25	1.67	1.79	1.25	1.25	1.25	17922	40.73	22.6
Goalpara	2.88	2.88	2.83	2.83	2.83	2.83	2.83	2.84	2.84	3.27	4.11	4.08	3.09	3.80	2.87	2.87	2.87	33199	39.83	38.7
Barpeta	1.50	1.50	4.76	4.76	4.76	4.76	4.77	4.77	4.77	4.46	5.54	6.97	5.58	5.12	7.15	7.15	7.15	59924	50.68	52.9
Morigaon	0.80	0.80	4.70	4.70	4.70	4.70	4.70	4.70	4.70	5.55	6.91	6.86	4.72	6.39	3.16	3.16	3.16	50679	40.54	51.1
Nagaon	3.38	3.38	5.70	5.70	5.70	5.70	5.70	5.70	5.70	5.34	4.15	4.61	5.16	3.84	4.80	4.80	4.80	55441	41.66	41.8
Sonitpur	6.10	6.10	4.09	4.09	4.09	4.10	4.10	4.10	4.10	1.86	4.45	6.72	4.28	3.43	4.86	4.86	4.86	45950	47.70	36.7
Lakhimpur	4.17	4.17	5.08	5.08	5.08	5.08	5.08	5.08	5.08	6.99	4.52	4.48	5.30	4.17	5.84	5.84	5.84	56937	45.93	41.6
Dhemaji	11.19	11.19	2.36	2.36	2.36	2.36	2.36	2.36	2.36	0.14	2.55	2.53	3.23	3.70	5.80	5.80	5.80	34746	80.96	33.1
Tinsukia	2.05	2.05	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.32	4.11	0.92	3.17	1.69	3.10	3.10	3.10	34079	47.52	42.3
Dibrugarh	3.99	3.99	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.42	3.86	5.99	3.99	6.68	3.67	3.67	3.67	42824	42.92	38.0
Sivasagar	5.46	5.46	4.96	4.96	4.96	4.96	4.96	4.96	4.96	5.37	6.85	7.24	5.54	6.33	5.76	5.76	5.76	59550	41.78	39.1
Jorhat	1.60	1.60	6.68	6.68	6.68	6.68	6.68	6.68	6.68	6.25	4.74	1.90	5.72	2.35	5.72	5.72	5.72	61426	49.96	50.2
Golaghat	2.25	2.25	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.42	4.45	4.42	4.90	4.42	5.66	5.66	5.66	52674	45.46	47.0
Karbi Anglong	3.68	3.68	4.03	4.03	4.03	4.03	4.02	4.02	4.03	3.77	4.48	4.45	3.59	4.14	2.22	2.22	2.22	38540	39.65	34.4
Dima Hasao	2.21	2.21	1.18	1.18	1.18	1.18	1.18	1.18	1.19	1.11	1.38	1.37	2.64	1.27	6.55	6.55	6.55	28355	122.69	48.4
Cachar	7.24	7.24	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.86	7.95	7.89	2.20	2.87	2.13	2.13	2.13	23598	101.20	28.4
Karimganj	6.38	6.38	3.23	3.23	3.23	3.23	3.22	3.22	3.22	3.01	3.25	0.44	2.35	3.00	0.67	0.67	0.67	25289	60.30	20.4
Hailakandi	3.83	3.83	2.18	2.18	2.18	2.14	2.14	2.14	2.14	2.00	2.19	0.23	1.50	1.10	0.39	0.39	0.39	16107	64.61	20.2
Bongaigaon	2.33	2.33	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.07	3.81	3.78	2.90	3.52	1.63	1.63	1.63	31163	41.12	35.6
Kamrup (Rural)	3.55	3.55	13.65	13.65	13.65	13.66	13.65	13.65	13.64	10.77	0.63	4.73	9.94	8.49	6.62	6.62	6.62	106795	56.01	44.2
Kamrup (Metro)	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	5.96	0.99	0.98	3.87	6.05	2.82	2.82	2.82	41548	55.47	-7.5
Nalbari	4.91	4.91	9.09	9.09	9.09	9.09	9.09	9.09	9.09	6.71	10.55	9.69	8.21	9.75	9.71	9.71	9.71	98708	42.13	44.7
Darrang	3.68	3.68	7.19	7.19	7.19	7.19	7.19	7.19	7.19	4.20	6.02	6.01	5.60	5.56	6.10	6.10	6.10	68666	42.14	43.1
Assam	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1075221	40.31	38.7

Source: Author's self estimates based on the various publications of the Directorate of Economics & Statistics, Govt. of Assam;
Note: CAGR stands for Compound Annual Growth Rate; CV stands for Coefficient of Variation;
CAGR for Kamrup (Metro) was estimated from 2009-10 till 2016-17;
Kokrajhar including Chirang, Nalbari including Baksa, Darrang including Udalguri, Dima Hasao including N.C Hills;

2.2.2 Trend in the District-wise Full-time Weavers Engaged in Handloom Sector of Assam during 2000-01 to 2016-17

Table 2.5 shows the district-wise percentage shares, averages, and CAGRs of total full-time weavers engaged in handloom fabric production of Assam during 2000-01 to 2016-17. It has been observed [Refer Table 2.5] that the average number of full-time weavers was highest in Darrang district followed by Kokrajhar and Bongaigaon in second and third positions respectively in the study period. During 2000-01 to 2001-02, Cachar district engaged the highest percentage share of the total full-time weavers engaged in handloom weaving activities in Assam with figures of 15 per cent yearly, however, it was highest in Bongaigaon district with figures of 17 per cent annually during 2002-03 till 2004-05. Notably, Sivasagar district was leading in engaging the full-time weavers during 2005-06 till 2008-09 sharing largest percentage with figures of 22.22 per cent in 2005-06, 21.29 per cent in 2006-07, 20.70 per cent in 2007-08 and 20.62 per cent in 2008-09. Though the Barpeta district shared second largest percentage of total full-time weavers engaged in handloom sector of Assam during 2005-06 till 2008-09 with 19.5 per cent yearly, it has been the largest sharing district during 2009-10 to 2010-11 with figures of 19 per cent in 2009-10 and 18.22 per cent in 2010-11 as observed in Table 2.5. Moreover, the percentage share of full-time weavers was highest in Dhubri district (13 per cent) in 2011-12, Tinsukia district (13.95 per cent) in 2012-13, and Kamrup (rural) district (32.8 per cent) in 2013-14. During 2014-15 till 2016-17, Darrang district shared the largest percentage of total full-time weavers engaged in handloom cloth production of Assam with figures of 16.89 per cent yearly. This district also registered the highest growth rate with a figure of 46.9 per cent per annum followed by Golaghat at 42.4 per cent, Kokrajhar at 36.8 per cent, and Tinsukia at 36.3 per cent during the 17 years period under consideration.

Table 2.5

District-wise Percentage Shares, Mean and CAGRs of Full-time Weavers Engaged in Handloom Sector of Assam during 2000-01 to 2016-17

	Percentage Shares																			
District	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	Mean	CV	CAGR
Kokrajhar	5.41	5.57	7.11	7.11	7.11	0.67	4.44	4.34	4.33	14.06	4.11	10.40	7.66	2.86	12.67	12.67	12.67	15428	121.36	36.8
Dhubri	4.18	4.30	0.11	0.11	0.11	0.09	0.10	0.12	0.14	0.14	0.13	13.01	2.01	0.09	3.12	3.12	3.12	3837	170.19	27.4
Goalpara	3.09	3.18	1.69	1.69	1.69	1.12	1.09	1.08	1.10	0.14	6.46	6.41	1.89	4.50	1.34	1.34	1.34	3617	97.12	23.1
Barpeta	3.09	3.18	3.13	3.13	3.13	20.70	19.84	19.30	19.21	19.07	18.22	11.04	8.06	12.70	1.96	1.96	1.96	15397	76.41	26.1
Morigaon	1.55	1.59	0.43	0.43	0.43	0.31	0.31	0.32	0.36	0.90	0.87	0.86	0.66	0.61	0.92	0.92	0.92	1254	104.94	25.6
Nagaon	3.09	3.18	6.63	6.63	6.63	4.34	4.18	4.11	4.12	4.09	3.26	1.35	2.50	2.27	1.34	1.34	1.34	4776	40.93	23.1
Sonitpur	4.64	4.77	0.77	0.77	0.77	0.53	0.54	0.56	0.57	0.60	0.00	3.38	0.58	0.26	0.32	0.32	0.32	1034	110.83	25.9
Lakhimpur	3.09	3.18	5.11	5.11	5.11	3.33	3.22	3.15	3.15	3.58	2.34	2.32	2.36	1.63	1.91	1.91	1.91	4501	48.66	0.26
Dhemaji	4.49	4.61	3.18	3.18	3.18	2.07	2.00	1.95	1.97	0.00	1.88	1.87	1.17	2.04	0.24	0.24	0.24	2104	59.60	8.04
Tinsukia	4.87	2.15	2.73	2.73	2.73	1.80	1.75	1.72	1.74	1.72	1.74	0.11	13.95	0.00	10.75	10.75	10.75	10856	160.17	36.3
Dibrugarh	2.78	2.86	9.53	9.53	9.53	6.19	5.95	5.79	5.78	5.74	4.83	0.79	2.52	0.06	0.07	0.07	0.07	4813	81.65	3.24
Sivasagar	4.02	4.14	3.39	3.39	3.39	22.22	21.29	20.70	20.62	2.04	2.28	2.17	5.66	1.59	2.40	2.40	2.40	10820	106.16	25.7
Jorhat	3.63	3.74	2.85	2.85	2.85	1.86	1.80	1.77	1.78	1.76	15.60	2.63	3.37	3.62	3.68	3.68	3.68	6442	106.83	29.9
Golaghat	2.32	2.39	1.62	1.62	1.62	1.07	1.05	1.04	1.06	1.05	0.95	0.94	4.82	1.30	10.32	10.32	10.32	9214	177.30	42.4
Karbi Anglong	3.37	3.47	2.88	2.88	2.88	1.92	1.88	1.87	1.90	1.88	1.75	1.74	2.05	1.22	2.64	2.64	2.64	3921	89.65	27.8
Dima Hasao	1.70	1.75	0.28	0.28	0.28	0.21	0.22	0.23	0.24	0.24	0.25	0.25	0.15	0.18	0.07	0.07	0.07	291	28.52	6.47
Cachar	14.77	15.19	16.15	16.15	16.15	10.46	10.01	9.73	9.69	9.61	8.60	8.54	5.39	6.11	0.81	0.81	0.81	10310	52.13	8.22
Karimgang	4.95	5.09	0.25	0.25	0.25	0.17	0.18	0.19	0.20	0.19	0.36	1.72	3.05	0.25	6.91	6.91	6.91	5828	190.79	32.5
Hailakandi	2.63	2.70	0.88	0.88	0.88	0.57	0.55	0.54	0.54	0.54	0.57	2.98	2.78	4.79	4.96	4.96	4.96	5306	147.55	35.0
Bongaigaon	9.28	9.55	17.0	17.0	17.0	11.02	10.56	10.27	10.23	10.15	9.70	9.63	7.85	6.76	5.96	5.96	5.96	14997	44.51	26.2
Kamrup (Rural)	2.97	3.05	2.05	2.05	2.05	1.37	1.35	3.69	3.73	10.92	0.91	3.28	5.00	32.80	2.99	2.99	2.99	9554	177.80	29.8
Kamrup (Metro)	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	0.08	2.23	2.22	1.93	5.34	0.56	0.56	0.56	3690	93.79	52.7
Nalbari	7.73	7.96	6.00	6.00	6.00	3.91	3.77	3.69	3.69	2.92	3.50	2.91	4.70	2.44	7.18	7.18	7.18	9226	109.81	29.1
Darrang	2.32	2.39	6.23	6.23	6.23	4.07	3.93	3.85	3.86	8.57	9.45	9.43	9.90	6.59	16.89	16.89	16.89	19192	130.97	46.9
Assam	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	174466	73.99	29.8

Source: Author's self estimates based on the various publications of the Directorate of Economics & Statistics, Govt. of Assam;
Note: CAGR stands for Compound Annual Growth Rate; CV stands for Coefficient of Variation;
CAGR for Kamrup (Metro) was estimated from 2009-10 till 2016-17;
Kokrajhar including Chirang, Nalbari including Baksa, Darrang including Udalguri, Dima Hasao including N.C Hills;

2.2.3 Trend in the District-wise Overall Weavers Engaged in Handloom Sector of Assam during 2000-01 to 2016-17

District-wise percentage shares, averages, and CAGRs of overall weavers[7] engaged in handloom cloth production of Assam during 2000-01 to 2016-17 are presented in Table 2.6. It can be seen [Refer Table 2.6] that the average number of weavers engaged in handloom weaving activities of Assam was highest in Kamrup (rural) district during the reference period followed by Nalbari, Darrang, and Barpeta district. The percentage share of Cachar district in overall weavers engaged in handloom cloth production of Assam was highest during 2000-01 to 2001-02 with figures of 10.5 per cent annually. However, Kamrup (rural) was the leading district with a share of 12.5 per cent yearly in overall weavers engaged in handloom sector of Assam during 2002-03 till 2009-10. It was Nalbari district which shared the largest percentage of overall weavers engaged in handloom weaving activity of Assam during 2010-11 to 2011-12 with figures of 9.62 per cent and 8.78 per cent respectively. Again, during 2012-13 to 2013-14 Kamrup (rural) district had been leading in terms of percentage shares of overall weavers with shares of 9.2 per cent in 2012-13 and 12.57 per cent in 2013-14. Moreover, Nalbari district has dominated the percentage share of overall weavers engaged in handloom cloth production of Assam during 2014-15 till 2016-17 with figures of 9.17 per cent annually. The growth of overall weavers' engagement was highest in Golaghat district with a figure of 45 per cent per annum followed by 44.6 per cent in Barpeta and Darrang district, and 41 per cent in Dima Hasao district.

[7] Overall weavers are sum of part-time and full-time weavers.

Table 2.6

District-wise Percentage Shares, Mean and CAGRs of overall Weavers Engaged in Handloom Sector of Assam during 2000-01 to 2016-17

	Percentage Shares																			
District	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	Mean	CV	CAGR
Kokrajhar	6.78	6.86	0.96	0.96	0.96	0.52	0.93	0.93	0.94	7.36	1.06	1.78	1.88	0.94	3.93	3.93	3.93	28514	113.37	31.2
Dhubri	6.84	6.93	1.55	1.55	1.55	1.50	1.49	1.49	1.50	1.41	1.70	4.54	1.72	1.50	1.65	1.65	1.65	21760	54.22	24.2
Goalpara	2.98	3.01	2.75	2.75	2.75	2.66	2.65	2.64	2.64	2.94	4.42	4.38	2.91	3.92	2.54	2.54	2.54	36817	42.06	34.4
Barpeta	2.20	2.23	4.65	4.65	4.65	6.41	6.38	6.37	6.37	5.99	7.21	7.49	5.95	6.39	6.03	6.03	6.03	75322	44.69	44.6
Morigaon	1.13	1.14	4.40	4.40	4.40	4.25	4.23	4.22	4.22	5.06	6.11	6.06	4.10	5.42	2.68	2.68	2.68	51934	40.11	43.3
Nagaon	3.25	3.29	5.76	5.76	5.76	5.56	5.54	5.53	5.53	5.20	4.03	4.17	4.76	3.57	4.05	4.05	4.05	60218	41.38	37.6
Sonitpur	5.45	5.52	3.86	3.86	3.86	3.73	3.72	3.71	3.71	1.73	3.86	6.27	3.72	2.90	3.89	3.89	3.89	46985	47.86	32.9
Lakhimpur	3.70	3.74	5.08	5.08	5.08	4.90	4.88	4.87	4.87	6.63	4.23	4.19	4.86	3.75	5.00	5.00	5.00	61439	46.00	38.3
Dhemaji	8.23	8.33	2.42	2.42	2.42	2.33	2.32	2.32	2.32	0.13	2.46	2.44	2.92	3.42	4.60	4.60	4.60	36851	76.27	30.9
Tinsukia	3.30	2.09	3.49	3.49	3.49	3.37	3.36	3.35	3.35	3.16	3.79	0.81	4.80	1.41	4.74	4.74	4.74	44935	63.26	38.9
Dibrugarh	3.46	3.50	4.06	4.06	4.06	3.92	3.90	3.89	3.89	3.66	3.99	5.29	3.77	5.57	2.89	2.89	2.89	47638	39.44	34.3
Sivasagar	4.82	4.88	4.85	4.85	4.85	6.74	6.71	6.69	6.69	5.02	6.25	6.56	5.56	5.53	5.04	5.04	5.04	70370	41.48	36.1
Jorhat	2.50	2.53	6.41	6.41	6.41	6.18	6.15	6.14	6.14	5.78	6.17	1.99	5.36	2.56	5.28	5.28	5.28	67868	48.46	42.2
Golaghat	2.28	2.31	4.51	4.51	4.51	4.35	4.33	4.32	4.32	4.07	3.99	3.96	4.89	3.89	6.66	6.66	6.66	61888	60.21	45.1
KarbiAnglong	3.55	3.59	3.95	3.95	3.95	3.81	3.79	3.79	3.79	3.57	4.12	4.09	3.36	3.65	2.31	2.31	2.31	42461	37.58	32.1
Dima Hasao	1.98	2.01	1.12	1.12	1.12	1.08	1.08	1.08	1.08	1.02	1.23	1.22	2.26	1.09	5.16	5.16	5.16	28647	121.49	44.1
Cachar	10.57	10.71	1.98	1.98	1.98	1.91	1.90	1.89	1.89	1.78	8.03	7.96	2.68	3.42	1.84	1.84	1.84	33908	73.78	21.7
Karimganj	5.75	5.82	3.02	3.02	3.02	2.91	2.90	2.89	2.89	2.72	2.87	0.61	2.46	2.54	2.01	2.01	2.01	31117	44.03	27.1
Hailakandi	3.30	3.34	2.09	2.09	2.09	1.98	1.97	1.97	1.97	1.85	1.98	0.59	1.69	1.71	1.37	1.37	1.37	21414	42.91	28.5
Bongaigaon	5.41	5.47	4.23	4.23	4.23	4.08	4.06	4.05	4.05	3.81	4.59	4.55	3.65	4.06	2.56	2.56	2.56	46161	37.26	29.6
Kamrup (R)	3.29	3.33	12.85	12.85	12.85	12.39	12.33	12.55	12.54	10.78	0.66	4.54	9.20	12.57	5.84	5.84	5.84	116350	53.31	40.7
Kamrup (M)	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	5.34	1.15	1.14	3.58	5.93	2.34	2.34	2.34	45238	52.74	-6.9
Nalbari	6.16	6.24	8.88	8.88	8.88	8.56	8.52	8.49	8.49	6.32	9.62	8.78	7.68	8.52	9.17	9.17	9.17	107934	45.48	39.1
Darrang	3.08	3.12	7.12	7.12	7.12	6.87	6.84	6.82	6.82	4.66	6.47	6.45	6.25	5.73	8.42	8.42	8.42	87859	52.27	44.6
Assam	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1249773	42.79	35.8

Source: Author's self estimates based on the various publications of the Directorate of Economics & Statistics, Govt. of Assam;
Note: CAGR stands for Compound Annual Growth Rate; CV stands for Coefficient of Variation; R stands for Rural; M stands for Metro;
CAGR for Kamrup (Metro) was estimated from 2009-10 till 2016-17;
Kokrajhar including Chirang, Nalbari including Baksa, Darrang including Udalguri, Dima Hasao including N.C Hills;

Figure 2.3 illustrates the district-wise percentage shares of overall weavers engaged in handloom weaving activity of Assam during the year 2002-03. As observed in the Figure [Refer Figure-2.3], Kamrup (rural), Darrang, Nalbari, and Jorhat districts contributed a higher percentage of overall weavers engaged in the handloom sector of Assam during 2002-03 in comparison to other districts of the state. The percentage share of weavers engaged in handloom weaving activity of Assam during 2002-03 was highest in Kamrup (rural) district while it was lowest in Kokrajhar district. Thus, during the year 2002-03, Kamrup (rural), Darrang, Nalbari, and Jorhat districts were leading in engaging handloom weavers of the state.

District-wise percentage shares of overall handloom weavers engaged in weaving activity of Assam during 2002-03

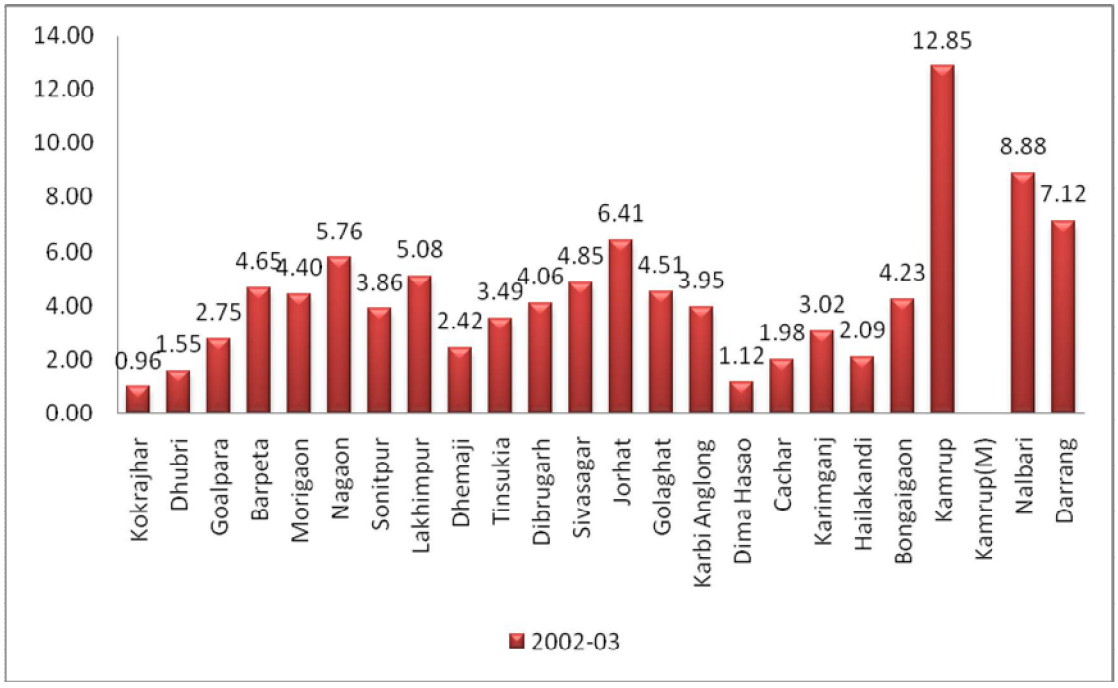


Figure 2.3

The percentage shares of overall weavers engaged across the districts of Assam in 2013-14 are presented in the Figure 2.4. It can be observed in the Figure [Refer Figure 2.4], that Kamrup (rural), Nalbari, Barpeta, Kamrup (Metro), and Darrang districts occupied better positions in engaging handloom weavers in

comparison to other districts of the state during the year 2013-14. Amongst these districts, Kamrup (rural) shared the highest percentage in overall weavers engaged in the handloom sector of Assam during 2013-14 while Kokrajhar district shared the lowest percentage of weavers. Thus, in the year 2013-14, Kamrup (rural), Nalbari, Barpeta, Kamrup (Metro), and Darrang districts were quite impressive in engaging the weavers in handloom weaving activity of Assam.

District-wise percentage shares of overall handloom weavers engaged in weaving activity of Assam during 2013-14

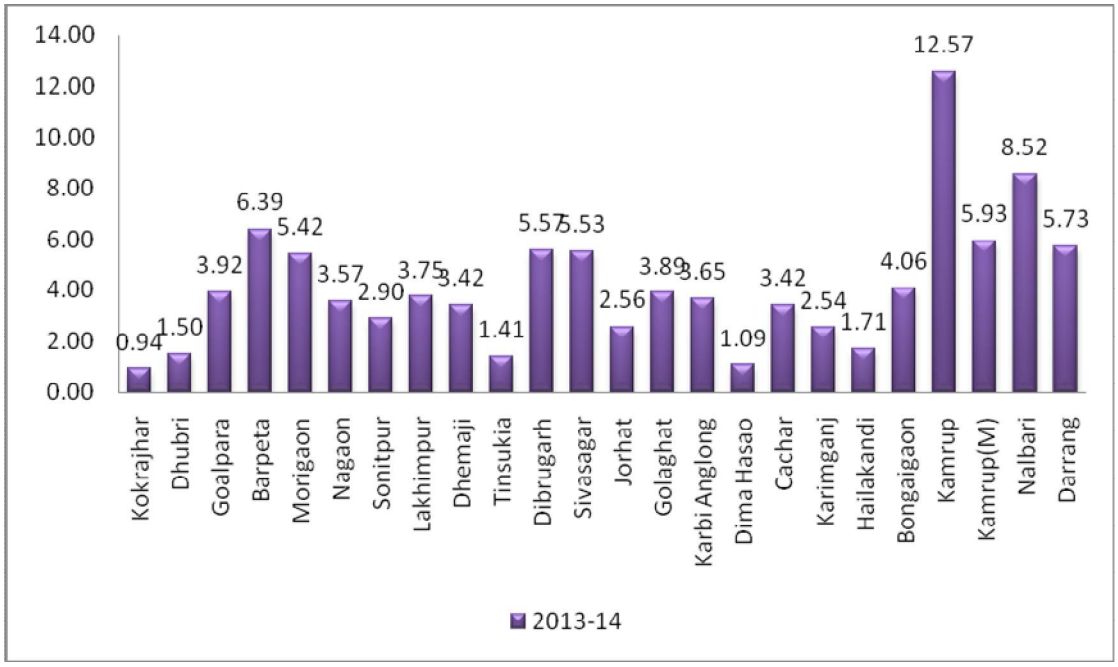


Figure 2.4

2.3 Conclusion

The present chapter made an attempt to analyze the trend of production and employment patterns in the handloom sector across the districts of Assam. It has been observed that handloom cloth production in Assam was dominated by Barpeta, Darrang, Sanitpur, Kamrup (rural), Karimganj, and Nagaon district during the period 2008-09 till 2017-18. The average cloth production was highest in Darrang district

while it was lowest in Dibrugarh district during the reference period. However, in terms of district-wise percentage shares of total handloom cloth production in Assam, Barpeta district shared the largest percentage during half of the period under consideration. During 2009-10, the percentage share was highest in Nagaon district and it was highest in Kamrup (rural) district in the years 2012-13 and 2017-18. The growth rate of handloom cloth production was found to be highest in Hailakhandi district while it was lowest in Morigaon district during the study period.

During the period 2000-01 to 2016-17, the districts such as Kamrup (rural), Nalbari, Darrang, Barpeta, Sivasagar, Jorhat, Golaghat, Lakhimpur, and Nagaon district had a better position in engaging the weavers in handloom cloth production of Assam, in comparison to other districts of the state. Amongst these districts, Kamrup (rural), Nalbari, and Darrang were seen to be leading in engaging weavers in the handloom weaving activities of the state. The average number of weavers being engaged was highest in Kamrup (rural) district during the reference period while it was lowest in Hailakandi district of the state. Kamrup (rural) district occupied leading position sharing the largest percentage of weavers engaged in handloom cloth production of Assam during major part of the period under consideration. In the matter of full-time engagement of weavers in the weaving sector of the state, however, Darrang Kokrajhar, Barpeta, and Bongaigaon district were quite impressive. The growth rate of overall engagement of weavers was found to be highest in Golaghat district with a figure of 45 per cent per annum during the study period while it is was lowest in Cachar district (21.7 per cent).

Chapter III

Marketing of Handloom Items and its Determinants across the Heterogeneous Weaving Business Units in Nagaon District of Assam

The present chapter made an attempt to examine the marketing of handloom items across the heterogeneous weaving business units with primary data collected from Nagaon district of Assam. The effectiveness in marketing among the weaving business units has been examined using three indicators viz. sales volume, sales revenue, and degree of price spread. The chapter has been divided into various sections and sub-sections. The initial section covers the discussion on summary statistics of the variables used in the study. An attempt has been made for examining whether the success of marketing in terms of sales volume, sales revenue, and degree of price spread is confined to a particular group of weavers in the study area. The chapter has also analyzed the factors determining the sales volume, sales revenue, and price spread across the heterogeneous weaving units in the study area.

Since two major handloom products primarily produced at commercial basis in the study area viz. Mekhela-Chador and Gamosa, hence, the present study has taken into consideration these products for examining the effectiveness in marketing and its determinants across the diverse group of weaving business units. With variety of use and needs, each of these products was available in three categories in the study area, which were differentiated on the basis of the quality of yarn, design, and amount of labour being used in its manufacturing. For the sake of simplicity the researcher has quoted these three categories of each product as ‘A’, ‘B’, and ‘C’ based on quality and composition as there was no specific name or reference identity of the products

being produced by rural informal business units. The details of quality and composition of different categories of such handloom items are listed in Table 3.1.

Table 3.1: Quality and Composition of Different Categories of Handloom Items

Product	Category	Description	MRP* (INR)
Mekhela-Chador	A	• made by using 80 and above counts of yarn • 16-24 hours of labour engagement for a single set of cloth • more hand embroidery work	2000
	B	• made by using 60 counts and above but less than 80 counts of yarn • 8-12 hours of labour engagement for a single set of cloth • moderate hand embroidery work	1100
	C	• made by using less than 60 counts of yarn • 3-5 hours of labour engagement for a single set of cloth • no hand embroidery work	450
Gamosa	A	• made by using 60 and above counts of yarn • 6-9 hours of labour engagement for a single piece of cloth • more hand embroidery work	700
	B	• made by using 40 and above but less than 60 counts of yarn • 3-4 hours of labour engagement for a single piece of cloth • moderate hand embroidery work	250
	C	• made by using less than 40 counts of yarn • 1-2 hours of labour engagement for a single piece of cloth • no hand embroidery work	75

Source: Information collected from field survey, 2020.
*The MRP has been arrived after obtaining the average market retail price of a particular product from various retail stores in the study area.

For analysis of primary data, the present study has taken into consideration the 'A' and 'B' category of Mekhela-Chador, and only the 'B' category of Gamosa because other categories of each product were seen to be produced by an insignificant number of respondents in the sample. Moreover, the present study has considered an overall category of each product viz. Gamosa and Mekhela-Chador by taking the aggregate of different categories (A, B & C) of each product at the individual weaving unit level.

The chapter consists of four broad sections. The socio-demographic and business characteristics of weaving units have been discussed in Section 3.1. Section 3.2 outlines the effectiveness of marketing of handloom items across the

heterogeneous weaving business units in the study area. Section 3.3 discusses the factors determining the sales volume, sales revenue, and price spread of handloom items across the sample weaving business units in the study area. Conclusion has been summarized in the final section of this chapter.

3.1 Socio- Demographic and Business Characteristics of Weaving Units

The summary statistics of the socio-demographic and business characteristics of weaving units are reported in Table 3.2. The weaving business owners of the study area are middle-aged adults with an average age of 43 years. The mean year of schooling of the handloom entrepreneur is 7.75 years with an average weaving business experience found to be nearly two decades. The average annual income of handloom entrepreneurs from weaving business in the study area was INR 50,493.06 during FY 2019-20. On an average, four working looms were being used by the weaving business units by engaging 2.51 full-time workers and 2.26 part-time workers in weaving activities in the study area. The average number of staff managing the weaving business was found to be 1.35. During the financial year 2019-20, the average labour hour engaged by the weaving business units in the study area for producing handloom cloths was 8269 hours (see Table 3.2).

Table: 3.2: Summary Statistics

Head	Variables	Unit	Mean	S.D	Min	Max
Business Owner	Age	Year	43.52	7.08	20	60
	Education	Year	7.75	2.86	0	15
	Business Experience	Year	19.67	5.52	4	30
	Annual Income	INR	50493	30969	7200	150000
Weaving Units	Size of business unit	Number	4.05	2.63	1	10
	Number of full-time workers	Number	2.51	2.50	0	11
	Number of part-time workers	Number	2.26	1.89	0	9
	Management staff	Number	1.35	0.98	0	3
	Working Hours	Hour	8269	6383	1150	27146

Source: Estimates based on field survey, 2020;

Refer to Table 3.3 reporting the percentage shares of various qualitative factors of the weaving business. It has been observed that majority (72.22 per cent) of the master weavers in the study area are male, whereas 90.28 per cent of the independent weaving business are carried by female weavers. With reference to the mode of acquisition of weaving business in the study area, it can be noticed that 72.92 per cent of sample business units carrying the weaving activities inter-generationally, while only 27.08 per cent are self-started business. For eliminating the risk of product selling or for avoiding positive inventory of handloom products, handloom weavers in the study area perused the practice of production on the basis of placed order/demand in advance. Nearly 78 per cent of weavers produced handloom items based on the order placed by their business clients in advance. The stiff competition from power loom and machine-made cloths in terms of availability and cheaper price urged the handloom weavers in the study area not to produce larger amounts without assurance of sales. It has been observed that 66.67 per cent of the master weavers approached intermediaries such as middlemen or traders for selling their produce, while 98.61 per cent of independent weavers sold their produce directly to ultimate customers. Taking account of overall sampled weavers in the study area, it can be noticed that 65.97 per cent of weavers sold their woven products directly to customers, whereas 34.03 per cent took the help of intermediaries in selling their products. The self help groups (SHGs) and weavers' society in the study area have assisted in selling at least some portion of its members' handmade cloths in handloom exhibitions, expos, and fairs organized inside as well as outside district. About 58 per cent of sample weavers in the study area were the members of SHGs/Weavers' Society. The share of registered members with SHGs/Weavers society was 69.44 per cent among the group of master weavers and 47.22 per cent among the independent weavers. The practice of selling

on credit is commonly followed for attracting customers and sales promotion in rural informal businesses. Nearly 80 per cent of the sampled weavers in the study area used to sell their woven products on credit.

Table: 3.3: Qualitative Characteristics of the Weaving Business Units (in percentage)

Variables		Master Weaver Business unit (72)	Independent Weaver Business unit (72)	Overall Sampled Business Unit (144)
Gender	Male	72.22	9.72	40.97
	Female	27.78	90.28	59.03
Mode of Acquisition	Self-started	41.67	12.5	27.08
	Inter-generational	58.33	87.5	72.92
Production on order basis	Yes	100	56.94	78.47
	No	0	43.06	21.53
Mode of Selling	Direct sale	33.33	98.61	65.97
	Indirect sale	66.67	1.39	34.03
Membership in producer group	Yes	69.44	47.22	58.33
	No	30.56	52.78	41.67
Credit Sales	Yes	100	59.72	79.86
	No	0	40.28	20.14
Bookkeeping account	Yes	98.61	47.22	72.92
	No	1.39	52.78	27.08
Access to mobile phone	Yes	100	69.44	84.72
	No	0	30.56	15.28

Source: Estimates based on field survey, 2020

Bookkeeping is an important tool used by management for evaluating business performance. It has been observed that 72.92 per cent of sample weavers in the study area maintained bookkeeping account of their business. Such practice of maintenance of bookkeeping account was largely (98.61 per cent) followed by master weavers group as compared to independent weavers whose share was 47.22 per cent. Proper awareness and up-to-date information about the marketing environment help producers cum seller of a product in staying tuned in the market for the product. Such awareness and information have become easily accessible these days with the increasing spread of e-commerce, internet, and Smartphone. The result of the present study shows that 84.72 per cent of weavers in the study area used personal mobile phone for various functioning of business operations and information. Amongst the two groups of weavers, the use of mobile phone for business operation was cent per

cent among master weavers while it was 69.44 per cent among independent weavers group.

3.2 Effectiveness of Marketing of Handloom Items

The effectiveness of marketing of handloom items across the heterogeneous weaving business units has been discussed in the following sub-sections.

3.2.1 Summary of Effectiveness of Marketing of Handloom Items across Weaving Business Units

From the results of descriptive statistics in Table 3.4, it can be noticed that the average volume of sales of overall Mekhela-Chador was 392.88 sets[8] across the sample weaving units during the FY 2019-20. Again considering the category wise volume of sales across the sample business units in the study area, it has been observed that the average sales volume of 'B' category Mekhela-Chador was much higher (214.19 sets) than that of the 'A' category Mekhela-Chador (102.95 sets) during the reference period. The higher sales of 'B' category Mekhela-Chador in the study area may be because of its cheaper price relative to that of 'A' category Mekhela-Chador.

Taking account of revenue drawn from sales of product by weavers in the study area, it has been noticed that on an average the sampled weaving units generated INR 3,21,416 as sales revenue from overall Mekhela-Chador during FY 2019-20. At the disaggregate level, the average sales revenue generated from 'B' category Mekhela-Chador was higher (INR 1, 30,063) than that from 'A' category Mekhela-Chador (INR 1, 45,431) during the reference period. The higher sales revenue from "B' category Mekhela-Chador might be because of larger volume of sales of the product in the study area (see Table 3.4). As we know, marketing

[8] A set consists of one piece of Mekhela and one piece of Chador.

effectiveness of a product for ultimate producer (weaver's unit) also depends upon the level of price spread; lower the level of [9]price spread implies more effective marketing of ultimate producer (weaver's unit) in the sales market. Taking account of mean level of price spread, it has been observed that the price spread was higher in case of 'A' category Mekhela-Chador (INR 606.25 per set) relative to 'B' category Mekhela-Chador (INR 409.10 per set) in the study area. The plausible explanation of such result is that the presence of intermediaries in the value chain was larger in case of 'A' category of Mekhela-Chador relative to that of 'B' category. Thus, all the three indicators confirm that the success of marketing of Mekhela-Chador 'B' category was higher than that of category 'A' among the sampled weavers in the study area.

Table: 3.4: Summary Statistics of Marketing of Handloom Products

Variables	Unit	Mean	S.D	Min	Max
Mekhela-Chador (MC)					
SV of *overall* MC	Set	392.88	438.89	19	2000
SV of *'A'* category MC	Set	102.95	114.69	4	580
SV of *'B'* category MC	Set	214.19	213.84	8	1010
SR from *overall* MC	INR	321416	288277.4	32900	1242900
SR from *'A'* category MC	INR	145431	145126	8080	584600
SR from *'B'* category MC	INR	156090	130063	9760	571750
PS of *'A'* category MC	INR	606.25	244.79	0	1000
PS *'B'* category MC	INR	409.10	147.54	100	650
Gamosa					
SV of *overall* Gamosa	Piece	552.82	468.72	48	2000
SV of *'B'* category Gamosa	Piece	277.51	200.05	35	960
SR from *overall* Gamosa	INR	88918.75	66161.1	12240	316800
SR from *'B'* category Gamosa	INR	58866	48593	7000	316800
PS of *'B'* category Gamosa	INR	84.20	40.60	10	220
Overall Marketing Cost					
Transporting cost	INR	2107.5	1980.52	0	8600
Advertisement cost	INR	797.99	1080.33	0	4000
Communication Expense	INR	739.93	409.80	0	1500
Physical Capital					
Number of Loom (MW)	No.	6.28	1.83	3	10
Number of Loom (IW)	No.	1.82	0.68	1	3

Source: Estimate based on field survey, 2020

[9]Price spread is the difference between market retail price (MRP) of the product at retail stores and the selling price of the product in weaving business unit (ultimate producer's unit).

Again, with reference to the marketing of Gamosa by weavers in the study area, it has been found that the average sales volume of overall Gamosa across the sampled weaving business units was 552.82 pieces during the FY 2019-20 with the mean value of sales revenue from overall Gamosa earned by the sample business units was INR 88,918.75 (see Table 3.4). With reference to the sub category of Gamosa as in the present case it is only 'B' category, it has been found that the average sales volume was 277.51 pieces across the sampled handloom business units in the study area, with average sales revenue generated was INR 58,866.25 during FY 2019-20.

Taking account of marketing cost of handloom items across the weaving units, it can be seen that the average cost of transportation of the finished product to selling point was INR 2107.50 during FY 2019-20, with the mean value of advertisement expenditure was INR 797.99 and expense for communicating with business clients over mobile phone was INR 739.93 (see Table 3.4). Thus, substantial amount of money was spent on transportation with the amount of spending on advertisement was minimal while marketing the products by the sampled weaving units in the district under consideration.

3.2.2 Test of Significance of Mean Difference in Marketing across the Weaving Business Units

The present section made an attempt to examine the test of significance of mean difference of various marketing indicators between the two groups of weaving business units viz. master weaver units and independent weaver units. There is statistically significant difference in mean sales volume, sales revenue and price spread of overall as well as sub categories (A and B) of Mekhela-Chador between the two groups of weaving business units with the mean sales volume, sales revenue, and price spread was higher amongst the master weaver units relative to the independent

weaver units (see Table 3.5). Such result confirms that master weaver units outperformed the independent weaver units in terms of sales volume and revenue generation in the business of overall and sub categories (A and B) of Mekhela-Chador in the study area. However, between the two groups of weaver units, the marketing effectiveness in terms of price spread was better among the independent weaver units. Such result may be due to the fact that the presence of intermediaries in the marketing of Mekhela-Chador was larger among the master weaver units relative to the independent weaver units in the study area.

Table: 3.5: Test of Significance of Difference in Mean across the Weaving Business Units

Sales Volume (SV) of Mekhela-Chador (MC)					
Variables	**Master Weaver Units**	**Independent Weaver Units**	**Mean Difference**	***t* statistic**	**p value**
SV of *overall* MC	676.07 [54.93]	109.69 [10.57]	-566.37	-10.12	0.00
SV of '*A'* category MC	184.5 [13.19]	21.40 [2.57]	-163.09	-12.13	0.00
SV of '*B'* category MC	362.28 [25.08]	66.10 [5.67]	-296.18	-11.52	0.00
Sales Revenue (SR) from Mekhela-Chador (MC)					
SR from *overal*l MC	544136.7 [29710.32]	98695.56 [6684.75]	-445441.1	-14.63	0.00
SR from '*A'* category MC	254558.9 [15137.16]	36303.19 [4956.8]	-218255.7	-13.70	0.00
SR from '*B'* category MC	255641.5 [13429.67]	56537.78 [3699.10]	-199103.8	-14.29	0.00
Price Spread (PS) of Mekhela-Chador (MC)					
PS of '*A'* category MC	671.53 [32.34]	540.97 [22.59]	-130.55	-3.31	0.00
PS of '*B'* category MC	450.55 [18.36]	367.64 [14.95]	-82.92	-3.50	0.00
Sales Volume (SV) of Gamosa					
SV of *overall* Gamosa	897.75 [49.97]	207.89 [17.24]	-689.86	-13.05	0.00
SV of '*B'* category Gamosa	438.37 [18.95]	116.64 [5.60]	-321.74	-16.28	0.00
Sales Revenue (SR) from Gamosa					
SR from *overall* Gamosa	139427.5 [6818.44]	38410 [2023.27]	-101017.5	-14.20	0.00
SR from '*B'* category Gamosa	87535 [6288.92]	30197.5 [1830.61]	-57337.5	-8.75	0.00
Price Spread (PS) of Gamosa					
PS of '*B'* category Gamosa	100.49 [5.26]	67.92 [3.31]	-32.57	-5.24	0.00

Source: Estimate based on field survey, 2020; Figures in the [ ] standard error;

Taking the case of Gamosa, there is also statistically significant differences in mean values of sales volume, revenue, and price spread of overall as well as sub category (category B) of Gamosa between the two groups of weaving business units, with mean sales volume, sales revenue and price spread seen to be higher among master weaver units relative to independent weaver units (see Table 3.5).

3.3 Determinants of Sales Volume, Sales Revenue, and Price Spread

Present section consists of three sub sections; the section 3.3.1 covers the discussion on determinants of sales volume of Mekhela-Chador and Gamosa, while the section 3.3.2 analyses the factors determining the sales revenue from Mekhela-Chador and Gamosa. The final sub section 3.3.3 has outlined the factors determining the price spread of Mekhela-Chador and Gamosa across the sampled weaving business units of the study area.

3.3.1 Determinants of Sales Volume of Mekhela-Chador and Gamosa

The estimated results of factors influencing the sales volume of Mekhela-Chador and Gamosa across the sampled weaving business units in the study area are presented in Table 3.6. Taking account of the sales volume of 'A' category Mekhela-Chador, the estimated result shows that categorical variables like types of weaving unit dummy, mode of acquisition dummy, and non-categorical variables like working hours, storage capacity, and number of handloom competitors have positive and significant association with the sales volume of the product in the study area, while price of the product, frequency of selling, and distance to retail handloom outlet were seen to have significant inverse relationship with sales volume of the product. The positive significant coefficient of type of weaving units in SV_{mc}^{A} equation implies that the sales volume of 'A' category of Mekhela-Chador was higher by 0.33 per cent

among the master weaver units relative to the independent weaver units in the study area. Since the ownership and accessibility of physical capital (such as looms and warping drum) was relatively less among the independent weaver units in the study area, hence, thereby constrained their production capacity and sales (see Table 3.4). In addition, as the production of 'A' category Mekhela-Chador needs expensive yarn, skilled weaver, longer hours of manual labour, these all constrained the independent weaver units in production and sales of such product in the study area. With majority of independent weavers being women and thus find it difficult to give proper time for marketing of their product given their pre-occupied household responsibilities which might also be a reason for smaller amount of sales of 'A' category Mekhela-Chador by the independent weaver units in the study area. The larger sales among the master weaver units also might be driven by the fact that such weaver units were having better access to marketing via middlemen or traders which was not the case for independent weaver units. The estimated coefficient of mode of acquisition of weaving business being 0.19 implies that the sale of 'A' category Mekhela-Chador was higher by 0.19 percent among the self-started waving business units compared to that of intergenerational weaving business units. Such result may be because of the fact that the weavers taking up the business themselves took greater responsibility and attention in their business relative to those who undertake it through the intergenerational transfer of resources. In general, price is expected to be an important factor influencing the sales volume of a commodity. The negative significant coefficient of price in SV_{mc}^{A} equation implies that keeping other variables constant, a 1 per cent increase in the price charged by the weaving business unit has reduced the sales volume of 'A' category Mekhela-Chador by 1.13 per cent. Hence, there was an inverse relationship between the price and quantity sold of 'A' category Mekhela-

Chador in the study area. Such result may be because of the fact that an increase in price leading to a fall in demand thereby indirectly lowering the sale of the product. Since close substitutes of Mekhela-Chador seen to be available in the market at competitive price, thus any fractional increase in price of the product by handloom weaving units made their product less attractive to the customers thereby lowering their sale of handloom items may be a possible explanation of the inverse relationship between price and sales volume (as per FGDs).

The influence of working hours of weavers and allied workers on the sales volume of 'A' category Mekhela-Chador is found to be positively significant. Hence, an additional hour of engagement in handloom weaving activities has helped in raising the sales volume of the product. Such result is consistent with the findings of Sujan et al. (1994), Leong et al. (1995), and Cole (2003). Handloom weaving being highly labour intensive profession, thus engaging more labour hours in weaving and allied activities might have helped in producing and selling a higher quantity of Mekhela-Chador by the sampled weaving business units in the study area. Moreover, the storage capacity has a favourable influence on the sales volume of 'A' category Mekhela-Chador with a coefficient value of 0.57, which implies that, ceteris paribus, a 1 per cent increase in the capacity of storage for handloom product increases the sales volume of 'A' category Mekhela-Chador by 0.57 per cent in the study area. Thus, an enlargement of storage capacity has helped in realizing higher sales of 'A' category Mekhela-Chador among the weaving business units in the study area. Such result is in line with the finding of Arnold et al. (2009). Field survey experiences reveal that handloom entrepreneurs with larger storage capacity had bigger business partners (traders) to whom they sell their stored finished product at larger quantity at an interval of time (e.g. weekly or fortnightly or monthly). In contrast, frequency of

selling the finished product was found to have an inverse significant relationship with the sales volume of 'A' category Mekhela-Chador, which is contrary to our expectation. The estimated coefficient indicates that, shorter the intervals of time of selling, fewer the volume of sales of 'A' category Mekhela-Chador in the study area. From the field survey, it was observed that weaving business units (mostly independent weaver units) who have lesser production capacity with less number of working looms and family labour base business, sold their finished product at shorter interval i.e. daily or weekly or in an interval within seven days to the customers arriving at their doorstep or at local market at retail basis. Whereas weaving business units (mostly master weaver units) having larger production capacity with larger number of working looms and uses hired labourer, mostly sold their woven product at longer interval i.e. weekly, fortnightly or monthly at larger quantity to the intermediaries in value chain (i.e. trader, middleman) at wholesale basis, as the contracted traders collected products from weaving units only at a longer interval of time rather than daily basis. Thus, despite selling at shorter interval the sales volume of 'A' category Mekhela-Chador was lower because of direct selling at retail basis; on the other hand, in spite of selling at a longer interval, the sales volume of the product was higher because of indirect selling at wholesale basis. Since the estimated coefficient of the number of handloom competitors in the study area being positively significant hence an increase in the number of competitors in villages helped in raising the sales volume of 'A' category Mekhela-Chador amongst the weaving business units in the study area. Such finding corroborates the research outcome of Mahajan et al. (1993). It was noticed from the field survey that the business environment was better in the villages having a larger number of competitors undertaking handloom activities, because greater efforts in sales promotion by a larger

number of sellers complemented the sale of the product. Field experiences suggest that traders took greater interest in visiting those villages having larger number of competitors, thereby assist them in realizing the sale of handloom items in larger volume in the study area. However, the negative significant coefficient of distance to retail handloom outlet implies that further away the weaving unit from retail handloom outlet, lower the volume of sales of 'A' category Mekhela-Chador. From the field survey, it was noticed that the weaving units locating nearer to retail outlets of handloom products could sell 'A' category Mekhela-Chador to those outlets at their proximity in larger quantity, while the weaving units dispersed at a longer distance from the retail handloom outlet unable to realize the sale of larger quantity.

With reference to the factors determining the sales volume of 'B' category Mekhela-Chador in the study area, the results of Model 2 shows that the influences of working hours, storage capacity, and distance to retail handloom outlet are positively significant on the sales volume of the product in the study area, whereas price of the product, communication expense and distance to weekly hut have negative significant effect on the sales volume of the product (see Table 3.6). Communication expense with business clients is found to have an inverse relationship with the sales volume of 'B' category Mekhela-Chador. Hence, a 1 per cent increase in communication expense (measured as the cost incurred to communicate with business clients over mobile phone) reduced the sales volume of 'B' category Mekhela-Chador by 0.07 per cent across the sampled weaving units in the study area. Such results are contradictory to our expectations, as normally greater communication is expected to help in sales promotion of a product. Moreover, distance to weekly hat is found to have significant inverse association with the sales volume of 'B' category Mekhela-Chador implying that further away the weaving unit location from the weekly hut, lesser the volume of

sales of the product. Proximity of weaving units to the weekly hut normally gives an exposure of fetching a wide range of customers which in turn complements the sales promotion in larger volume, while the opposite was true for those weavers dispersed at a distant location. Surprisingly, the distance of weaving unit from retail handloom outlet has been found to have positive and significant association with sales volume of 'B' category Mekhela-Chador in the study area.

With reference to the factors influencing the sales volume of overall Mekhela-Chador, the estimated result shows that price of the product, working hours, storage capacity, frequency of selling, number of handloom competitors, and distance to weekly hut have statistically significant effects on the sales volume of overall Mekhela-Chador. Interestingly, the advance payment requirement is found to have positive and significant impact on the sales volume of overall Mekhela-Chador in the study area. Thus, with a 1 per cent increase in advance payment requirement when order is placed by business client or customer, the sales volume of overall Mekhela-Chador increases by 0.07 per cent. Such result may be due to the fact that receipt of advance payment from trader or customer helps the weaving business units to cover the part of risk in production and sets them free from uncertainty of future positive inventory. Similar observations were made by Kenton (2020).

Table: 3.6: Determinants of Sales Volume of Mekhela-Chador and Gamosa

	Mekhala-Chador			Gamosa	
	Model 1	Model 2	Model 3	Model 4	Model 5
Dependent Variables	$lnSV_{mc}^{A}$	$lnSV_{mc}^{B}$	$lnSV_{mc}^{O}$	$lnSV_{g}^{B}$	$lnSV_{g}^{O}$
Breusch-Pagan/	χ^2 (1) = 2.18	χ^2 (1) = 22.25	χ^2 (1) = 7.23	χ^2 (1) = 11.40	χ^2 (1) = 4.95
Cook-Weisberg Test	Prob> χ^2 = 0.14	Prob> χ^2 = 0.00	Prob> χ^2 = 0.01	Prob>χ^2 = 0.00	Prob>χ^2 = 0.03
TWU	0.33* [0.17]	0.10 (0.20)	0.07 (0.15)	0.22 (0.17)	0.27 (0.18)
MoA	0.19** [0.08]	0.06 (0.08)	0.05 (0.08)		
ln P	-1.13*** [0.18]	-1.19*** (0.16)	-1.21*** (0.10)	0.30*** (0.08)	-0.64*** (0.08)
Gn				-0.08 (0.07)	-0.03 (0.08)
ln Ag				0.03 (0.16)	0.31 (0.21)
ln MS				0.20* (0.10)	0.15 (0.12)
ln WH	0.30* [0.16]	0.39* (0.22)	0.38** (0.15)	0.61*** (0.12)	0.62*** (0.17)
OBP				-0.26** (0.12)	-0.21 (0.16)
ln SC	0.57*** [0.16]	0.46*** (0.15)	0.48*** (0.13)	0.16 (0.11)	0.07 (0.15)
ln FMI				0.05 (0.04)	-0.01 (0.04)
ln APR	0.02 [0.05]	0.07 (0.04)	0.07** (0.03)		
ln FS	-0.18*** [0.05]	-0.06 (0.05)	-0.10*** (0.04)		
SM				-0.11* (0.07)	-0.18** (0.09)
CS	0.01 [0.21]	0.09 (0.21)	0.07 (0.14)		
ln NC	0.31** [0.12]	0.08 (0.12)	0.23** (0.10)		
ln TC	0.02 [0.01]	-0.01 (0.01)	-0.00 (0.01)	-0.00 (0.01)	0.04*** (0.01)
ln AdC	-0.01 [0.01]	.01 (0.01)	0.00 (0.01)		
ln CE	0.02 [0.03]	-0.07* (0.04)	-0.03 (0.03)	0.03 (0.02)	0.06** (0.03)
ln DRO	-0.11* [0.06]	0.11** (0.06)	0.03 (0.05)	0.41*** (0.12)	0.28*** (0.10)
ln DNT				-0.40*** (0.13)	-0.32*** (0.09)
ln DWH	0.08 [0.07]	-0.24*** (0.07)	-0.13** (0.06)	-0.10* (0.05)	-0.10 (0.07)
Constant	3.63 [2.42]	4.71** (2.15)	5.30*** (1.47)	-2.02 (1.23)	2.16* (1.28)
R^2	0.93	0.90	0.95	0.89	0.87
Adjusted R^2	0.92	0.89	0.94	0.88	0.85
F	115.96*** {14, 129}	157.52*** {14, 129}	308.94*** {14, 129}	97***{15, 128}	110.95***{15, 128}
Mean VIF	5.74	5.92	5.66	4.04	4.08
N = 144					

Source: Estimate based on Field Survey, 2020;

Note: ***p < 0.01, **p < 0.05, *p < 0.10; Figures inside [ ] Standard Error;

Figures inside ( ) Robust Standard Error; Figures inside { } are degrees of freedom

With regard to the factors affecting the sales volume of 'B' category Gamosa, the estimated result reveals that price of the product, working hours, number of managing staff, and distance to retail handloom outlet have positive and significant relationship with the sales volume; while the categorical variables like production on order basis, mode of selling and non-categorical variables like distance to nearest town and distance to weekly hut seen to have negative significant relationship with sales volume in the study area (Table 3.6). The positive significant coefficient of price in SV_g^B equation implies that a 1 per cent increase in price has helped in raising the sales volume of 'B' category Gamosa by 0.30 per cent. Thus, larger quantity sold of the product across the sample weaving units was directly associated with the price level. Such finding is consistent with the law of supply. The effect of number of managing staff has been found to be positive and significant on the sales volume of 'B' category Gamosa in the study area. Hence, the efforts by managing staff have contributed towards the increment in sales volume of the product in the study area; such result is consistent with the findings of Menguc (1996) and Arnold et al., (2009). In line with previous result found in case of Mekhela-Chador, working hours has positive and significant effect on the sales volume of 'B' category Gamosa. However, the negative significant coefficient of production on order basis in SV_g^B equation implies that production on order basis has significantly lowered sales volume of 'B' category Gamosa relative to those produced without taking any advance order. If we consider a producer (weaving business units) producing on the basis of pre-order as risk averter and those who produce without taking any pre-order as risk lover, hence the risk taking behavior might have helped in increasing the sales volume of the product across the weaving business units in the study area. Moreover, the negative significant coefficient of mode of selling implies that the volume of sales was lower

amongst the weaving business units who have sold their finished product directly to ultimate customers relative to those who sold it via middlemen or traders. It means that involvement in direct selling to ultimate customers is associated with lesser sales of the product in the study area, supporting the finding of Park et al., (2018). Field experience suggests that the weaving activity is controlled by weaving business units whereas marketing activity is controlled by middlemen or traders in the study area. Thus, direct selling without approaching the middleman or traders has lowered their sales, while indirect selling via middlemen or traders has helped in a higher volume of sales in case of 'B' category Gamosa. The distance of weaving unit from the retail handloom outlet positively and significantly affects the sales volume of 'B' category Gamosa, whereas distance to nearest town negatively and significantly affects the sales volume. Hence, remoteness of weaving unit location from nearest town has reduced the sales volume by constraining the market accessibility of handloom weaver units locating remote areas. Similarly, the distance to weekly hut also has negative and significant effects on the sales volume of the product.

As regards overall Gamosa, the estimated result in SV_g^O equation shows that working hours, transportation cost, communication expense, and distance to retail handloom outlet have positive and significant relationship with the sales volume of the product, while price of the product, production on order basis, mode of selling, and distance to nearest town found to have negative significant association with sales volume (see Table 3.6). Surprisingly, the coefficient of price has been found to be negatively significant in case of sales volume of overall Gamosa, which implies that an increase in price led to a fall in sales volume of overall Gamosa. Such result might be because of the fact that an increase in price leading to a fall in demand which in turn lowered the sale of the product. Moreover, the transportation cost has turned out

to be positively significant implying that a 1 per cent increase in the cost of transportation helped in increasing the sales volume of overall Gamosa by 0.04 per cent. Hence, an increase in the cost of transportation in selling handloom products has helped in increasing the volume of sales. Such result may be because of the fact that transporting the handloom items to larger market, fair, expo, and exhibition at distant places has complemented the sales of handloom items in the study area.

Furthermore, the positive significant coefficient of communication expense indicates that with a 1 per cent increase in communication expense in terms of mobile phone recharge for communicating with business clients, the sales volume of overall Gamosa has increased by 0.06 per cent. This indicates that higher is the communication expense, the larger is the volume of sales in case of overall Gamosa. In contemporary times, mobile communication is increasingly important for better management and promotion of any business. Effective and frequent communication through mobile phone with business clients might have helped in obtaining market information, product promotion and thereby better sales realization. In relation to the coefficients of working hours, mode of selling, distance to retail handloom outlet, and distance to nearest town, present results are consistent with the results found in case of 'B' category Gamosa. The high R^2 values accompanied by significant F statistic values in each of the five separate models indicate that the estimated regression models give a good fit to the data.

3.3.2 Determinants of Sales Revenue from Mekhela-Chador and Gamosa

The present section made an attempt to examine the factors determining the sales revenue from Mekhela-Chador and Gamosa in the study area. With reference to 'A' category Mekhela-Chador, type of weaving units is found to have positive and

significant association with sales revenue across the sampled weaving business units in the study area (see Table 3.7). Such result indicates that, the sales revenue was higher by 0.39 per cent amongst the master weaver units relative to that of independent weaver units in the study area. Since the average sales volume is higher by 163. 09 sets among the master weaver units compared to independent weaver units in the selected district (see Table 3.5), hence higher sales volume helped them in realization of higher sales revenue. Mode of acquisition of weaving business is also found to be positively significant in case of sales revenue generation from 'A' category Mekhela-Chador with the estimated value of coefficient 0.17, which implies that the sales revenue was higher by 0.17 per cent among the weavers who started their business at their own compared to those who acquired the business through the inter-generational transfer of resources. Since the selling capacity was higher among the weavers who started their business at their own (see Table 3.6), which perhaps helped them in realization of larger sales revenue in the study area. Moreover, working hours, storage capacity, and number handloom competitors have favourably contributed towards the expansion of sales revenue in relation to 'A' category Mekhela-Chador, while frequent selling of finished product adversely affected the sales revenue from the product in the study area. Since increased working hours, storage capacity and number of handloom competitors in village has helped in increasing the sales volume of the product (see Table 3.6), hence, thereby raising the sales revenue from the product among the weaving business units in the study area.

With regard to the estimated coefficients of factors affecting the sales revenue from 'B' category Mekhela-Chador it has been observed that working hours, storage capacity and advance payment requirement have positive and significant association with sales revenue. Again, the price of the product, communication expense and

distance to nearest town turned out to be negatively significant in connection with sales revenue from ‘B’ category Mekhela-Chador. The negatively significant coefficient of distance to nearest town in SR_{mc}^{B} equation indicates that remoteness of weaving unit location from nearest town has lowered the sales revenue from ‘B’ category Mekhela-Chador in the study area. With reference to the factors affecting the sales revenue from overall Mekhela-Chador, the results of present study are consistent with ‘A’ and ‘B’ category of the product.

Taking the case of ‘B’ category Gamosa, it has been noticed that price of the product, working hours, production on order basis, storage capacity, distance to retail handloom outlet, distance to nearest town, and distance to weekly hut are strong predictors of sales revenue among the weaving business units in the study area (see Table 3.7). The sign and significance of the estimated coefficients of sales revenue in the present case are consistent with the sales volume of the same product in the study area. In addition, the number of full time workers has turned out to have negative and significant association with sales revenue, indicating that an additional number of full time workers reduced the sales revenue from ‘B’ category Gamosa in the study area. Evidences from field survey suggests that the part time workers being mostly used in manufacturing of ‘B’ category Gamosa while the full time labourers were hired for weaving of ‘A’ category Gamosa. Thus increased use of full time labourers helped in enhancing sales volume and revenue of ‘A’ category Gamosa thereby reducing the sales revenue of ‘B’ category Gamosa.

Table: 3.7: Determinants of Sales Revenue from Mekhela-Chador and Gamosa

Product	**Mekhela-Chador**			**Gamosa**	
	Model 6	Model 7	Model 8	Model 9	Model 10
Dependent Variable	$lnSR_{mc}^{A}$	$lnSR_{mc}^{B}$	$lnSR_{mc}^{O}$	$lnSR_{g}^{B}$	$lnSR_{g}^{O}$
Breusch-Pagan/	χ^2 (1) = 0.95	χ^2 (1) = 13.67	χ^2 (1) = 1.54	χ^2 (1) = 13.65	χ^2 (1) = 11.39
Cook-Weisberg Test	Prob>χ^2 = 0.33	Prob>χ^2 = 0.00	Prob>χ^2 = 0.21	Prob>χ^2 = 0.00	Prob>χ^2 = 0.00
TWU	0.39** [0.17]	0.21 (0.23)	0.14 [0.12]	0.16 (0.14)	0.16 (0.11)
MoA	0.17** [0.08]	-0.08 (0.10)	0.08 [0.06]		
ln P	0.01 [0.17]	-0.39** (0.17)	-0.22** [0.08]	1.33*** (0.11)	0.45*** (0.09)
ln YoS				0.01 (0.08)	0.20*** (0.06)
ln Exp				-0.10 (0.08)	0.13* (0.08)
ln FW				-0.20** (0.09)	-0.01 (0.09)
ln MS				0.09 (0.10)	0.10 (0.08)
ln WH	0.26* [0.16]	0.43** (0.21)	0.35*** [0.11]	0.68*** (0.20)	0.66*** (0.14)
OBP				-0.21* (0.11)	-0.10 (0.09)
ln SC	0.57*** [0.16]	0.46** (0.17)	0.52*** [0.11]	0.20* (0.11)	-0.02 (0.11)
ln APR	0.00 [0.05]	0.09** (0.04)	0.06* [0.03]		
ln FS	-0.17*** [0.05]	0.00 (0.08)	-0.12*** [0.03]		
CS	0.06 [0.20]	0.02 (0.21)	0.05 [0.15]		
ln NC	0.38*** [0.12]	0.02 (0.13)	0.24*** [0.09]	-0.08 (0.07)	0.09 (0.09)
ln TC	0.02 [0.01]	-0.01 (0.01)	0.00 [0.01]	-0.00 (0.01)	0.01 (0.01)
ln AdC	-0.01 [0.01]	0.01 (0.01)	0.00 (0.01)	-0.01 (0.01)	0.00 (0.01)
ln CE	0.02 [0.03]	-0.07* (0.03)	-0.02 [0.02]	-0.00 (0.02)	0.01 (0.02)
ln DRO				0.43*** (0.13)	0.24*** (0.07)
ln DNT	0.02 [0.05]	-0.10* (0.06)	-0.040 [0.04]	-0.42*** (0.13)	-0.29*** (0.07)
ln DWH				-0.11* (0.06)	-0.05 (0.05)
Constant	2.04 [2.37]	5.96*** (2.18)	5.62*** [1.41]	-4.80*** (1.59)	2.03* (1.12)
R^2	0.91	0.84	0.94	0.89	0.91
Adjusted R^2	0.90	0.82	0.93	0.87	0.90
F	96.56*** {13, 130}	82.10*** {13, 130}	134.11*** {13, 130}	64.67*** {16, 127}	102.71*** {16, 127}
Mean VIF	5.89	6.26	5.79	6.60	4.62
N= 144					

Source: Estimate based on Field Survey, 2020;

Note: ***p < 0.01, **p < 0.05, *p < 0.10; Figures inside [ ] Standard Error;

Figures inside ( ) Robust Standard Error; Figures inside { } are degrees of freedom

Taking account of factors determining the sales revenue from overall Gamosa it has been found that an increase in price of the product has increased the sales revenue across the sample weaving units in the study area. Hence, the law of supply is seen to be operational in the present case. The years of schooling is found to be positive significant determinant of sales revenue from overall Gamosa. Hence, an additional year of schooling improved the business skill of the weaving entrepreneur thereby helped them in realizing higher sales revenue. The business experience of handloom entrepreneur has positive and significant association with sales revenue, which implies that additional year of experience in weaving business has helped the sampled weavers in the study area in realizing higher sales revenue for overall Gamosa. The working hours and the distance of weaving unit from retail handloom outlet being positive significant predictor of sales volume thereby increased the sales revenue from overall Gamosa in the study area. Again, the remoteness of weaving unit location from nearest town has reduced the sales revenue by lowering the volume of sales across the sample weaving units. The high R^2 values accompanied by significant F statistic values in each of the five separate models indicate that the estimated regression models give a good fit to the data.

3.3.3 Determinants of Price Spread of Mekhela-Chador and Gamosa

With reference to the estimated coefficients of factors determining the price spread of 'A' category Mekhela-Chador in the study area, it has been found that price of the product, years of schooling of weaving entrepreneurs, business experience of weaving entrepreneurs, storage capacity, frequency of market information, mode of sale, number of handloom competitors in village, and distance to nearest town have turned out to be negatively significant (Table 3.8). The negative significant coefficient of price in PS_{mc}^{A} equation implies that, a 1 per cent increase in price reduced the price

spread of ‘A’ category Mekhela-Chador by 2.44 per cent. The coefficient of years of schooling being negatively significant, hence an additional years of schooling minimizes the price spread of ‘A’ category Mekhela-Chador across the weaving units in the study area. Such result might be because of the fact that additional years of schooling perhaps improved the skill and managerial capacity in undertaking their business more efficiently thereby enabled to sell the product at proper price. Bosire and Etyand (2003) reported years of schooling is directly associated with the intensity of knowledge and skills on the business practices. Again, the business experience of handloom entrepreneurs has significant negative relationship with price spread of ‘A’ category Mekhela-Chador implying an additional year of experience in handloom weaving business helped the entrepreneur in minimising the degree of price spread of finished product in value chain. The storage capacity in the weaving unit has also helped in reducing the price spread in respect of ‘A’ category Mekhela-Chador in the study area. As we know an entrepreneur with positive inventory of finished product can take advantage of situation in sale of a product by auctioning the product when the price escalate and hoarding the product in times of slumpness in price level of the product. As per FGDs, there is seasonality aspect for prices of Mekhela-Chador in Assam, with the price level increases with increased demand during festival time of Assam such as Bihu (state festival of Assam), Durga puja and others. Thus, the handloom entrepreneurs with the ability to store more finished product might have enjoyed greater opportunity of pick season of price improvement of the product and thereby could have minimized the price spread for their woven products. In addition, frequency of market information is found to have significant inverse association with price spread of ‘A’ category Mekhela-Chador. Thus, frequent market information about consumer preferences, demand, prevailing market price and competitors’

behavior has helped the weaving entrepreneurs in realization of better price of the product in the study area. The negative significant coefficient of mode of selling in PS_{mc}^{A} equation implies that, the degree of price spread was lesser among those weaving business units who sold their product directly to the ultimate customers compared to them who sold via intermediaries. Thus, direct selling has helped the weaving business units in avoiding the margin charged by the intermediaries in value chain and thereby reducing price spread of their finished products. The number of competitors in weaving business in the study location is found to have significant negative relationship with price spread of 'A' category Mekhela-Chador. FGDs experience reveal that the villages having large number of competitors undertook greater marketing activities like product promotion through social media websites, grading, transporting woven products to diverse markets, etc. and thereby managed to reduce the price spared in the study area. The negative significant coefficient of distance to nearest town in PS_{mc}^{A} equation implies that further away the weaving unit location from nearest town, lower was the degree of price spread of 'A' category Mekhela-Chador. It was observed from the field survey that the weaving units located at remote areas used to sell their product directly to customers at retail prices, whereas those units located nearer to town mostly sold their produce in major retail handloom stores of towns at wholesale prices. Thus, due to the presence of intermediaries (like the retail store), price spread in respect of 'A' category Mekhela-Chador was higher while selling the product in nearby town, and it was lower in remote areas due to direct sale to the ultimate customers. However, the effect of number of managing staff is found to be positive and significant predictor of price spread of 'A' category Mekhela-Chador, which is contrary to our expectation. Such result indicates that with

increase in the number managing staff in weaving business, the price spread of ‘A’ category Mekhela-Chador has also increased significantly in the study area.

Taking account of the factors determining the price spread of ‘B’ category Mekhela-Chador in the study area, it has been noticed that selling price, years of schooling, size of weaving business units, number of handloom competitors and distance to retail handloom outlet have negative and significant association with price spread (see Table 3.8). The negative significant coefficient of size of weaving business unit in terms of number of working loom implies that the degree of price spread was relatively lesser among the weaving units larger in size, which may be because of the fact that such business units put greater efforts towards better marketing of their products which helped them in gathering adequate market information and proper pricing, thereby reducing price spread. Moreover, the negative significant coefficient of distance to retail handloom outlet implies that further away the weaving unit from retail handloom store, lower was the price spread in case of ‘B’ category Mekhela-Chador in the study area. Remoteness of weaving unit location from retail handloom store might have helped in direct selling to ultimate customers thereby lowering the price spread of the product. However, numbers of managing staff, storage capacity and transportation cost incurred by weaver business units are found to have positive and significant relationship with the price spread of ‘B’ category Mekhela-chador in the study area. A plausible explanation for such result is that since the ‘B’ category Mekhela-chador was inferior relative to ‘A’ category in quality, thus higher transportation cost, grater storage, and involvement of more managing staffs could not help in fetching the weaving business unit better price for the product.

Table: 3.8: Determinants of Price Spread of Mekhela-Chador and Gamosa

	Mekhela-Chador		Gamosa
	Model 11	Model 12	Model 13
Dependent Variables	$lnPS_{mc}^{A}$	$lnPS_{mc}^{B}$	$lnPS_{g}^{B}$
Breusch-Pagan/ Cook-Weisberg Test	χ^2 (1) = 247.58 Prob> χ^2 = 0.00	χ^2 (1) = 8.78 Prob> χ^2 = 0.00	χ^2 (1) = 24.77 Prob>χ^2 = 0.00
TWU	-0.08 (0.15)	-0.10 (0.09)	-0.07 (0.14)
ln P	-2.44*** (0.41)	-1.03*** (0.06)	-1.67*** (0.18)
Gn			-0.18** (0.08)
ln Ag			0.60* (0.35)
ln YoS	-0.23*** (0.09)	-0.19*** (0.04)	-0.31*** (0.08)
ln Exp	-0.27* (0.14)		-0.63*** (0.21)
ln SZ		-0.34*** (0.11)	
ln MS	0.46*** (0.15)	0.33*** (0.07)	0.45*** (0.11)
ln SC	-0.44** (0.21)	0.03*** (0.01)	-0.31** (0.14)
ln FMI	-0.12* (0.07)	-0.01 (0.02)	
ln FS		-0.04 (0.04)	
SM	-0.25** (0.10)	-0.12 (0.08)	0.01 (0.10)
ln DP			-0.07 (0.05)
ln NC	-0.36** * (0.13)	-0.19*** (0.06)	-0.35*** (0.10)
BkA	-0.39 (0.34)		-0.32** (0.14)
MPh	-0.01 (0.12)		
MPG	0.26 (0.25)		
ln TC	0.00 (0.02)	0.02** (0.01)	0.01 (0.01)
ln AdC	0.18 (0.20)	-0.00 (0.01)	0.01 (0.01)
ln DRO		-0.08*** (0.02)	0.09 (0.04)
ln DNT	-0.18** (0.09)		
Constant	26.10*** (3.55)	14.09*** (0.59)	13.16 (1.48)***
R^2	0.52	0.79	0.63
Adjusted R^2	0.46	0.76	0.58
F	16.81*** {15, 128}	43.97*** {13, 130}	12.34*** {15, 128}
Mean VIF	3.32	4.19	3.67
N = 144			

Source: Estimate based on Field Survey, 2020;
Note: ***p < 0.01, **p < 0.05, *p < 0.10;
Figures inside ( ) Robust Standard Error; Figures inside { } are degrees of freedom

With reference to the factors affecting the price spread of 'B' category Gamosa in the study area, it has been noticed that the coefficient of price of the product, gender of the handloom entrepreneur, years of schooling, business experience, storage capacity, maintenance of bookkeeping account and number of handloom competitors have turned out to be statistically negatively significant (Table 3.8). Thus, higher the price charged by the weaving business units, additional years of schooling of weaving entrepreneurs, additional years of experience in weaving

business, higher the storage capacity, more handloom competitors in village are few non-categorical factors which have helped in reducing the price spread of 'B' category Gamosa in the study area. Moreover, gender of the handloom entrepreneurs and bookkeeping practices are categorical factors significantly contributed in reducing price spread of 'B' category Gamosa in the study area.

The negative significant coefficient of gender indicates that male weaving entrepreneurs managed to minimise the price spread of the product to larger extent compared to their female counterpart in the study area. Such result may be because of the fact that female entrepreneurs were less likely to adopt extensive marketing strategy to promote and sell their products at reasonable price for not being able to spare more time because of pre-occupied household responsibilities. The negative significant coefficient of bookkeeping account implies that the degree of price spread was lower among those who maintained bookkeeping account of business. Keeping proper records of business transaction, an entrepreneur can properly positioned to carry out proper business evaluation and thus fair pricing (Chelimo and Sopia, 2012). Thus, proper maintaining of book keeping might have helped the weaving units in better discovery of actual market price of 'B' category Gamosa and hence reducing price spread of the product in the study area. However, the age of the handloom entrepreneur and number of managing staff seen to have positive significant relationship with price spread of 'B' category Gamosa. The positive significant coefficient of age implies that price spread was lesser amongst younger weaving entrepreneurs relative to elderly entrepreneurs in the study area. Although older entrepreneurs are likely to be more experienced, they might be more conservative and reluctant to go for marketing practices, thereby perhaps suffered higher level of price spread of the products sold by them. The high R^2 values accompanied by significant F

statistic values in each of the three separate models indicate that the estimated regression models give a good fit to the data

3.4 Conclusion

The present chapter made an attempt to analyze the effectiveness in marketing among diverse groups of weaving business units in the study area. The chapter has also analyzed the factors affecting the sales volume, sales revenue and price spread across the weaving units in the study area. It has been found that the weaving business owners in the study area are middle-aged adult with an average age of 43 years. Master weaving business in the study area was dominated by male weavers, whereas the independent weaving business was dominated by female weavers. It was also observed that master weaver units outperformed the independent weaver units in respect of sales volume and sales revenue from handloom items in the study area. However, between the two groups of weaver units the success of marketing in terms of price spread was better among the independent weaver units.

With reference to the factors affecting the sales volume and sales revenue drawn from Mekhela-Chador, it has been found that categorical factors like types of weaving unit dummy, mode of acquisition dummy, and non categorical factors like working hours, storage capacity, and number of handloom competitors have positive and significant association with sales volume as well as sales revenue drawn from the product in the study area; while price of the product, frequency of selling, and distance of weaving unit location from major sales markets are found to have significant inverse relationship with sales volume and sales revenue.

With regard to the factors influencing the sales volume of Gamosa, it has been found that working hours, number of managing staff, transportation cost,

communication expense, and distance to retail handloom outlet have positive and significant relationship with the sales volume, while production on order basis dummy, mode of selling dummy, distance to nearest town, and distance to weekly hut seen to have negative significant association with sales volume. Again, price of the product, years of schooling of weaving entrepreneurs, business experience of the weaving entrepreneurs, working hours and storage capacity are seen to be crucial factors in enhancing the revenue from the sales of Gamosa, while remoteness of weaving unit location from weekly hut and nearest town has adversely affected the sales revenue from the product.

With reference to the factors determining the price spread of Mekhela-Chador in the study area, it has been observed that price of the product, years of schooling of the weaving entrepreneurs, business experience of weaving entrepreneurs, size of weaving business units, storage capacity, frequency of market information, number of handloom competitors, distance to nearest town, and distance to retail handloom outlet helped in reducing the degree of price spread in value chain of the finished product. Taking account of Gamosa, it has been noticed that price charged by the weaving business units, years of schooling of weaving entrepreneurs, years of business experience of weaving entrepreneurs, storage capacity, and number handloom competitors in the village have helped in reducing the price spread of the product in the study area. Also the gender (male) of the weaving entrepreneurs and bookkeeping practices helped in reducing price spread of the product in the study area.

Chapter IV

Conclusions and Policy Suggestions

The present study was undertaken with three objectives in mind. The first objective was to sketch the overview of handloom weaving sector in the economy of Assam, while the second objective was to examine the effectiveness of marketing of handloom items across the heterogeneous weaving business units in the study area. The study also made an attempt to understand the factors determining sales volume, sales revenue and price spread of handloom items across the weaving business units in the study area. The present chapter has summarised the principal findings and conclusions drawn from the study besides outlining the possible policy suggestions. The chapter has been fragmented into five broad sections. Section 4.1 covers the discussion on district-wise production and employment patterns in the handloom sector of Assam. The effectiveness marketing of handloom items across the weaving business units have been summarized in section 4.2. The section 4.3 made an attempt to understand the factors determining the sales volume, sales revenue and price spread of handloom items. The policy suggestions and limitations of the study are discussed in section 4.4 and 4.5 respectively.

4.1 District-wise Production and Employment Patterns in the Handloom Sector of Assam

During 2008-09 till 2017-18 the handloom cloth production in Assam was reasonably higher in Barpeta, Darrang, Sanitpur, Kamrup (rural), Karimganj and Nagaon district. During that period the average cloth production was highest in Darrang district while it was lowest in Dibrugarh district. However, in terms of district-wise percentage shares of total handloom cloth production in Assam, the share

of Barpeta district was largest during nearly half of the period under consideration. The growth rate of handloom cloth production was found to be highest in Hailakhandi district while it was lowest in Morigaon district during the reference period.

During 2000-01 till 2016-17 the districts such as Kamrup (rural), Nalbari, Darrang, Barpeta, Sivasagar, Jorhat, Golaghat, Lakhimpur and Nagaon were seen to be leading in engaging weavers in the handloom weaving activities of the state. The average number of weavers engaged was highest in Kamrup (rural) district while it was lowest in Hailakandi district during that period. Kamrup (rural) district occupied leading position sharing largest percentage of weavers engaged in handloom sector of Assam during major half of the period under consideration. The growth rate of overall engagement of weavers was highest in Golaghat district while it was lowest in Cachar district during the reference period.

4.2 Effectiveness of Marketing of Handloom Items across the Weaving Business Units

For examining the effectiveness of marketing of handloom items, three indicators viz. sales volume, sales revenue and price spread have been used in the study. With reference to the weaving business in Mekhela-Chador, the average sales volume and sales revenue drawn are found to be higher in case of ‘B’ category compared to ‘A’ category of Mekhela-Chador. In addition, the mean price spread was relatively lower for ‘B’ category compared to the category ‘A’ of Mekhela-Chador. Hence, the success of marketing among the weavers of the study area was higher in case of ‘B’ category relative to ‘A’ category of Mekhela-Chador.

There is statistically significant mean difference in sales volume, sales revenue and price spread with the mean sales volume, sales revenue and price spread being

seen to be higher among master weaver units relative to independent weaver units. Hence, the master weaver units outperformed the independent weaver units in respect of sales volume and sales revenue generated from the business of handloom weaving items in the study area. However, between the two groups of weavers the success of marketing in terms of degree of price spread was better among the independent weaver units.

4.3 Determinants of Sales Volume, Sales Revenue and Price Spread of Handloom Items

With reference to the factors determining the sales volume of handloom items, it has been observed that categorical variables like type of weaving units, mode of acquisition of business, and non-categorical variables like working hours, number of managing staff, storage capacity, advance payment requirement, number of handloom competitors in village, and transportation cost in weaving business have helped in raising the sales volume of the product in the study area; while categorical variables like production on order basis, mode of selling, and non-categorical variables like price of the product, frequency of selling, distance to nearest town, and distance to weekly hut are seen to have significant inverse relationship with the sales volume of handloom items.

With regard to the factors influencing the sales revenue from handloom items in the study area, it has been found that years of schooling of weaving entrepreneurs, business experience of weaving entrepreneur, working hours, storage capacity, advance payment requirement, and number handloom competitors in village have helped in realization of higher revenue from the sales of handloom products, while frequent selling of finished product, and distance of weaving unit location from

nearest town adversely affected the sales revenue from handloom items in the study area.

Finally, taking account of factors determining the price spread of handloom items, it has been found that the price charged by the weaving business units, years of schooling of weaving entrepreneurs, business experience of weaving entrepreneurs, size of weaving business units, storage capacity, frequency of market information, number of handloom competitors in village, distance to nearest town, and distance of weaving unit from retail handloom outlet have helped in lowering the degree of price spread of handloom weaving items in the study area. Moreover, price spread was lower among male weaving entrepreneurs than their female counterpart. Bookkeeping practices in business also helped the sampled weaving units in containing the price spread of handloom items at lower level in the study area.

4.4 Policy Suggestions

Developing marketing linkages and road connectivity in rural areas should be a taken up on a priority basis for allowing the rural weavers in better access to the growth centre and major sales markets for promoting their sale of finished handloom product. Efforts should be made for encouraging vocational education and training program that will focus on entrepreneurship education, especially for rural female entrepreneurs. Such initiative may help in improving the managerial ability of the owner of business units. Initatives towards formation of marketing cooperatives may help the handloom weavers in accessing market opportunities and frequent market information and thereby would enable them to market their products together to address individual small output marketing constraints, small size of transport and high transportation costs in order to attract and penetrate high value markets. It was also

found that rural women led business units lagging behind in sales as well as in reducing the price spread in the study area. Hence, greater access to productive and financial resources may complement the women-led weaving units and enhance their participation in marketing activity by allowing them freedom to spare more time in their business activity besides the pre-occupied household responsibilities.

4.5 Research Limitations

Some of pitfalls of present research are its selectiveness by considering only two handloom products viz. Mekhela-Chador and Gamosa besides being restricted to geographically only one district of the state. Furthermore, the study could not cover the marketing aspects of primary weavers' co-operative society. Future research should be mindful of such limitations.

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