

1.1 Textile industry: the global perspective

The textile industry is one of the oldest, skill-based labour-intensive, and a dynamic, creative segment (Samo and Murad, 2019; Darji and Dahiya, 2021). It is very diverse with sectors dedicated to hand-spun and woven textiles on the one hand and capital-intensive mills on the other (Shahi, *et al.*, 2020). Although the performance of the textile industry has improved in the last ten years, it still faces various issues in the global market (MoT, 2020-21). The exports of world textiles (Standard International Trade Classification, SITC 65) and apparel (SITC 84) were worth 305 billion dollars and 492 billion dollars, respectively in 2019; these have gone down by 2.4% and 0.4% recently (World Trade Statistical Review, 2021). It is worth noting that despite China being the largest textile exporter globally, profits are low due to fierce competition, high input costs, and currency fluctuations (Zhang and Wang, 2010; Technopak Ministry of Textile, 2018). After phasing out of MFA (Multi-Fibre Agreement) Indian textile industry has come up in the global market with greater efficiency to compete with Bangladesh, Vietnam, and Cambodia (Indian Brand and Equity Foundation (IBEF), 2021; Medina *et al.*, 2019). Under MFA (1974 to 2004) developing countries of the world were restricted to export the textile and clothing products beyond a specific level in the developed countries' markets like the USA and the EU (Sharma and Prashaant, 2009). It was a common practice applied to bilateral trade and based on product fibre and function. It was discriminatory against particular fibres and goods as well as against exporting nations. Export quotas defined by MFA were assigned to exporters (developing countries) for administration based on pre-determined criteria by the governments of the developed countries (importers). Thus this unjust system of quotas went against all the basic doctrine of the multilateral trading mechanism. In addition to this, it affected the world's poorest nations who were looking for a shift from trade to manufacturing as their primary economic activity. So, it is

critical to understand that even with the elimination of MFA, trade in clothes and textiles will only be quota-free and not completely free (Kar, 2015).

1.2 Textile industry: Indian scenario

India's manufacturing sector was in a miserable state in the early 1980s due to restrictive regulations and legislation that stifled the growth and innovation (Bhandari and Maiti, 2007; Jackson and Kilduff, 1991). Thereafter, economic reforms were introduced in the 1990s, consequently industrial units started improving their performance (Bhandari and Maiti, 2007). Since 1994 Gross Domestic Product (GDP) of India has been growing at more than 7% annual average rate (Mukherjee, 2007). The Quick Estimates of Index of Industrial Production (IIP) for November 2021 is 128.5. Industrial Production Indices for mining, manufacturing, electricity, and textiles for November 2021 are 111.9, 129.6, 147.9, and 117.6 respectively as shown in Table 1.1 (National Statistical Office (NSO), Ministry of Statistics and Programme implementation (MOSPI) 2021-22).

The Indian textile industry is one of the key contributing manufacturing industries to the GDP of India. In 2017-18, 7% of the industrial output, 2% of the GDP, and 15 percent of export earnings were contributed by this sector. Also, it employed more than 45 million people (IBEF, updated on June 20). The textile manufacturing industry of India has great potential to grow in sales, employment, and export (Gambhir and Sharma, 2015b). In 2001, the industry was removed from the list of exclusively reserved sectors of Micro Small and Medium Enterprises (MSMEs) to develop this industry at the global level (Joshi and Singh, 2010). The Indian textiles industry is characterized by a huge number of skilled and unskilled labour, sufficient raw materials base, export potential, less reliance on imports, and availability of labour at a cheaper price (K. Narayanan, 2009).

Table 1.1: Industrial Production Index (The base year ‘2011-12’ = 100)

Industry Name	Weight	Index		Growth%
		Index Nov 20	Index Nov 21	
Mining	14.3725	106.6	111.9	4.97
Manufacturing	77.6332	128.5	129.6	0.86
Electricity	7.9943	144.8	147.9	2.14
Textiles	3.2913	108.9	117.6	7.99
Source: IIP Press release Nov'2021 * data for November 2021 – ‘Quick estimates’.				
#The exceptional circumstances caused by the COVID 19 outbreak would be taken into account when interpreting growth figures for the corresponding period last year				

The Formal and informal organisations in the textile industry account for the largest job providers in India after the agricultural sector. It is worth noting that the textile sector of India is contributing significantly to foreign exchange earnings of India but its low share in the world export of textile and apparel as compared to other countries (Like China, Hongkong, Singapore, and South Korea) is a concern for policymakers.

1.3 Textile Manufacturing Process

Cultivation and Harvesting: the process of picking the seed cotton from the burrs that are attached to plants’ stems.

Ginning: It is the process of separation of fibres from the seeds by combing, carding, blending, or scutching.

Spinning: a process through which yarn is made from the fibre is known as spinning.

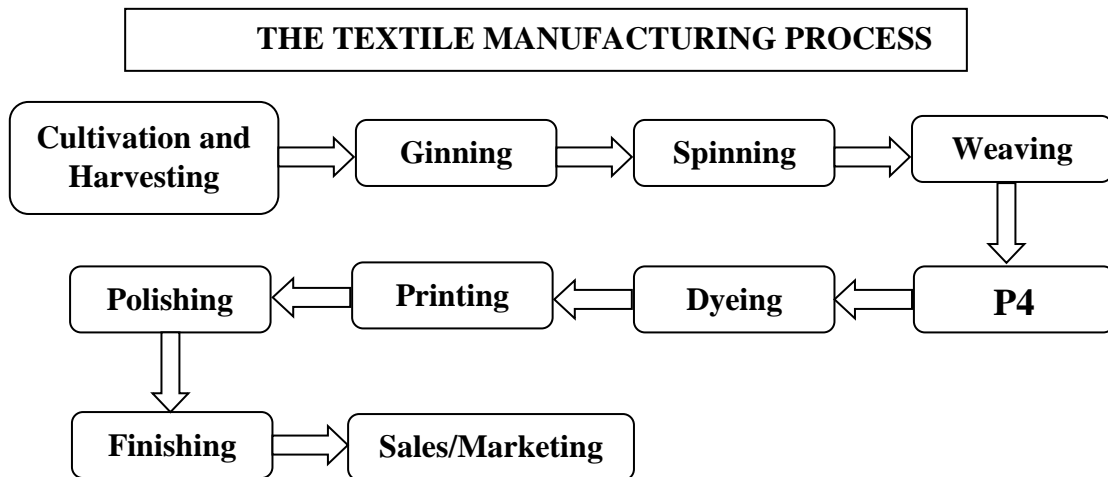
Weaving: it is a process in which fabric is made by setting two set of yarn.

Knitting: knitting is a technique for shaping yarn to create a textile (Dyeing, Printing, Polishing).

Finishing/Wet Processing: it is the process completed by Dyeing and Printing, and Polishing.

Sales/Marketing: the textile is ready for sale.

Figure 1.1: Textile Manufacturing Process



Source: Author's compilation

Yarn Manufacturing: Natural fibre is made up of natural contaminants that are eliminated during the subsequent pre-treatment procedure. Cotton is the fibre that is used in yarn manufacturing, beginning with the opening of fibre bales and continuing through a series of continuous activities such as melding, mixing, cleaning, carding, drawing, roving, and spinning. All of these procedures are mechanical, and no chemical processes are required.

Processing Stage of yarn manufacturing: Each stage of yarn manufacturing requires the use of a unique machine that produced high-quality yarn. Cotton fibre is harvested mechanically rather than manually.

Fabric manufacturing: Fibre/yarn interlacing creates at least a two-dimensional architecture in textile fabric. The fabric is produced primarily through the use of looms and weaving techniques.

Garment Manufacturing

The garment, or item of clothing, is a blend of art and science. It is witnessed that automation, improvement in design, and computer-aided manufacturing (CAD) has been implemented in the garment industry during the last decade. Even now, the method of cutting

and sewing at least two pieces of fabric together is the most often used in the garment manufacturing industry. Sewing machines stitch woven and cut-knit materials together. A sewing machine is used to join the pieces of fabric together. Product development, production scheduling, and material selection are among the industry's main priorities now a days.

The diagrammatic representation of textile manufacturing is given below;

The use of CAD, cutting, sewing, and flawless garment production, can help designers better satisfy the requirements of their customers' wardrobes. There has been a lot of progress in garment finishing, quality control, and care labeling.

1.4 The Haryana State

Haryana is located in the northern part of India and the state share its border with Uttar Pradesh from the east, Punjab from the west, Himachal from the north, and Rajasthan from the south. Moreover, Haryana state has a special location advantage because it is adjacent to New Delhi (the national capital of India). Previously, Haryana was known for its strong agriculture base but now it has been transformed into an industrial state. The government of Haryana is continuously working to create a conducive environment for businesses. As per industrial and investment policy 2011, the government offers many fiscal incentives to corporates. According to the Business reforms action plan (2017), Haryana has been ranked third on the list of most business-friendly states in the country. The state has seven export-oriented Special Economic Zones (SEZs) as of October 2020 (SEZs).

At current prices, the Gross State Domestic Product (GSDP) of the Haryana has improved by 162.4%, from 297538.52 crores (2011-12) to 780612.35 crores (2019-20). From the year 2012-13 to 2019-20, the average annual growth has been recorded at 12.8%. The per-capita income has increased by 133.4% at current prices from the year 2011-12 to 2019-20. The average annual growth rate of per-capita income has been estimated at 11.2% at current

prices from 2012-13 to 2019-20 (Haryana State Industrial and Infrastructure Development Corporation (HSIIDC), 2021; IBEF, 2021).

The Industrial Model Township (IMT) Manesar is located about 50 kilometers from Delhi on NH-8. This industrial hub consists of high-tech and low-pollution industries like automotive, readymade clothing, information technology (ITeS), and packaging. The Udyog vihar in Gurugram city is about 8 kilometers away from IGI airport on the NH-8, and it consists of units that focus on IT/ITeS, electronic products, medicines, and light engineering, as well as ready-made garments (HSIIDC Haryana, 2021).

1.5 The Textile Manufacturing Industry in Haryana

Haryana is the leading cotton-producing state in India. Cotton is the primary raw material for producing 'fibre' that is further used for making cloth/clothes in textile mills. There are nine central cotton-producing states in India with three zones the North Zone (Haryana, Punjab, Rajasthan), Central Zone (Madhya Pradesh, Gujrat, Maharastra,) and South Zone (Karnataka, Andhra Pradesh, Telangana). Production and productivity of cotton are improved significantly throughout all the zones during the last decade (2008-09 to 2017-18). In contrast, Haryana secured the first position in India's north zone (Ministry of Textile (MoT), 2018). It shows the strong position of Haryana throughout the entire value chain starting from fibre to fashion. Textile manufacturing units located in Haryana have immense potential for growth as there is an abundant supply of raw material, strong infrastructure, and availability of skilled labour. The government has already issued a notification regarding the new Textile Policy 2018 for promoting the development of the textile sector in Haryana (Haryana Textile Policy, 2019). According to textile policy (2019) four key sectors of Haryana are (1) Textile (2) Automotives (3) IT&ITeS, and (4) Agriculture and Allied Industries. Approximately 6% of India's total cotton production comes from Haryana, which is the country's fourth-largest producer. The district including Hisar, Sirsa, Fatehabad, Jind, and Bhiwani, are the major

cotton producer in Haryana. The state has a competitive advantage in the textile industry because of its abundant supply of raw materials. Boosted by rising local demand as well as a rise in exports, the state's textile sector may achieve great growth with an innovative strategy and focused interventions. In Haryana, districts such as Sonapat, Panipat, Faridabad, Gurugram, and Hisar have been transformed into strong textile centres (Haryana Textile Policy, 2019). Cotton production in Haryana has increased from 14 lakh bales in 2008-09 which was 35.48 percent of the total production of north India to 25 lakh bales (provisional) in 2017-18 which was 42.37 percent of the total production of north India, thereby registering a growth of 78% (MoT, 2018 referenced from Cotton Advisory Board of India, as per CAB meeting dated 12-12-2017).

Domestic consumption and export of Haryana's textile products are being increased today by innovative strategies and targeted interventions. The government's vision is to promote sustainable development that will increase the industrial output and boost the income of millions of people (Progress, Harmony and Development (PHD) Chamber of Commerce and industry (PHDCCI), 2019). The textile sector of Haryana contributed to improving the living standard by employing approx 1 million people. The major objectives of Haryana's textile policy 2019 are to attract huge investment and create immense job opportunities, to increase textile export by a CAGR (Compound Annual Growth Rate) growth of 20 percent, and to boost development in the lagged area of the state. Textile cluster Panipat in Haryana is one of the high-tech clusters of India and still is in the process of evolution (Gulrajani, 2006). Haryana's textile policy aims to encourage export, particularly focusing on garments, technical textiles, and made-ups, by making a favorable environment in the state. Apart from this, it also promotes a culture of research, creativity, and entrepreneurship. It also supports the creation of world-class infrastructure for training to nurture and thrive the local talent according to a globally competitive standard. The government of India provides the funds

under the Amended Technology Up-gradation scheme (ATUFS) for the replacement of the old and outdated machinery with the new ones to upgrade the technology in the textile sector. As per the scheme, the government provides 50% of the cost of the machinery to the eligible textile units. Selected Textile Parks approved by the State Government of India may be eligible to get financial assistance under various initiatives run by the Central Government. The State Government would accelerate the construction of new textile parks by expediting the necessary clearances in a time-bound manner. The Right to Service Act will be used to issue approvals for vital services, within the 45-day deadline. Textile parks that have been granted a license by the Town and Country Planning Department are not exempted from paying external development charges (EDC) and infrastructure development charges (IDC). Additionally, there is a huge capacity to improve the financial performance of the textile industry in Haryana. In the present study, the financial performance is evaluated through various business statistics (financial ratios) that indicate the industry's financial health. Although, a wide range of textiles are produced including hand-spun, hand-woven goods, and capital-intensive mills that use advanced machinery while on the other hand manual work, problems in the weaving sector, and uneven regional development are hampering the industry's growth. Additionally, state and central government bring changes from time to time regarding tax structure, interest rates, labour pay, and salaries which may sometimes create hindrances for the industry. An organisation's ability to produce high-quality products at lower prices depends on its employees, and processes (Digalwar *et al.*, 2017).

1.6 Objectives of the Study

The core objective of this study is to examine the overall performance of the textile manufacturing industry in Haryana, a state in northern India. The study also explained the major schemes and initiatives of the government that aid the industry to increase its performance as a whole. On the other hand, the study has also analysed and highlighted the

major problems faced by the textile industry in Haryana. Thereby, stakeholders will get a true picture of the status of the textile industry in Haryana. The below-mentioned objectives have been assessed in the present study:

1. To study various Initiatives taken by the Central and State governments for Textile Units.
2. To measure the growth and performance of Textile Units in Haryana.
3. To study the financial performance of selected Textile Units in Haryana.
4. To identify the problems faced by selected Textile Units in Haryana.
5. To recommend or suggest suitable measures for the development of Textile Units in Haryana.

The overall performance of the textile manufacturing industry has been assessed by fulfilling the above-mentioned objectives of the study. Data Envelopment Analysis (DEA) has been used to analyse the operational and financial performance whereas Interpretive Structural Modelling (ISM) and the Matriced' Impacts croises-multiplication applique'eaclassment (MICMAC) analyses have been used to analyse the problem part of the textile industry in Haryana. The variables used to analyse the operational performance were Raw material, Labour, Net sales, and other expenses while various financial ratios i.e., Fixed asset turnover ratio (FATR), Receivable account turnover ratio (RATR), Current ratio (CR), Debt equity ratio (DER), Net Profit Margin (NPM), Return on equity (ROE) have been calculated based on the balance sheet data of each selected textile companies in Haryana to analyse the financial performance. The insight of the study is that the textile manufacturing companies in Haryana are inefficient financially and operationally up to the great extent. This is because of either the wrong selection of input variables or an optimization problem in the input size. At last significant problems have been identified and the contextual relationship has been established among them by applying ISM and MICMAC analysis.

1.7 Contribution of the study

India is a vast country with a diverse culture and significant divisions based on geography, religions, races, traditions, and values. Thus, it appears to be more appropriate to focus on a specific region of India (Haryana) rather than on the country as a whole, which may provide more relevant results because problems vary by country, state, and even within the small area. India has "Unity in diversity," as stated in its "Constitution," lends credence to this claim. Haryana is a 44,212-square-kilometer state in India, and the studies conducted at the national and international levels aren't exactly the right fit for a particular area like Haryana due to the above reasons. Thus, this study is critical and will unquestionably benefit the textile businesses and their stakeholders in Haryana, a specific geographic area.

The thesis is a remarkable attempt towards identifying various schemes initiated by the central and state government for the textile industry. The benefits and shortcomings of different schemes and policies have been highlighted briefly. The study has conducted a firm-level operational performance analysis based on five years of data (2015-16 to 2019-20). The study has shown the efficient companies and inefficient companies at its operations across Haryana as there are no such studies found yet. It is significant for the top managers of the company.

Moreover, the thesis contributes to showing the financial performance through the DEA technique using various financial ratios based on the company-level data from 2015-16 to 2019-20. It highlighted the financially efficient, inefficient, and benchmark companies across Haryana. Further, the thesis analyse the important issues confronted by Haryana's textile industry using the ISM and MICMAC analysis. It has made a remarkable attempt at evaluating crucial problems and their contextual relationships that obstruct the industry's performance.

1.8 Chapterisation/Organisation of the Study

The thesis is structured into 9 chapters. Chapter 2 describes the literature review part of this study comprises five sections, part 2.2 and 2.3 depict the institutional changes and various initiatives of state and central government. Section 2.4 deals with the studies on the growth of the textile manufacturing industry. Section 2.5 discusses the existing literature on the operational performance of various textile and other manufacturing companies. Section 2.6 considers the various studies on the financial performance of manufacturing units. Section 2.7 briefs the studies on the problem of the various textile and other manufacturing companies. Section 2.8 concludes the literature review part. Chapter 3 discusses the model specification and methodology that has been used in the thesis. The first section of this chapter describes the model specification and the second part describes the details of the methodology used in the study.

Chapter 4 explains the various schemes and initiatives introduced by the central and state government for the textile industry. This chapter also includes the benefits and shortcomings of the schemes and further recommendations have also been added by the researcher. Chapter 5 discusses the growth in cotton production in Haryana. Chapter 6 analyse the operational performance of the textile manufacturing units in Haryana. It includes an introduction, data and variable selection, methodology, and results. Chapter 7 discusses the financial performance of the textile manufacturing units in Haryana. It encompasses an introduction, data and variables selection, methodology, and results.

Chapter 8 deals with the major problems of the textile manufacturing units in Haryana and established the contextual relationship among them by applying ISM and MICMAC analysis. This part of the thesis shows the introduction, major problems, data information, methodology, and results. Chapter 9 provides the overall result and discussion of the thesis.

Policy implications and recommendations have been proposed after the findings. In the last part of this chapter, future scope of research is suggested.